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CHAPTER 7

Working Models of Attachment

New Developments and Emerging Themes

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> Every situation we meet with in life is constructed in terms of the representational models we have of the world about us and of ourselves. Information reaching us through our sense organs is selected and interpreted in terms of those models, its significance for us and for those we care for is evaluated in terms of them, and plans of action conceived and executed with those models in mind. On how we interpret and evaluate each situation, moreover, turns also how we feel.
>
> —BOWLBY (1980, p. 229)

A fundamental assumption of attachment theory is that adults do not enter relationships as tabula rasas, or blank slates. Instead, they bring with them a history of social experiences and a unique set of memories, expectations, goals, and action tendencies that guide how they interact with others and how they construe their social world. Although these mental representations continue to evolve as individuals develop new relationships throughout their lives, attachment theory assumes that representational models that begin their development early in one's personal history are likely to remain influential. Internal *working models* of attachment are thought to be core features of personality that shape the manner in which the attachment system is expressed by directing cognitive, affective, and behavioral response patterns in attachment-relevant contexts. Furthermore, individual differences in *attachment style* observed between children and adults are attributed to systematic differences in underlying models

of self and others, and whatever continuities exist in these styles across the lifespan are proposed to be largely a function of the enduring quality of these models (Bowlby, 1973; Bretherton, 1985; Collins & Read, 1994; Main, Kaplan, & Cassidy, 1985).

The working-models concept is thus a cornerstone of attachment theory; working models are presumed to organize attachment behavior, mediate individual differences in attachment style, and explain stability in attachment functioning across the lifespan. Because of its central theoretical relevance, researchers have devoted considerable attention in recent years to understanding the nature of working models in adulthood. These efforts have resulted in a growing body of work that includes increasingly detailed theories about the content and functioning of working models and increasingly sophisticated methodologies for studying them. Nevertheless, although significant gains have been made, there are still many unanswered questions and many topics in need of theoretical and empirical clarification. Our goal in this chapter is to provide an in-depth review of theory and empirical work on working models of attachment in adulthood and to identify untested assumptions, gaps in our knowledge, and contemporary trends in the field (see also Pietromonaco & Feldman Barrett, 2000). In our prior work on attachment representations, we proposed a framework for understanding the content, structure, and function of working models by integrating attachment theory with research and theory in the social-cognitive literature on the nature of mental representation and its role in social experience (Collins & Allard, 2001; Collins & Read, 1994; Shaver, Collins, & Clark, 1996). Because this approach has proven useful to attachment scholars, we continue to utilize it as a framework for organizing this discussion.

We begin by briefly reviewing the major propositions outlined by Bowlby and others on the early development and nature of working models. Next, we specify the components of working models and discuss how these components are useful for mapping out differences in adult attachment styles. We then discuss how working models are likely to be structured in memory, focusing on the complex and multidimensional nature of attachment representations and the distinction between general and relationship-specific working models. Finally, we consider how working models function and the processes through which they shape cognitive, affective, and behavioral response patterns in adulthood.

WORKING MODELS FROM CHILDHOOD TO ADULTHOOD

Bowlby (1973) used the term "working models" to describe the internal mental representations that children develop of the world and of significant people within it, including the self (Bretherton, 1985). These repre-

sentations evolve out of experiences with attachment figures and center around the regulation and fulfillment of attachment needs–namely, the maintenance of proximity to a nurturing caregiver and the regulation of felt security (Bretherton, 1985; Sroufe & Waters, 1977). Of course, not all infants will have access to caretakers who respond to their needs in a consistent and loving manner. Thus the quality of the infant–caretaker relationship and hence the nature of one's working models are expected to be largely determined by the caregiver's emotional availability and responsiveness to the child's needs. Working models are hypothesized to include two complementary components, one referring to the attachment figure and the other referring to the self. The former characterizes whether the caregiver will be available, sensitive, and responsive when needed, and the latter characterizes the self as either worthy or unworthy of love and care.

Early working models are thus composed of schemata that reflect a child's attempts to gain comfort and security, along with the typical outcome of those attempts (Main, Kaplan, & Cassidy, 1985), and they are expected to be fairly accurate reflections of social reality as experienced by the developing child (Bowlby, 1973). One central aspect of working models adopted by Bowlby is the idea that working models are used to predict the behavior of others and to plan one's own behavior in social interaction. Working models shape how the attachment behavioral system is expressed, and are dynamic and functional. For this reason, individual differences in infant *behavioral* patterns, as displayed in diagnostic situations, are used to infer underlying differences in internal working models (Main et al., 1985) and serve as the basis for categorizing infants into secure and various forms of insecure attachment styles (Ainsworth, Blehar, Waters, & Wall, 1978).

In early childhood, attachment models appear to be relatively open to change if the quality of caregiving changes (see Bretherton & Munholland, 1999, for an overview). However, given a fairly consistent pattern of caregiving throughout childhood and adolescence, working models are expected to become solidified through repeated experience and increasingly generalized over time. Thus what begins as a schema of a specific child–caretaker relationship results in the formation of more abstract representations of oneself and the social world (Shaver, Collins, & Clark, 1996). Once formed, these representations are likely to operate automatically and unconsciously, thereby making them resistant (but certainly not impervious) to dramatic change (Bowlby, 1979). Thus working models of self and others that take root in childhood and adolescence become core features of personality that are carried forward into adulthood, where they continue to shape social perception and behavior in close relationships.

On the basis of this assumption, attachment theory has become a widely used model for understanding interpersonal behavior and romantic experience in adult close relationships (see Feeney, 1999a, for a review). Inspired by Hazan and Shaver's (1987) seminal paper on romantic love as an attachment process, much of the empirical work has focused on individual differences in adult *attachment styles.* These styles reflect chronic differences in the way individuals think, feel, and behave in close relationships, and they are believed to be rooted in systematic differences in working models of self and others.

Adult attachment researchers typically define four prototypic attachment styles derived from two underlying dimensions (Bartholomew & Horowitz, 1991; Brennan, Clark, & Shaver, 1998). The first dimension, labeled *anxiety,* reflects the degree to which individuals worry about being rejected, abandoned, or unloved by significant others. The second dimension, labeled *avoidance,* reflects the degree to which individuals limit intimacy and interdependence with others. *Secure* individuals are low in both anxiety and avoidance. They feel valued by others and worthy of affection, and they perceive attachment figures as generally responsive, caring, and reliable. They are comfortable developing close relationships and depending on others when needed. *Preoccupied* individuals (also called *anxious–ambivalent*) are high in anxiety but low in avoidance. They have an exaggerated desire for closeness but lack confidence in others' availability and likely responsiveness to their needs. They depend greatly on the approval of others for a sense of personal well-being but have heightened concerns about being rejected or abandoned. *Fearful–avoidant* individuals are high in both anxiety and avoidance. They experience a strong sense of distrust in others coupled with heightened expectations of rejection, which result in discomfort with intimacy and avoidance of close relationships. Finally, *dismissing–avoidant* individuals are low in anxiety but high in avoidance. They perceive attachment figures as generally unreliable and unresponsive but view themselves as confident and invulnerable to negative feelings. They attempt to maintain a positive self-image in the face of potential rejection by minimizing attachment needs, distancing themselves from others, and restricting expressions of emotionality.

These attachment styles represent theoretical prototypes that individuals can approximate to varying degrees (Griffin & Bartholomew, 1994), and there is growing consensus that individual differences are best measured in terms of the two continuous dimensions (anxiety and avoidance) that underlie the prototypes (Brennan, Clark, & Shaver, 1998; Crowell, Fraley, & Shaver, 1999; Fraley & Waller, 1998). However, because researchers in the past have used a variety of methods for conceptualizing and measuring attachment style, our review of the literature will necessarily involve some inconsistencies in terminology.

Despite differences in the conceptualization and measurement of attachment style, adult attachment researchers agree that individual differences in attachment patterns are rooted in the nature and content of

working models. We begin our discussion of working models in adulthood by identifying their components and exploring how they may differ for adults with different attachment styles.

THE CONTENT OF WORKING MODELS

What are working models? Working models of attachment are similar in many ways to other cognitive structures studied by social psychologists, including schemas, scripts, and prototypes. Like all such constructs, working models are hypothetical cognitive–affective structures that are presumed to be stored in long-term memory and activated in response to attachment-relevant cues. They organize past experience and provide a framework for understanding new experiences and guiding social interaction (Bretherton & Munholland, 1999; Collins & Allard, 2001; Shaver, Collins, & Clark, 1996). However, unlike traditional approaches to schemas, which tend to focus on semantic knowledge and verbal propositions, attachment theory places greater emphasis on the representation of motivation and action tendencies. In addition, because working models are formed in the context of emotional experiences with significant others and center around the fulfillment of emotional needs, they are more heavily affect laden and more explicitly interpersonal than other knowledge structures typically studied by social psychologists. Despite these differences, the working-models construct is highly compatible with a number of contemporary theories in social and personality psychology that emphasize the importance of cognitive–motivational representations of the self in relation to others (e.g., Andersen & Chen, 2002; Baldwin, 1992; Mischel & Shoda, 1995). Indeed, attachment theory provides an important point of contact between the close-relationships literature, which is increasingly interested in the cognitive processes that shape interpersonal experience (e.g., Berscheid, 1994; Holmes, 2002), and the social-cognition literature, which is increasingly interested in mental processes in the context of significant relationships (e.g., Fitzsimons & Bargh, 2003; Moretti & Higgins, 1999; Shah, 2003).

Building Blocks of Working Models

Because working models are built within the context of the attachment behavioral system, Collins and Read (1994) proposed that they should include four interrelated components: (1) memories of attachment-related experience, (2) beliefs, attitudes, and expectations about self and others in relation to attachment processes, (3) attachment-related goals and needs, and (4) strategies and plans associated with achieving attachment goals.

Attachment-Related Memories

Memories and accounts of attachment-related experiences are important components of working models. These should include not only representations of specific interactions and concrete episodes but also constructions placed on those episodes, such as appraisals of experience and explanations for one's own and others' behavior. Because these memories should be based, in part, on actual experience, we would expect that secure adults would be more likely than insecure adults to report positive relationship experiences with key attachment figures. Evidence for this assumption has been obtained in a number of studies involving retrospective reports of relationships with parents (Collins & Read, 1990; Feeney & Noller, 1990, Hazan & Shaver, 1987; Rothbard & Shaver, 1994). For example, Hazan and Shaver (1987) found that secure adults remembered their relationships with their parents as more affectionate and warm than did avoidant or anxious adults. In a more recent study of community women, Shaver, Belsky, and Brennan (2000) examined memory for attachment experiences as coded from the Adult Attachment Interview (AAI; George, Kaplan, & Main, 1984). Overall, insecure women had more negative attachment memories than secure women. For example, avoidant women (those uncomfortable with closeness and with depending on others) described their mothers as less loving and more neglecting, their fathers as neglecting and rejecting, and a mother–daughter relationship that involved role reversal (in which the mother relied on the daughter for care).

In addition to differing in the *content* of their attachment memories, secure and insecure adults also differ in the degree to which they effectively process information about their past attachment experiences. Relative to secure individuals, anxious and avoidant individuals appear to have less integrated and organized attachment memories, which makes it difficult for them to provide a coherent account of their early attachment experiences (Shaver et al., 2000). Secure and insecure adults also differ in the cognitive *accessibility* of their attachment-related memories. Avoidant adults have greater difficulty retrieving attachment memories (Mikulincer & Orbach, 1995; Shaver et al., 2000), and preoccupied adults have more ready access to negative than positive memories (Mikulincer, 1998b, Study 1; Mikulincer & Orbach, 1995). For example, Mikulincer and Orbach (1995) asked young adults to recall childhood experiences in which they felt a particular emotion (anger, sadness, anxiety, and happiness), and the time taken to retrieve each episode was then recorded. Anxious–ambivalent individuals showed the fastest responding (highest accessibility) to sadness and anxiety memories, whereas avoidant individuals showed the slowest responding (lowest accessibility). In addition, anxious–ambivalent individuals were faster to retrieve negative than positive memories, whereas secure individuals showed the opposite pattern.

Attachment-Related Beliefs, Attitudes, and Expectations

A person's knowledge about self, others, and relationships is likely to be extremely complex in adulthood. It will include not only static *beliefs* (e.g., "relationships require a lot of work") but also *attitudes* (e.g., "relationships are not worth the effort") and *expectations* (e.g., "I am unlikely to find someone who will love me completely"). This knowledge is abstracted, in part, from concrete experiences with key attachment figures and can vary in level of abstraction. Some will be associated with particular attachment figures (e.g., "my mother is emotionally distant"); others will be broader generalizations about relationships (e.g., "friends can be counted on for support") or about people (e.g., "people are trustworthy").

Although empirical work is still in its early stages, important links have been found between self-reported attachment style and general beliefs about the self and the social world. Overall, relative to avoidant and anxious adults, secure adults have more positive beliefs about the self in relation to others (Collins & Read, 1990; Hazan & Shaver, 1987; Mikulincer, 1995, Studies 1 & 2). For example, Collins and Read (1990) found that secure adults were higher in global self-worth, saw themselves as more confident in social situations, were more interpersonally oriented, and were more assertive as compared with anxious individuals. Avoidant individuals did not differ from the secure group in their global self-worth or assertiveness, but they did view themselves as less confident in social situations and less interpersonally oriented. Subsequent studies that have differentiated dismissing from fearful avoidance consistently find that dismissing individuals report high levels of self-worth, similar to secure individuals, but fearful individuals report very low levels of self-worth (Bartholomew & Horowitz, 1991; Brennan & Bosson, 1998; Brennan & Morris, 1997; Griffin & Bartholomew, 1994). However, although secure and dismissing adults report similar *levels* of global self-esteem, they differ in the relative importance they place on different *sources* of self-worth (Brennan & Bosson, 1998; Brennan & Morris, 1997). Dismissing adults place greater weight on competence-based sources of esteem (e.g., autonomy, environmental mastery), whereas secure adults place greater weight on interpersonal sources (e.g., positive relations with others). In future work, it would be interesting to study attachment differences in other contingencies of self-worth (Crocker & Wolf, 2001), as well as the degree to which self-worth is stable or unstable (Kernis & Waschull, 1995).

In addition to identifying the content of self-knowledge, secure and insecure adults also differ in the way their self-knowledge is organized. For example, secure individuals have more balanced, complex, and coherent self-structures than anxious and avoidant individuals (Mikulincer, 1995, Studies 3 & 4); they also report fewer discrepancies between their

actual self and their *ideal* self and between their actual self and their *ought* self (Mikulincer, 1995, Studies 5 & 6). In addition, although the self-concepts of secure individuals include both positive and negative features, their positive features are more central than their negative features, whereas fearful individuals show the opposite pattern (Clark, Shaver, & Calverley, cited in Shaver & Clark, 1996).

Relatively fewer studies have investigated attachment differences in beliefs about others and the social world, but these studies consistently reveal that secure adults have more optimistic expectations about relationships and about the general benevolence of others (Collins & Read, 1990; Hazan & Shaver, 1987; Mikulincer, 1995, Studies 1 & 2). For example, Collins and Read (1990) found that secure adults viewed people in general as trustworthy, dependable, and altruistic; whereas avoidant adults were suspicious of human motives, viewed others as not trustworthy and not dependable, and doubted the honesty and integrity of social role agents such as parents. Anxious adults thought others were complex and difficult to understand and that people have little control over the outcomes in their lives. Baldwin, Fehr, Keedian, Seidel, and Thomson (1993) have shown that attachment-related beliefs about relationships may be stored as "if–then" propositions that reflect one's expectations about their social interactions with others. In one study, they asked participants to consider a number of hypothetical, attachment-relevant behaviors (e.g., "If I depend on my partner . . .") and then to rate the likelihood that their partner would respond in various positive and negative ways (e.g., "then my partner will leave me" or "then my partner will support me"). Results indicated that secure participants held more positive if–then expectancies than did avoidant or anxious–ambivalent (preoccupied) participants. In a second study, reaction time data provided further evidence that insecure adults hold more pessimistic interpersonal expectations than secure adults. For example, when avoidant participants were given a prime that involved trusting a romantic partner, they showed particularly quick reactions to the negative outcome word "hurt."

Finally, one study has examined attachment differences in the complexity of one's relationship knowledge. Fishtein, Pietromonaco, and Feldman Barrett (1999) found that preoccupied individuals who were involved in high-conflict relationships had more complex knowledge structures than those in low-conflict relationships; these differences were primarily due to their use of distinct, positive attributes. These authors suggest that this pattern may result from preoccupied individuals' tendency to encode high-conflict interactions in both positive and negative terms because conflict provides an opportunity for increased closeness and intimacy (Pietromonaco & Feldman Barrett, 1997). In future research, it will be important to investigate other structural features of relationship knowledge (e.g., coherence, integration, differentiation, elab-

oration, compartmentalization) and to study their implications for information processing and relationship resilience (e.g., Murray & Holmes, 1999; Showers & Kevlyn, 1999). Holmes (2002) offers some valuable insights concerning the nature of relationship expectations and some suggestions about the ways in which secure and insecure adults may differ in the structure of their mental models of others.

Attachment-Related Goals and Needs

Although the attachment behavioral system serves the broad goal of maintaining felt security, a person's history of achieving or failing to achieve this goal is expected to result in a characteristic hierarchy of attachment-related social and emotional needs. For example, people differ in the extent to which they are motivated to develop intimate relationships, avoid rejection, maintain privacy, seek approval from others, and so on. As such, the goal structures of secure and insecure individuals should differ considerably. For example, secure adults are likely to desire intimate relationships with others and to seek a balance of closeness and autonomy within relationships. Preoccupied (anxious–ambivalent) adults also desire close relationships, but their additional need for approval and fear of rejection may lead them to seek extreme intimacy and lower levels of autonomy. Avoidant adults are guided by a need to maintain distance; dismissing avoidants seek to limit intimacy in the service of satisfying their desire for autonomy and independence, but fearful avoidants do so to avoid rejection (Bartholomew & Horowitz, 1991).

Although there is little empirical work that directly addresses these hypotheses, several studies have explored the goal structures of adults with different attachment styles (Collins, Ford, Guichard, & Allard, 2003; Feeney, 1999b; Mikulincer, 1998b). For example, Collins and colleagues (2003) asked participants to rate the importance of their romantic partner fulfilling specific attachment-related needs for comfort, support, and proximity (e.g., "How important is it that your partner comforts you when you are feeling down?"). Preoccupied and fearful individuals (those high in attachment-related anxiety) rated these needs as very important, whereas dismissing individuals rated them as relatively unimportant; secure individuals fell in between these two extremes. Along similar lines, Feeney (1999b) found that when dating partners were asked to describe their relationships, dismissing men were more likely to spontaneously mention goal conflicts centering on their need to remain self-reliant, to maintain distance, and to control the emotional climate of their relationship, whereas anxious women were more likely to mention goal conflicts centering on their need for greater closeness. Relative to secure and preoccupied adults, avoidant adults also place greater weight on non-attachment-related goals and needs, such as achievement in school or career

(Brennan & Bosson, 1998; Brennan & Morris, 1997; Hazan & Shaver, 1990), which may be one method of minimizing attachment concerns and managing their need for social distance.

Finally, two recent studies point to the importance of studying broader motivational systems. Based on models that postulate the existence of distinct appetitive (approach) and aversive (avoidance) motivational systems (e.g., Gray, 1987), Feeney and Collins (2003) explored the specific motives that promote or inhibit caregiving behavior in couples. Overall, secure and anxious individuals were more likely than avoidant individuals to endorse approach motives, although their specific approach goals differed. Secure individuals (those lower in anxiety and avoidance) provided care to their partners for relatively altruistic reasons—because they wanted to increase their partners' well-being and because they enjoyed helping their partners. Anxious individuals provided care for relatively egoistic reasons—because they wanted to create closeness, to make their partners dependent on them, and to feel in control. In contrast, avoidant individuals tended to endorse aversive (avoidance) motives. Specifically, they often *failed* to provide care to their partners because they were uncomfortable with their partners' distress, perceived that helping would lead to negative consequences (e.g., that their partners would be difficult to interact with or would lack appreciation), and because their partners were too dependent on them. In another study, Elliot and Reis (2003) investigated the links between approach and avoidance motives in the domain of achievement. In a series of studies, they found that secure participants had higher achievement motivation and lower fear of failure and that they adopted more approach versus avoidance goals (e.g., seeking to master course content versus seeking to avoid doing poorly) and appraised specific achievement tasks (e.g., an upcoming exam) as a positive challenge rather than a threat. In contrast, anxious individuals adopted more avoidance goals and tended to appraise tasks as threatening. These authors speculate that secure attachment will facilitate approach-oriented motivational processes in *all* spheres of functioning because it enables individuals to pursue their goals with confidence that support and acceptance are readily available if needed. In contrast, insecure attachment is likely to facilitate avoidance-oriented motivational processes because it orients individuals toward the prevention of negative outcomes that could place them at risk for rejection or abandonment. These processes are worth studying in future research.

Plans, Strategies, and Action Tendencies

Individuals are expected to have encoded as part of their working models a set of plans and strategies for regulating their attachment-related needs, and these strategies should be contingent, at least in part, on a person's

history of experiences with key attachment figures (Main, 1981). Thus attachment-style differences are expected in one's plans and strategies for dealing with socioemotional needs and goals, including strategies for regulating emotional distress (Kobak & Sceery, 1988), obtaining comfort when needed, maintaining autonomy, developing intimacy with others, giving comfort to others, and so on.

Identifying individual differences in plans and action tendencies poses some difficulties because such representations are likely to be stored as procedural knowledge that is difficult to articulate and that may operate largely outside awareness. One way to identify plans and strategies is to examine how different individuals respond to the same controlled social stimulus. For example, in a series of studies, Collins and colleagues (Collins, 1996; Collins et al., 2003) asked respondents to imagine a variety of attachment-relevant events (e.g., "imagine that your partner didn't comfort you when you were feeling down") and then to describe how they would respond in each situation. Content coding of these descriptions revealed important differences in behavioral strategies. Overall, relative to insecure adults, secure adults tended to choose behavioral strategies that were less punishing toward their partners and less likely to lead to conflict. In another study, Ognibene and Collins (1998) asked young adults to describe how they would cope with a series of hypothetical stressful life events. Results revealed systematic differences in the coping strategies of adults with different attachment styles. For example, secure and preoccupied adults were more likely than avoidant adults to say that they would seek social support. Finally, Pierce and Lydon (1998) found that both chronic and temporarily primed attachment schemas were linked to coping behavior. Participants with different attachment styles were asked to imagine a stressful situation and to report their likely coping responses after being subliminally primed with accepting or rejecting interpersonal expectancies. Women who were chronically secure, as well as those primed with accepting interpersonal expectancies, were more likely to seek social support and less likely to engage in self-denigrating coping.

Another useful research strategy is to employ response-latency paradigms to uncover unconscious action tendencies that may be linked to particular interpersonal contexts. For example, Mikulincer (1998b, Study 5) used a lexical decision task to study attachment style differences in the way people cope with trust violations. Secure and anxious–ambivalent adults responded quicker to the word "talk," whereas avoidant adults responded quicker to the word "escape." Finally, action tendencies can, of course, be illuminated by observing actual behavior in attachment-relevant contexts. A growing number of studies reveal differences in a variety of attachment-relevant behaviors, including support seeking and caregiving (Collins & Feeney, 2000; Feeney & Collins, 2001; Simpson, Rholes, &

Nelligan, 1992), conflict and problem solving (Feeney, Noller, & Callan, 1994; Simpson, Rholes, & Phillips, 1996), self-disclosure (Mikulincer & Nachshon, 1991), and responses to separation from one's partner (Fraley & Shaver, 1998).

Emerging Themes Concerning the Content of Working Models

The existing literature provides strong evidence that adults with different attachment styles differ in the content of their working models. Nevertheless, a number of topics need further investigation. Here we highlight two that we believe are especially important.

Implicit and Explicit Working Models

One important issue in need of further study concerns the distinction between *implicit* and *explicit* aspects of working models. Until recently, most of the work on the content of working models has relied on explicit, self-report measures. Although such measures can be extremely useful for identifying conscious features of working models that individuals can introspect and articulate, many aspects of working models are presumed to lie outside conscious awareness and are therefore not available for reflection and report. Moreover, even when individuals *are* capable of providing accurate reports of their working models, they may sometimes be motivated to mask their true thoughts and feelings in the service of self-regulation and self-presentation. There are also important theoretical reasons to measure both implicit and explicit features of working models. Bowlby (1973) suggested that, for some individuals, conscious and unconscious elements of working models will be inconsistent and that such inconsistencies can have important consequences for attachment experience (see also Crittenden, 1990; Main, 1991). Hence, in future work, it will be important for researchers to develop valid and reliable assessments of implicit attachment-related representations and methods for identifying individuals who hold compatible versus incompatible explicit and implicit models.

At present, few empirical studies directly assess implicit features of working models, and none systematically compare explicit and implicit content. Fortunately, adult attachment researchers are beginning to utilize tools from cognitive social psychology to explore unconscious aspects of working models. For example, the response-latency paradigms used by Baldwin and colleagues (1993) and Mikulincer (1998b) are especially useful. Another tool that holds promise is the Implicit Association Test (IAT; e.g., Greenwald, McGhee, & Schwartz, 1998), which measures the strength of automatic associations between a target concept (e.g., *self*) and an attribute (e.g., *good*). In a recent study, Zayas (2003) used the IAT to ex-

plore attachment style differences in automatic affective associations to three targets—self, mother, and romantic partner. Secure and preoccupied individuals showed stronger positive associations toward their romantic partners and their mothers than did fearful and dismissing individuals. In addition, dismissing individuals had relatively stronger automatic positive associations toward self than toward their romantic partners, whereas all other groups showed the opposite pattern. This finding suggests that dismissing individuals hold a higher automatic regard for the self than for others.

In addition to social-cognitive paradigms such as these, implicit features of working models may also be revealed in physiological responses (see Diamond & Hicks, Chapter 8, this volume), in nonverbal behavior, and in unstructured or projective tasks that can be used to infer unconscious thoughts and feelings. And, of course, interview assessments of adult attachment patterns, such as the Adult Attachment Interview (AAI; George et al., 1984) and the Current Relationship Interview (CRI; Crowell & Owens, 1996) offer valuable tools for identifying both implicit and explicit features of working models. Although the AAI and CRI depend on verbal reports, the critical coding dimensions (e.g., coherence of transcript, coherence of mind) used to distinguish secure and insecure models are not based on the explicit content of respondents' attachment memories (e.g., whether they report good or bad relationships with attachment figures) but on their ability to talk coherently about attachment issues and to effectively access memories of attachment experiences. Another promising new tool is the secure-base script assessment, which measures the degree to which individuals have knowledge of effective secure-base script dynamics (see Waters, 2003). A secure-base script is defined as a general interpersonal script that involves an attachment figure (mother or romantic partner) being responsive to the needs of an attached person in a distressing situation (Waters & Rodrigues-Doolabh, 2001). To measure *scriptedness,* participants are presented with a set of prompt words and asked to construct a story. These narratives are then rated for the degree to which they reveal knowledge of prototypical secure-base dynamics. This measure can be adapted to correspond to different types of attachment relationships or to a specific relationship (Wais, Treboux, & Waters, 2003), and there is accumulating evidence for its construct and predictive validity (Waters & Rodrigues-Doolabh, 2001).

One final note concerning implicit measures: Because implicit measures lie outside conscious control and are not easily distorted by forces that might motivate false responding, it is tempting to assume that they are more valid than explicit measures—that is, more reflective of an individual's *true* thoughts or feelings. We caution against such reasoning. There is ample evidence that people process social information at both an explicit and an implicit level and that implicit and explicit mental processes have unique influences on social judgment and behavior (see Bargh, 1997; Greenwald & Banaji, 1995). For example, Spalding and Hardin (1999) found that *explicit* self-esteem predicted conscious (self-reported) experiences of anxiety during a laboratory interview, whereas *implicit* self-esteem predicted nonverbal expressions of anxiety (rated by observers), a form of behavior that is typically outside of conscious awareness and control. Based on findings such as these, it is reasonable to assume that implicit and explicit attachment models will shape attachment behavior through different but *equally valid* streams of influence. Thus the important question for attachment scholars is not which feature of working models is more valid but how explicit and implicit features jointly contribute to attachment experience.

Accessibility of Working Models

In addition to investigating the content of attachment models, another important topic for future research concerns the accessibility of attachment-related representations. Construct accessibility refers to the degree to which a psychological construct is easily activated or brought to mind. The accessibility of a construct can be increased either by recent activation (a *temporarily accessible* construct) or frequent activation over time (a *chronically accessible* construct). Prior studies on mental constructs such as stereotypes and attitudes have shown that both temporary activation and chronic activation increase the likelihood that a construct will influence social judgment (e.g., Fincham, Garnier, Gano-Phillips, & Osborne, 1995; Higgins, King, & Mavin, 1982) and behavior (e.g., Bargh, Chen, & Burrows, 1996; Fazio & Williams, 1986).

Construct accessibility is important to study for at least two reasons. First, individual differences in attachment style may be more strongly linked to construct accessibility than to content per se. That is, secure and insecure individuals may share similar knowledge or goals but may differ in the degree to which those constructs are easily accessible. For example, although most individuals are assumed to have a need for acceptance, this goal should be most chronically activated for preoccupied adults. In this way, differences in attachment style can be conceptualized in terms of differences in *chronically accessible* mental representations. Second, individuals with the same attachment style may differ in the degree to which their models are currently accessible, and knowledge accessibility may moderate the degree to which attachment models shape social perception and behavior. Specifically, the link between attachment style and important personal and interpersonal outcomes should be stronger when attachment models are more accessible (either chronically or temporarily). Consistent with this idea, Whitaker, Beach, Etherton, Wakefield, and Anderson (1999) found that attachment style differences in expectations for

future satisfaction and problem-solving efficacy in long-term relationships was moderated by the accessibility of internal models. For example, individuals who were high in attachment-related anxiety expected to be less satisfied in their marriages and less effective at solving marital problems, but this effect was considerably stronger for those whose attachment constructs were highly accessible.

THE STRUCTURE OF WORKING MODELS: A COMPLEX REPRESENTATIONAL NETWORK

Until recently, there has been a strong tendency to discuss working models and attachment style in the singular, as if an individual can have only one. However, most attachment scholars now agree that representational models of attachment are complex and multifaceted (Baldwin et al., 1996; Bretherton, Biringen, Ridgeway, Maslin, & Sherman, 1989; Crittenden, 1990; George & Solomon, 1999; Pierce & Lydon, 2001; Trinke & Bartholomew, 1997). Collins and Read (1994) suggest that working models may be best conceptualized as a network of interconnected models that may be loosely organized as a *default hierarchy*. At the top of the hierarchy is the default model that corresponds to the most general representations about self and others, abstracted from a history of experiences with key attachment figures. Further down in the hierarchy are *domain-specific* models that correspond to particular kinds of relationships (parent–child relationships, romantic relationships), and lowest in the hierarchy are *relationship-specific* models that correspond to particular relationships. Although models within the network are conceptually distinct, they are presumed to be linked through a rich set of associations.

Consistent with these ideas, a growing number of studies provide evidence for the multidimensional nature of attachment representations in adulthood. Several studies find that adults have different working models of attachment in different relationship *domains*. For example, representations of attachment with respect to parents are only moderately or weakly correlated with representations of attachment with respect to peers (Bartholomew & Horowitz, 1991) or romantic partners (Shaver, Belsky, & Brennan, 2000; Simpson, Rholes, Orina, & Grich, 2002). Other studies find that *general* (or domain-specific) working models and *relationship-specific* working models are correlated but not redundant constructs (Baldwin et al., 1996; Cozzarelli, Hoekstra, & Bylsma, 2000; Crowell & Owens, 1996; Pierce & Lydon, 2001). Moreover, several studies find that different working models predict unique variance in interpersonal behavior and relationship outcomes. For example, in a longitudinal study of young couples who were about to marry (summarized in Crowell, Fraley, & Shaver, 1999), security of attachment to one's fiancé (measured with the CRI) uniquely predicted feelings of commitment, intimacy, and aggression 18 months later, whereas security of attachment to parents (measured with the AAI) uniquely predicted intimacy, threats to abandon the partner, and partner's physical aggression (see also Bartholomew & Horowitz, 1991; Cozzarelli et al., 2000; Pierce & Lydon, 2001; Simpson et al., 2002). Taken together, these studies are consistent with the idea that individuals possess a complex associative network of working models that contains abstract representations (a general model or style), as well as specific exemplars (relationship-specific models).

Other researchers have explored the multidimensional nature of attachment representations by using sophisticated statistical models to examine between- and within-person variability in attachment security (Cook, 2000; La Guardia, Ryan, Couchman, & Deci, 2000; Pierce & Lydon, 2001). These studies suggest that the degree to which an individual feels secure in a specific relationship is partly due to that person's general propensity to feel secure or insecure (a general attachment style) and partly due to features of the specific relationship. However, these studies consistently find that the majority of the variance in attachment security lies at the relationship (within-person) level. For example, La Guardia and colleagues (2000) asked young adults to complete measures of attachment security with respect to a variety of specific relationships (e.g., mother, father, romantic partner, best friend). Across three samples, hierarchical linear modeling analyses revealed that 21–44% of the variability in felt security occurred at the between-person level (reflecting individual differences in general attachment models) and that the remaining variability occurred at the within-person level (reflecting relationship-specific models). As we discuss in more detail later, studies such as these highlight the importance of understanding attachment dynamics within specific relationships.

The studies cited previously provide evidence that adults possess multiple attachment representations, but they do not speak directly to the structural relations underlying these various representational models. More direct evidence for the hierarchical nature of attachment representations was provided in a recent study by Overall, Fletcher, and Friesen (2003). In this study, respondents completed measures of attachment style in three domains—close family relationships, close friendships, and romantic relationships. Within each domain, they also completed attachment measures for their three most important relationships. Confirmatory factor analyses revealed that the structural model that best fit the data was one consistent with the default hierarchy originally proposed by Collins and Read (1994), indicating that relationship-specific models are nested under domain-specific representations (family, friends, romantic partners), which are nested under an overarching global working model.

Emerging Themes Concerning the Structure of Working Models

As the previous discussion makes clear, there is now a good deal of evidence that adults possess a rich network of attachment representations that vary in their level of specificity. However, we still know relatively little about the relationship between general and relationship-specific models and the ways in which these models work together to shape social perception and behavior in close relationships. Given the growing interest in relationship-specific working models, we highlight two issues in need of consideration.

How Do Relationship-Specific Models Develop, and How Are They Related to More General Models?

In order to be functional, relationship-specific models should be rooted in interpersonal transactions and features of one's relationship as experienced by the individual. Just as parent–child relationships differ in their attachment quality, adult intimate relationships will differ in the degree to which they provide partners with a safe haven of comfort and security and a secure base from which to explore interests outside of the relationship. Felt security within a specific relationship should therefore depend in large part on whether one's partner is perceived to be both willing and able to be responsive to one's needs in attachment-relevant contexts (Collins & Feeney, 2000).

It is important to clarify what we mean by *felt security* in adulthood. Collins and Feeney (2004) distinguish between two different but compatible uses of the term. First, *situation-specific* felt security reflects the degree to which an individual feels free from physical and emotional threat. When felt security is threatened (by either a threat to the self or a threat to the attachment relationship), the attachment system will be activated, and individuals will take steps to restore feelings of security (through real or imagined contact with attachment figures or through other means of coping). Thus acute threats to felt security trigger the attachment system and motivate attachment behavior (Mikulincer, Gillath, & Shaver, 2002). This form of felt security is distinct from *relationship-specific* felt security, which refers to an individual's overall sense of confidence in a partner's love and commitment and expectations concerning the partner's responsiveness to need. Individuals will feel more secure in their relationships to the extent that they feel valued and cared for by partners who are emotionally available and responsive to their needs. Consistent with this perspective, Murray, Holmes, Griffin, Bellavia, and Rose (2001) argue that felt security requires two conjunctive beliefs: (1) that one's partner loves oneself and is thus *willing* to be available and caring and (2) that the partner is a good, responsive person who is *capable* of fulfilling one's needs.

Thus a secure relationship-specific working model simultaneously evaluates the self as loved and the partner as trustworthy and reliable.

If relationship-specific felt security requires individuals to believe that their partners are responsive to their needs and uniquely committed to them, such inferences should be based on past experience in diagnostic situations that enable individuals to draw inferences about their partner's motives and attitudes toward them (Holmes & Rempel, 1989; Weiselquist, Rusbult, Foster, & Agnew, 1999). Collins and Feeney (2004) suggest that intimate interactions, in which partners reveal private aspects of themselves, provide a critical testing ground for drawing such inferences. After all, in order for individuals to feel secure in their partners' love, they must perceive that their partners know, understand, and value them for their true selves. A sense of felt security also requires evidence that one's partner is willing and able to be responsive to one's needs. Therefore, care-seeking and caregiving interactions, which are a special form of intimate interaction, should be especially informative. Through such interactions, individuals learn whether they can count on their partners to understand their needs, accept responsibility for their well-being, follow communal norms, and make themselves emotionally (and physically) available to them. Furthermore, it is precisely because care-seeking interactions involve vulnerability (e.g., expressions of fear, weakness, sadness, hurt) that they offer such a critical testing ground for felt security; they provide evidence of a partner's willingness to care for us when we are at our weakest (e.g., when we are emotionally vulnerable, socially isolated, physically ill, down on our luck) and perhaps least able to reciprocate. Under these circumstances, a partner's continued acceptance and nurturance provides diagnostic evidence of his or her deep investment in our well-being (Tooby & Cosmides, 1996).

Although these hypotheses have not been directly addressed in the literature, several studies demonstrate that relationship-specific security is rooted in evidence of partner responsiveness. For example, La Guardia and colleagues (2000) examined the association between relationship-specific security and need satisfaction across a variety of specific relationships (e.g., mother, father, romantic partner, best friend). Results revealed that feelings of security varied substantially across different relationships and, more important, that individuals felt more secure in relationships that did a better job of meeting their needs for relatedness (feeling accepted and cared for by the partner), competence (feeling that the partner supports their sense of confidence and self-efficacy), and autonomy (feeling that their partner supports their desire to engage in independent activities).

Other studies have shown that relationship-specific security is associated with partner sensitivity and responsiveness in laboratory interactions. For example, Kobak and Hazan (1991) used a Q-sort procedure to

measure relationship-specific working models and then observed couples during a conflict discussion and a confiding/support discussion. Husbands who had more secure working models of their marriages (who felt their partners were psychologically available to them) had wives who expressed more support validation and less rejection in the problem-solving task. In addition, wives who had more secure working models (who felt they could rely on their husbands and perceived their husbands to be psychologically available) had husbands who expressed more acceptance during the confiding task. Along similar lines, Collins and Feeney (2000) found that couples who perceived their relationships as more secure engaged in more effective support and caregiving interactions when one member of the couple was discussing a personal stressor. To the extent that behavior in these laboratory interactions is representative of behavior outside the lab, these studies are consistent with the idea that relationship-specific security is rooted in diagnostic situations that enable individuals to draw inferences about their partners' acceptance of them and concern for their well-being (see also Wais, Treboux, & Waters, 2003).

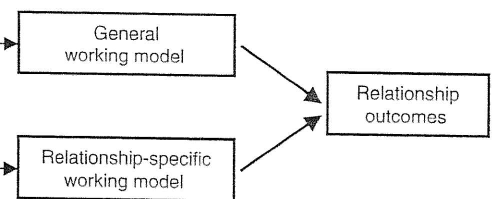
Although relationship-specific models show evidence of being tied to the raw data of relationship experience, they are nevertheless subjective construals that should be influenced by more general attachment models. Indeed, attachment theory explicitly assumes that new experiences will, at least to some extent, be assimilated into existing expectations. Consistent with this assumption, in studies that have measured both general and relationship-specific models, the two constructs were found to be moderately correlated (Baldwin et al., 1996; Cozzarelli et al., 2000; Pierce & Lydon, 2001, Study 1). However, because general and relationship-specific models were assessed concurrently in these studies, it is not clear whether general models shaped specific ones or whether specific models contributed to the general ones. Of course, it is likely that both processes are at work, and several longitudinal studies support this assumption (Murray, Holmes, & Griffin, 1996; Pierce & Lydon, 2001, Study 2; Simpson, Rholes, Campbell, & Wilson, 2003; Wais et al., 2003).

Before concluding our discussion, we note one final measurement issue. At present, there are no agreed-on measures of relationship-specific working models. Researchers typically measure relationship-specific models by simply modifying scales that were originally developed to assess general attachment styles and by asking respondents to complete these scales with a specific partner in mind (e.g. LaGuardia et al., 2000; Pierce & Lydon, 2001). Although this procedure has been fruitful, researchers may want to consider additional means of assessing relationship-specific attachment representations that focus more precisely on the interpersonal expectancies, goals, and action tendencies that are relevant to attachment dynamics in couples. For example, it would be useful to assess the degree to which individuals feel that they can rely on their partners as a safe haven of comfort and support and a secure base for exploration. In addition, it remains to be seen whether the two dimensions of attachment (anxiety and avoidance) that have been useful for conceptualizing individual differences in general attachment style are equally relevant at the relationship-specific level or whether the particular patterns of insecurity will be tied to particular patterns of partner responsiveness in ways that parallel the parent–child patterns. For example, when a partner's affections and responsiveness are inconsistent but not necessarily neglecting or rejecting, we might expect that an individual would develop a relationship-specific pattern that is relatively preoccupied (high anxiety and low avoidance). In this way, relationship-specific attachment styles may reflect functional adaptations to expectations about a partner's responsiveness in attachment-relevant contexts, in much the same way that infant attachment styles are presumed to be adaptations to various caregiving environments.

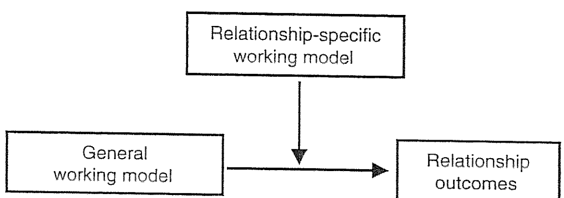
How Do General and Relationship-Specific Models Work Together to Shape Interpersonal Experience?

If individuals possess both general and relationship-specific working models, how do they work together to shape thought and behavior in specific relationships? At present, researchers have not yet articulated a clear model or set of models for explaining the unique and shared roles of different attachment representations. If we assume that general and relationship-specific models are correlated but not redundant constructs (as the existing data suggest), there are a number of alternative causal models that might explain their joint influence on attachment behavior. Figure 7.1 presents three simplified models. Model 1, the independence model, proposes that general and relationship-specific models influence attachment outcomes through independent channels. According to this model, general and relationship-specific models would have additive effects on behavior, and these effects need not be convergent. For example, the degree to which an individual seeks support may be shaped independently by the degree to which the individual is generally avoidant and the degree to which he or she believes that this particular partner will be emotionally available and responsive. Thus Model 1 predicts that aspects of one's general working model will continue to be activated and used to guide behavior even in the presence of a more specific relational model. It is reasonable to assume, for example, that well-learned behavioral routines that are linked to general models and that lie outside conscious awareness may be automatically activated and therefore difficult to modify even when they may not be optimally suited to the current relationship. Consistent with Model 1, Cozzarelli and colleagues (2000) and Pierce and Lydon (2001)

1. Independence model



2. Moderated model



3. Mediated model

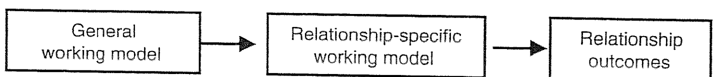


FIGURE 7.1. Possible models linking general and relationship-specific working models to relationship outcomes.

found that global and specific attachment representations independently predicted outcomes such as life satisfaction and the quality of social interactions.

A second possibility is that general and relationship-specific models have interactive effects. Model 2, the moderated model, proposes that the effects of general working models are moderated by relationship-specific models. In other words, this model assumes that the impact of general attachment representations will depend on current relationship circumstances. For example, individuals who are generally insecure may function relatively well if they are involved with a partner who is highly responsive to their needs and is perceived to be deeply committed to them. Thus insecure chronic models may represent a vulnerability factor that may or may not be expressed, depending on current circumstances (Collins et al.,

2003). Consistent with Model 2, Pierce and Lydon (2001, Study 2) found that global and relationship-specific models interacted to predict daily social experience. Specifically, chronically anxious individuals functioned well if they were interacting with a partner whom they perceived as responsive; but, when their partner was less responsive, their social interactions were lower in quality and less intimate than those of secure individuals. A similar pattern was obtained in two longitudinal studies conducted by Simpson, Rholes, and colleagues (Rholes, Simpson, Campbell, & Grich, 2001; Simpson, Rholes, Campbell, Tran, & Wilson, 2003), who investigated attachment processes during the transition to parenthood. In these studies, women who were high in chronic anxiety and who perceived that their husbands were unsupportive and angry during their pregnancies experienced increases in depressive symptoms (Simpson et al., 2003) and decreases in marital satisfaction (Rholes et al., 2001) 6 months postpartum. However, when spousal support was perceived to be high, anxious women were functioning as well as nonanxious women. Model 2 is compatible with contemporary theories of personality (Andersen & Chen, 2002; Mischel & Shoda, 1995) and relationship interdependence (e.g., Holmes, 2002) that emphasize the importance of studying stable person × situation interactions, in which long-term romantic partners (and one's expectations concerning those partners) represent a stable feature of one's interpersonal environment.

Models 1 and 2 assume that general and relationship-specific models are either uncorrelated or modestly correlated. However, if we assume that they are moderately or strongly related and that general models shape the development of relationship-specific models, then their joint effects may be best represented as a mediated model. Model 3 proposes a mediated model in which the effects of general attachment models on behavior are fully mediated by relationship-specific models. For example, this model might predict that individuals who are chronically high in attachment-related anxiety will be more likely to doubt the love of their current partners, which will in turn lead them to engage in high levels of reassurance-seeking behavior. Thus this model assumes that general models exert their influence on current functioning by shaping the development of relationship-specific models. At present, we are not aware of any studies that directly or indirectly test a mediated model.

These models are, of course, a simplification of what are surely more complex processes, and they are not intended to provide an exhaustive list of the possible causal models that might underlie the links between general and relationship-specific working models. Our goal was simply to encourage attachment scholars to be more explicit about their assumptions when investigating the joint effects of general and relationship-specific models and to stimulate thoughtful research on the topic.

THE FUNCTIONS OF WORKING MODELS IN ADULTHOOD

Working models are a central component of the attachment behavioral system that are expected to play a critical role in shaping how individuals operate in their relationships and how they construe their social world. However, the specific mechanisms through which this occurs are not fully understood. One way to understand these mechanisms is to consider working models of attachment as part of a broader system of cognitive–motivational processes that enable individuals to make sense of their experiences and to function in ways that meet their personal needs (Collins & Read, 1994). We assume that working models of attachment are highly accessible cognitive–affective constructs that will be automatically activated whenever attachment-relevant events occur. Once activated, they should play an important role in shaping cognitive, affective, and behavioral response patterns. Moreover, we need not assume that people are consciously directing these processes or even that they are aware of them. It is likely that that much of this system will operate automatically; that is, spontaneously, with little effort, and outside of awareness (Bargh, 1997). In the following sections, we specify these processes in greater detail and review relevant empirical work.

Cognitive Response Patterns

Working models of attachment contain a rich network of memories, beliefs, and goals that should have a critical role in shaping how individuals think about themselves and their relationships. This assumption is consistent with a large body of research in social psychology on the role of prior knowledge in information processing and social judgment. This research demonstrates that social perception is heavily influenced by top-down, theory-driven processes in which existing goals, schemas, and expectations shape the way individuals view new information. Here we consider four cognitive processes that should be strongly influenced by working models and should have important implications for personal and interpersonal functioning.

Selective Attention

Empirical, as well as anecdotal, evidence indicates that two people experiencing the same event rarely agree about what took place. Indeed, Bargh (1984) concludes that social perception involves "an interaction between the environmental stimuli that are currently present and the individual's readiness to perceive some over others" (p. 15). But what determines a person's readiness to attend to particular features of the environment and to disregard others? Evidence suggests that individuals are apt to attend to information that is relevant to their currently active goals and consistent with their existing attitudes and expectations (Bargh, 1984; Roskos-Ewoldsen & Fazio, 1992; Srull & Wyer, 1986).

If goals and expectations predispose individuals to attend to particular features of their environment, then working models of attachment should play an important role in directing mental resources in attachment-relevant situations. And, as a result, information available for further processing may tend to be biased in a goal-relevant and expectation-consistent manner. For example, anxious–ambivalent (preoccupied) adults are expected to have "seeking approval" and "avoiding rejection" as chronically active goals. As a result, they are likely to have a threat-oriented focus that keeps them vigilant for signs of disapproval by others. In addition, because they expect the worst, they may easily notice evidence that confirms their fears. Avoidant adults should be characterized by a very different pattern. Their motivation to maintain autonomy should make them highly sensitive to signs of intrusion or control by others, and their desire to minimize attachment concerns will tend to direct their attention away from features of the environment that make attachment needs salient (Fraley, Davis, & Shaver, 1998).

Although these specific hypotheses have not been directly tested, several studies indicate that individuals with different attachment styles differ in their ability to regulate their attention to threatening stimuli. Fraley and Shaver (1997) used a thought-suppression paradigm to examine whether individuals with different attachment styles differed in their ability to suppress unwanted attachment-related thoughts. After being asked to suppress thoughts about losing their partners, dismissing individuals were successful at reducing the subsequent intrusion of unwanted thoughts, and they also evidenced lower physiological arousal. In contrast, preoccupied adults experienced a rebound in thoughts of losing their partners and became more physiologically aroused. These data suggest that dismissing adults have well-developed defense systems that enable them to regulate negative affect by deactivating their attachment systems and reducing the accessibility of attachment-related thoughts. In contrast, preoccupied adults have difficulty turning their attention away from such thoughts, even when explicitly attempting to do so, which may result in hyperactivation of the attachment system and increased negative affect. Consistent with these findings, Baldwin and colleagues have shown that anxious individuals have difficulty inhibiting the activation of rejection cues (Baldwin & Kay, 2003; Baldwin & Meunier, 1999). In one study, Baldwin and Kay (2003) exposed participants to tones paired with symbols of interpersonal rejection (frowning faces) and acceptance (smiling faces). In a subsequent lexical decision task, secure and, especially, dismissing individuals were slower to respond to rejection target words in the presence of either the rejection or the acceptance tones (relative to a

neutral tone). In contrast, fearful and preoccupied individuals (those high in anxiety) were quick to respond to rejection words, even when primed with a tone that was previously linked to acceptance. To the extent that slow responding reflects the inhibition of rejection thoughts, these findings indicate that secure and dismissing individuals are able to direct their attention away from threatening stimuli, whereas anxious individuals are hypervigilent to such cues and have a low threshold for detecting potential threats to acceptance.

Other studies show that attachment-related goals can influence how people allocate their attention to social and nonsocial tasks (Mikulincer, 1997; Miller & Noroit, 1999). For example, Mikulincer (1997, Study 2), asked participants to select how much information they wanted to hear about a new product. They were told that time spent on this task would affect how much time they had left for a second task (either a social interaction or a sensory test). Avoidant adults selected more information during the first task when the second task was social rather than nonsocial; anxious–ambivalent adults showed the opposite pattern. These data suggest that insecure participants allocated their attention in ways that served their personal goals. Anxious–ambivalent adults—who value social connection and social approval—limited their attention to a competing task when it interfered with a social task. In contrast, avoidant adults—who value social distance—increased their attention to a nonsocial task, thereby decreasing their available attention for a social task. Finally, independent of individual differences, adults normatively turn their attention to attachment figures in response to threatening cues. In a series of studies, Mikulincer, Gillath, and Shaver (2002) found that when individuals were primed with threatening words, mental representations of attachment figures became more accessible in memory (and this was true regardless of the individual's chronic attachment style).

Cognitive Openness

One of the hallmarks of effective personality functioning is a flexible cognitive system that is open to new information. Individuals with different working models of attachment may differ in their willingness and ability to update their mental representations of self and others and to incorporate new information in ways that enable them to cope with and adapt to changing circumstances (Kobak & Hazan, 1991). To the extent that cognitive openness reflects, at least to some extent, a willingness to take risks and explore novel stimuli, then secure individuals are likely to have a more open and flexible cognitive style than insecure individuals, who are likely to be more risk averse. Consistent with this idea, several studies indicate that secure individuals have a less rigid cognitive style and are more likely to integrate new information into their existing expectations about

others (Green-Hennessy & Reis, 1998; Mikulincer, 1997; Mikulincer & Arad, 1999). Secure individuals are also more open and more positively responsive to information about themselves (Brennan & Bosson, 1998). For example, relative to secure individuals, fearful and dismissing adults are less likely to desire honest feedback about themselves from their partners, and fearful adults are more likely to prefer positive feedback even if it is false. In addition, relative to secure individuals, preoccupied and fearful individuals feel more distressed in response to partner feedback, whereas dismissing individuals feel more indifferent.

Memory

One of the/most robust findings in the social-cognitive literature is that existing knowledge structures shape what gets stored in memory and what is later recalled or reconstructed (Srull & Wyer, 1989). In general, aspects of experience that can be interpreted in terms of easily accessible concepts are more likely to be encoded into memory. As a result, well-established schemas bias memory toward schema-relevant, and often schema-consistent, information. In addition, once information is stored in memory, further processing gives consistent material an advantage over inconsistent material. Existing representations may also lead individuals to recall or reconstruct features of experiences that never took place. One reason for this effect is that, as episodic memory for an event fades over time, people may rely more on their generic schemas and less on the particular encounter (Graesser & Nakamura, 1982).

Evidence for these processes within the attachment domain is beginning to emerge. Consistent with a schema-driven memory model, both chronically and temporarily activated attachment models appear to shape memory for new information (Rowe & Carnelley, 2003) and to lead to false-positive memory intrusions (Mikulincer & Horesh, 1999). There is also evidence that schema-driven memory effects are likely to emerge over time. Feeney and Cassidy (2003) assessed high school students' perceptions of laboratory interactions with their parents immediately after each interaction and again 6 weeks later. Over time, adolescents *reconstructed* their memories of specific interactions in ways that confirmed their working models. Those who held positive models of their parents recalled having had more positive and less negative interactions than they had reported immediately following the interaction. These findings illustrate how memory for a specific interpersonal exchange can be revised in ways that support relationship-specific expectations (see also Collins & Feeney, in press). In another study, Pietromonaco and Feldman Barrett (1997) asked participants to provide global reports of their typical social and emotional experiences (which reflect their long-term semantic memory) and then to complete interaction records for 1 week in which they re-

corded their experiences immediately following each social interaction (which reflects their shorter term episodic memory). Results indicated that semantic-based reports and episodic-based reports diverged in important ways. Although preoccupied individuals reported experiencing more affect intensity than other individuals on their global reports, they did not report more extreme emotional responses immediately following their daily interactions. Likewise, although dismissing adults reported experiencing relatively low levels of affect intensity on their global reports, they reported negative emotions that were at least as intense as those of other insecure people immediately following their daily interactions. These findings provide indirect evidence that memory for interpersonal experiences may become more consistent with attachment models over time and that insecure individuals may fail to accommodate new information into their generalized representations despite evidence that disconfirms these general impressions. This study also points to the importance of investigating the processes through which episodic memories come to be generalized into more abstract, semantic memories and the impact of working models on different memory systems (Klein, Babey, & Sherman, 1997).

In addition to schema-driven processes, several studies provide evidence for motivated memory processes (Fraley, Garner, & Shaver, 2000; Miller, 2001; Miller & Noroit, 1999). For example, Fraley and colleagues (2000) investigated the role of differential attention as an explanation for differences in memory for attachment experiences. Recall that avoidant individuals have greater difficulty recalling emotional experiences from their pasts (Mikulincer & Orbach, 1995; Shaver et al., 2000). Fraley and colleagues reasoned that this pattern may occur either because avoidant individuals (1) limit their attention to emotional information and hence their encoding of it (labeled a "preemptive defense") or (2) limit their elaboration, rehearsal, and processing of emotional information they have encoded (labeled a "postemptive defense"). To test these alternatives participants were asked to listen to an interview in which a woman discussed emotionally sensitive attachment experiences and then measured recall immediately following the task and at various delayed intervals. Avoidant individuals had worse recall immediately following the task but did not differ in how much they forgot over time, suggesting that they differed in their initial encoding of the story events but not in the degree to which they subsequently processed the information. Thus avoidant individuals appear to be less attentive to emotional events while they are occurring (a preemptive defense), thereby encoding less of the information that is available to them. Consistent with these findings, Miller (2001) found that avoidant individuals (especially those who matched the dismissing profile) had poor overall recall of observed conversations, especially when those conversations involved an opposite-sex peer.

Social Construal

A large body of research in social psychology indicates that people's existing concepts and expectations play an active role in shaping the way they perceive others and interpret their social experiences. Social information is filtered through existing schemas and stereotypes, which then guide social inference processes. Like other knowledge structures, working models of attachment should play an important role in guiding how people construe their interpersonal experiences and make sense of their relationships.

One process that is especially important for relationship functioning and that is expected to be strongly influenced by working models is the construction of explanations and attributions. Consistent with this idea, several studies indicate that adults with different attachment styles are predisposed to explain relationship events in ways that are consistent with their expectations concerning themselves and others (Collins, 1996; Collins et al., 2003; Gallo & Smith, 2001). Overall, relative to their insecure counterparts, secure adults tend to make more benign attributions for their partners' transgressions. For example, Collins (1996) asked participants to provide explanations for a series of potentially negative partner behaviors. Secure participants explained their partners' behavior in ways that reflected confidence in their partners' love and responsiveness, whereas anxious–ambivalent participants explained events in ways that revealed low self-worth and self-reliance, a lack of confidence in their partners' love and trustworthiness, and a belief that their partners were purposely rejecting closeness. Biases in attributions are not limited to partner transgressions. Collins and colleagues (2003, Study 2) found that adults with different attachment styles also differed in their explanations for their partners' supportive and caring behavior. Overall, insecure adults tended to make attributions that undermined their partners' good intentions. This was especially true for avoidant individuals, who tended to attribute their partners' caring behavior to selfish rather than altruistic motivation.

By presenting participants with a controlled set of social stimuli, these studies provide strong evidence that social construal processes are colored by existing expectations about oneself and others. However, because participants were asked to explain hypothetical events on the basis of very little information, the results from these studies may not generalize to more natural settings. To address this limitation, we conducted several studies to examine attachment style differences in perceptions of actual social interactions between romantic partners. In one study (Collins & Feeney, 2000), we videotaped couples while one member of the couple disclosed a personal problem or worry to his or her partner. Although attachment models did not predict the discloser's perceptions, they did pre-

dict their partners' perceptions. Specifically, partners who were higher in attachment-related anxiety and avoidance perceived their interactions more negatively, even after controlling for the discloser's perceptions *and* ratings made by outside observers. Next, to provide a more stringent test of biased construal, we *experimentally manipulated* the supportiveness of the partner's behavior to determine whether secure and insecure perceivers would differ in their construal of the *same* social support message (Collins & Feeney, in press, Study 1). For this study, we created a stressful experience for one member of the couple by asking him or her to give a videotaped speech. After couple members interacted spontaneously for 5 minutes, we then manipulated social support by having the partner copy either two *supportive* or two relatively *unsupportive* notes. The dependent variable was the speech givers' ratings of these notes and ratings of their partners' behavior during the spontaneous interaction. Results provided clear evidence that working models of attachment colored perceptions, but only in response to the unsupportive notes. When participants received the relatively unsupportive notes, insecure adults perceived them as less supportive and were more likely to infer that their partners purposely intended to hurt them. What was even more striking is that they also rated their earlier interactions as less supportive, even though these interactions occurred *prior* to the support manipulation and were unrelated to the note condition (which was randomly assigned). Thus insecure perceivers demonstrated a *retrospective contamination;* they either misremembered or reconstrued their partner's prior behavior after receiving an unsupportive note in the intervening period. We found further evidence for biased construal in a conceptual replication in which we used a similar paradigm but allowed partners to write genuine notes that were then rated by three independent observers (Collins & Feeney, in press, Study 2). Relative to secure participants, insecure support-recipients rated their partners' notes as less supportive, and they inferred more negative motivation, even after controlling for the objective content of the notes as judged by independent coders. Moreover, this effect became more pronounced as the notes became less objectively supportive and more ambiguous. Taken together, these studies provide compelling evidence that insecure working models predispose individuals to construe their social experiences in pessimistic ways, but primarily in the context of ambiguous or potentially negative interactions, perhaps because these interactions have greater latitude for construal or because they are more likely to activate the latent doubts and fears of insecure individuals. These data also point to the importance of studying person × situation interactions.

In addition to schema-driven processes such as those illustrated earlier, it is also important to explore *motivated* construal processes. Evidence for attachment style differences in strategic social construal is beginning to accumulate. For example, after receiving failure feedback, avoidant adults tend to inflate their self-views, whereas anxious–ambivalent adults tend to emphasize their negative self-aspects (Mikulincer, 1998a). Along similar lines, under conditions of threat, anxious–ambivalent individuals increase their perceptions of self–other similarity, whereas avoidant individuals decrease self–other similarity (Mikulincer, Orbach, & Iavnieli, 1998). Mikulincer suggests that these strategic patterns reflect chronic emotion-regulation strategies in which avoidant adults manage threat by avoiding recognition of personal weaknesses and by distancing self from others, whereas anxious–ambivalent adults manage threat by becoming overly attentive to inner sources of distress and by seeking closeness and connection to others. Further evidence for motivated construal was provided by Simpson, Ickes, and Grich (1999), who examined attachment style differences in empathic accuracy. Empathy accuracy refers to the degree to which individuals correctly infer their partner's thoughts and feelings. Prior research indicates that empathic accuracy is neither all good nor all bad; it can have positive consequences when it leads to greater understanding and increased intimacy, but it can also have negative consequences when it poses a threat to oneself or to one's relationship. Simpson and colleagues hypothesized that insecure individuals may be less able than secure individuals to strategically decrease their accuracy in situations that would pose a threat to their relationships. To test this idea, couples were asked to rate the attractiveness and sexual appeal of opposite-sex targets in the presence of their partners. Results indicated that individuals who were high in attachment-related anxiety had greater empathic accuracy. That is, they were more accurate in perceiving their partners' thoughts and feelings during the rating process. However, among anxious women, greater accuracy was associated with declines in feelings of closeness to the partner, and among anxious men, greater accuracy was associated with increased likelihood of breakup 4 months later. Thus, although anxious individuals were more successful at perceiving their partners' true thoughts and feelings, their greater insight had negative consequences for them. In contrast, low-anxious individuals were able to protect themselves by being less accurate in circumstances that might pose a threat to their relationships.

Finally, there is some evidence for attachment style differences in motivated person perception. For example, avoidant individuals are more conservative (more risk averse) when drawing inferences about others' personalities, whereas anxious individuals have more labile perceptions and are quick to draw both positive and negative inferences (Zhang & Hazan, 2002). Specifically, when asked to form impressions of a potential romantic partner or classmate, avoidant individuals required more evidence to confirm that someone possessed positive traits or did not possess negative ones. In other words, avoidant individuals needed more evidence to conclude that someone was good. In contrast, anxious indi-

viduals required less information to confirm positive or negative traits but also less information to overturn these impressions. In another study, Niedenthal, Brauer, Robin, and Innes-Ker (2002) found that secure and insecure adults differed in their perceptions of facial expressions in ways that may reflect attachment-related interpersonal goals. For example, under conditions of stress, insecure individuals (especially fearful individuals) tended to see the offset of negative facial expressions later than did secure people. This finding suggests that, under distress, insecure individuals may be vigilant to emotional cues that signal potential acceptance or rejection.

Affective Response Patterns

The second general function of working models is to guide affective response patterns. Emotional response patterns are of central interest to attachment theory, and individual differences in attachment style are associated with variations in emotional regulation and emotional expression (e.g., Kobak & Sceery, 1988; Shaver, Collins, & Clark, 1996). Working models of attachment may shape emotional response patterns through two general pathways: a direct path, labeled primary appraisal, and an indirect path, labeled secondary appraisal (Collins & Read, 1994).

Primary Appraisal

The primary appraisal process occurs when attachment-related events occur and working models initiate an immediate, largely automatic emotional response. Two primary mechanisms are proposed to operate here. First, attachment representations are heavily affect laden, and this affect should be automatically evoked whenever working models are activated in memory, a process referred to as "schema-triggered affect" (Andersen & Baum, 1994; Fiske & Pavelchak, 1986). Consistent with this idea, Mikulincer, Hirschberger, Nachmias, and Gillath (2001) have shown that activation of secure-base expectations (outside of awareness) automatically activates positive affect (measured implicitly). Along similar lines, Rowe and Carnelley (2003) found that individuals who were temporarily primed with a secure relationship-specific working model reported more positive affect and less negative affect than those who were primed with anxious or avoidant working models.

The second mechanism linking working models and primary emotional appraisal involves goals. In general, individuals respond with positive affect when a goal is achieved or facilitated and with negative affect when a goal is blocked (Berscheid, 1983). Because adults with different attachment styles have different personal and interpersonal goals, they are apt to have different emotional responses to the same event (Collins &

Read, 1994). Consistent with this idea, Collins and colleagues (2003, Study 1) asked young adults to imagine a series of potentially negative partner behaviors (e.g., "your partner left you standing alone at a party"). Results indicated that secure and insecure individuals differed in their emotional responses to these events and that these differences were mediated by the importance of the needs being violated in each event. Specifically, highly anxious individuals rated the attachment needs as more important and therefore experienced more emotional distress when their partners failed to meet these needs.

The outcome of the primary appraisal process is especially important because of its impact on further information processing. Affect has been shown to influence all aspects of information processing, including attention, memory, and social inference processes (Gilligan & Bower, 1984). Mood makes mood-congruent material more easily noticed and more easily encoded in memory (Forgas, Bower, & Krantz, 1984). Mood may also serve as information in subsequent social inference processes (Clore & Tamir, 2002), such that negative arousal may lead individuals to infer that a threat must be present. Finally, high levels of arousal may have a general effect on information processing by restricting cognitive resources (Kihlstrom, 1981; Kim & Baron, 1988; Sarason, 1975). As a result, intense affective reactions may lead individuals to rely on overlearned schemas at the expense of conducting more controlled and effortful processing of information. Although these processes have not been directly investigated in the domain of attachment, two studies suggest that attachment-related anxiety may interfere with information processing. Miller and Noirot (1999) found that, when participants were asked to write about a rejecting (versus a supportive) friendship experience, fearful avoidance was associated with impaired performance on a subsequent cognitive task. In a second study, Miller (1996) found that a rejection prime interfered with anxious adults' ability to effectively solve social problems. These studies provide preliminary evidence that the activation of chronic worries about rejection (for fearful and anxious–ambivalent adults) can interfere with subsequent information processing in both social and nonsocial domains.

Secondary Appraisal

A person's initial emotional response to an event can be either maintained, amplified, or altered depending on how the experience is subsequently interpreted (Lazarus & Folkman, 1984; Weiner, 1986). Collins and Read (1994) suggest that people respond to attachment experiences not just on the basis of whether or not they like the outcome but also of what the outcome means, at a symbolic level, for themselves and their relationship (Kelley, 1984). And, because adults with different attachment styles will tend to differ in the way they interpret events, they should also differ

in the way they feel in response to the same events. Consistent with this idea, Collins and her colleagues (Collins, 1996; Collins et al., 2003, Study 1) have shown that attachment-style differences in emotional responses to relationship events are mediated in part by differences in attributions. For example, anxious participants are more likely to attribute their partners' transgressions to selfish motivation and a lack of responsiveness and are therefore more likely to experience anger and emotional distress. Findings such as these suggest that anxious individuals will tend to experience greater distress in their relationships, at least in part, because they are apt to interpret their partners' behavior in more threatening ways.

Behavioral Response Patterns

Just as working models can have direct and indirect effects on affective responses, they should also have direct and indirect effects on behavior. First, working models contain a rich source of plans and action tendencies that should be automatically evoked whenever working models are activated in memory. In these circumstances, working models may guide behavior by providing ready-made plans and behavioral strategies for the attainment of attachment-related goals. These action tendencies are likely to be stored in terms of "if–then" rules (Baldwin et al., 1993; Mischel & Shoda, 1995) that specify particular behavioral strategies to be used in response to particular appraisals or environmental contingencies (e.g., *if* stressed, *then* seek support; *if* hurt, *then* seek emotional distance). As a result, once a social situation is appraised, a person's behavioral response may be overdetermined. This response may be especially likely to occur under conditions of high stress and arousal, when processing capacity is limited. Evidence suggests that under such conditions, individuals may rely on readily accessible, overlearned strategies and behavioral scripts (Clark & Isen, 1982; Ellis, Thomas, & Rodriguez, 1984; Kihlstrom, 1981).

The idea that behavioral strategies can be automatically evoked by particular appraisals raises the possibility that the mere activation of an attachment model is sufficient for eliciting a behavioral response, without having to posit an intervening cognitive and emotional mediator. To be sure, some situations are so familiar, and some behaviors so overlearned, that behavioral responses can be elicited by particular features of the environment alone (Bargh, Chen, & Burrows, 1996; Bowlby, 1980). This may be especially likely to occur in long-term relationships for which people have highly elaborate and strongly held relational schemas. Although this idea has not been tested in the attachment domain, research in the broader social-cognition literature provides evidence that the activation of relational schemas can automatically elicit interpersonal goals and goal-directed behavioral responses. In a series of studies, Shah (2003) explored how activation of relationship-specific schemas (significant-other representations) may automatically direct individuals toward some goals and away from others. After being subliminally primed with the name of a significant other (e.g., mother, father, best friend), participants were more committed to the goals linked to that significant other, persisted at a goal-relevant task longer, performed better at the task, and were better able to inhibit competing goals. Along similar lines, Fitzsimons and Bargh (2003) showed that activation of significant-other representations automatically activated goal-directed behavior. For example, after imagining a close friend—which was normatively shown to be linked to prosocial goals—participants were more willing to help a stranger than when they imagined a coworker. These studies offer compelling evidence that the activation of relationship-specific schemas can automatically evoke goals and action tendencies and that these processes occur outside of awareness. It seems reasonable to assume that working models of attachment will operate in a similar fashion such that, under some conditions, goal-directed behavior may be automatically evoked when working models are activated in memory. This remains an important topic for future research.

In addition to these direct effects, working models should also have indirect effects on behavior by shaping cognitive and emotional responses. Consistent with this idea, Collins and her colleagues (Collins, 1996; Collins et al., 2003) have shown that secure and insecure adults behave differently in their relationships *because* they tend to think and feel differently in response to relationship events. In three studies, the relationship between attachment style and behavioral responses to partner transgressions was mediated by attributions and emotions. For example, highly anxious individuals endorsed more relationship-threatening attributions for their partners' behavior and responded to these transgressions with greater emotional distress; these attributions and emotional responses then strongly predicted their tendency to engage in more hostile and punishing behavior.

Emerging Themes Concerning the Function of Working Models

The existing literature provides initial evidence that working models of attachment play an important role in guiding cognitive, affective, and behavioral response patterns in attachment-relevant contexts. Nevertheless, as the preceding review indicates, there are a number of untested assumptions concerning the fundamental role of working models in shaping the manner in which the attachment system is expressed in adulthood, and there are many gaps in our knowledge of specific mechanisms. We need not reiterate these missing links. Instead, we conclude by highlighting several trends in the literature that are especially noteworthy. First, attachment scholars are beginning to investigate the joint role of cognitive and motivational processes (e.g., Collins et al., 2003; Fraley et al., 2000),

which should lie at the heart of attachment dynamics. Second, in line with contemporary models of personality (e.g., Mischel & Shoda, 1995), there is increased awareness of the need to study individual differences in terms of stable person × situation interactions (e.g., Collins & Feeney, in press; Mikulincer et al., 1998). Third, the use of priming techniques and other methods of manipulating attachment representations in the lab provide critical opportunities for testing the causal role of working models in shaping important personal and interpersonal outcomes (e.g., Rowe & Carnelley, 2003). Finally, there is growing interest in normative processes, as well as in individual differences in attachment style (e.g., Mikulincer et al., 2001, 2002).

CONCLUDING COMMENTS

As we have highlighted throughout this chapter, individuals enter their relationships with a rich network of representations that shape how they construct their lives and find meaning in their personal and interpersonal experiences. Attachment theory provides an ideal framework for understanding how close relationships in adulthood may be shaped by a long history of social and emotional experiences that precede such relationships. Attachment scholars have made tremendous progress in uncovering the content and function of working models, but much remains to be discovered about the precise mechanisms through which they shape personal and interpersonal experiences across the lifespan. Our goal in this chapter was to contribute to this effort by encouraging attachment researchers to think about working models in a more precise and systematic way, by highlighting emerging themes and trends in the literature, and by stimulating thoughtful research on the topic and continued theoretical refinement.

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