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The Internal Working Models Concept: What Do We Really Know About the Self in Relation to Others?

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The internal working models concept is the foundation for understanding how attachment processes operate in adult relationships, yet many questions exist about the precise nature and structure of working models. To clarify the working models concept, the authors evaluate the empirical evidence relevant to the content, structure, operation, and stability of working models in adult relationships. They also identify 4 theoretical issues that are critical for clarifying the properties of working models. These issues focus on the central role of affect and goals in working models, the degree to which working models are individual difference or relational variables, and the definition of attachment relationships and felt security in adulthood.

> Each individual builds working models of the world and of himself in it, with the aid of which he perceives events, forecasts the future, and constructs his plans. In the working models of the world that anyone builds a key feature is his notion of who his attachment figures are, where they may be found, and how they may be expected to respond. Similarly, in the working model of the self that anyone builds a key feature is his notion of how acceptable or unacceptable he himself is in the eyes of his attachment figures. (Bowlby, 1973, p. 203)

Attachment theory (Bowlby, 1969, 1973, 1979, 1980) has profoundly influenced research and theorizing about the nature of human relationships across the life span. The primary assumption of attachment theory is that humans form close emotional bonds in the interest of survival. These bonds facilitate the development and maintenance of mental representations of the self and others, or "internal working models," that help individuals predict and understand their environment, engage in survival-promoting behaviors such as proximity maintenance, and establish a psychological sense of "felt" security (cf. Bretherton, 1985; Sroufe & Waters, 1977). The internal working models concept, as a mediator of attachment-related experience, is the cornerstone of attachment theory.

Bowlby (1979) claimed that mental representations of the self and others, formed in the context of the child–caregiver relationship, carry forward and influence thought, feeling, and behavior in adult relationships. Further work (Hazan & Shaver, 1987) elaborated on this idea, highlighting the parallels between the child–caregiver relationship and the relationship between romantic partners. Since Hazan and Shaver's article, a growing number of studies have examined attachment patterns in adult relationships. Many of these studies have attempted to examine aspects of internal working models, the hypothesized mechanism through which attachment behaviors are transferred to different relationship partners throughout the life span. Although the working models concept is the foundation for understanding how attachment processes operate throughout the life course, many unanswered questions about the nature and structure of working models remain. The purpose of this article is to evaluate exactly what is known about the working models concept in attachment between adults and to identify critical areas that remain to be clarified. Although our focus is on the working models concept as it functions in adult relationships, we draw on the literature examining children's working models when appropriate.

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The Internal Working Models Concept

A central tenet of attachment theory (Bowlby, 1969, 1973) is that people develop mental representations, or internal working models, that consist of expectations about the self, significant others, and the relationship between the two. Working models are thought to include specific *content* about attachment figures and the self that is stored within a well-organized representational *structure* (Bowlby, 1980; Bretherton, 1985, 1990; Collins & Read, 1994). Furthermore, their content is believed to include knowledge about the details (e.g., what happened, where, and with whom) of interpersonal experiences as well as the affect (e.g., happiness, fear, and anger) associated with those experiences (Bretherton, 1985). Working models also are assumed to involve *processes* that influence what information individuals attend to, how they interpret events in their world, and what they remember. Furthermore, these processes are hypothesized to operate primarily outside of conscious awareness (Bowlby, 1980; Bretherton, 1985, 1990; Main, Kaplan, & Cassidy, 1985). Because they work on the principle of assimilation, directing both attention and behavior, working models tend to remain stable over time, although they may change under some conditions (Bowlby, 1973). In the sections to follow, we elaborate on these assumptions and evaluate the evidence relevant to working models.

Content of Working Models

Theory. Bowlby (1973) proposed that people hold working models of the self and others, and other theorists have elaborated on this idea (Bartholomew, 1990; Bartholomew & Horowitz, 1991). Working models of self are thought to arise as individuals interact with close others (Cooley, 1902; Markus & Cross, 1990; Mead, 1934). In particular, they are believed to derive from beliefs about how acceptable the self is in the eyes of early attachment figures, as gauged from the responsiveness of those figures. Children who have attachment figures who are readily available, responsive, and reliable are assumed to develop a representation of the self as acceptable and worthwhile. Those who have inconsistent or unresponsive attachment figures are assumed to develop a view of self as unacceptable and unworthy (for a review, see Cassidy, 2000). Working models of others are hypothesized to include expectations about who will serve as attachment figures (i.e., whom to turn to when in need of security), how accessible those figures are, and principally about how they will respond when needed (Main et al., 1985).

Attachment styles. People show different attachment styles that reflect their different interpersonal experiences. Work focusing on parent–child attachment (see Ainsworth, Blehar, Waters, & Wall, 1978) has documented different patterns of behavioral responses from children who are separated and then reunited with their mothers. These behavioral patterns are thought to stem from different underlying working models of the self and others. Young children who willingly approach their mother after the separation and are easily comforted are assumed to hold working models that reflect security. Those who resist contact with their mothers after a brief separation are assumed to hold working models that reflect an avoidant form of insecurity. Those who also display anger by pushing their mother away and are difficult to comfort after a brief separation are assumed to hold working models that indicate an anxious–ambivalent form of insecurity.

In their pioneering efforts, Hazan and Shaver (1987) investigated attachment patterns in adults that corresponded conceptually to the descriptions of children's attachment behavior patterns. Secure adults were defined as those who appeared to be comfortable with closeness in their relationships, and they were not particularly worried about others rejecting them; anxious–ambivalent adults appeared to seek excessive closeness and were concerned that they would be rejected; and avoidant adults appeared uncomfortable with closeness and found it difficult to depend on others. These original descriptions of adult attachment style did not distinguish between specific models of the self and models of others, although working models were assumed to be the foundation of the different styles. The quality of adults' working models was inferred from their self-reports of how they perceived their relationships in general. This stands in contrast to the developmental research, in which the quality of children's working models was inferred from their behavior.

Most researchers who study adult attachment now rely on a refined scheme that explicitly identifies styles according to models of self and other (see Bartholomew & Horowitz, 1991). This scheme yields four attachment styles that result by combining a positive or negative model of the self with a positive or negative model of others. Research suggests the following generalizations about people who conform to each of the four attachment prototypes (see Bartholomew & Horowitz, 1991; Griffin & Bartholomew, 1994). People who hold positive models of the self and others fit the *secure* prototype and report feeling comfortable with closeness and intimacy. People who hold negative models of both the self and others fit the *fearful–avoidant* prototype and report both a fear of and a desire for closeness. People who hold a negative model of the self and a positive model of others fit the *preoccupied* prototype and are characterized by a desire for a high level of closeness and by their fear of abandonment. Finally, people who report a positive model of the self but a negative model of others fit the *dismissing–avoidant* prototype and report being uncomfortable with closeness and overly self-reliant. The four attachment styles are thought to be prototypes that individuals may fit to a greater or lesser degree, depending on where they fall on each working model dimension.

Evidence. In general, evidence from self-report studies is consistent with Bartholomew and Horowitz's (1991) predictions that different attachment styles are associated with positive or negative esteem for the self. Studies using the three-category attachment model generally have shown that secure individuals have higher self-esteem than do anxious–ambivalent individuals (Collins & Read, 1990; Feeney & Noller, 1990; Hazan & Shaver, 1987). Avoidant individuals sometimes show lower self-esteem than do secure individuals (Feeney & Noller, 1990; Hazan & Shaver, 1987, Study 2), but other times they do not differ from secure individuals (Collins & Read, 1990). Studies using the four-category model have clarified these findings. In these studies, secure and dismissing–avoidant individuals evidence higher self-esteem than do either preoccupied or fearful–avoidant individuals (Bartholomew & Horowitz, 1991; Brennan & Morris, 1997; Bylsma, Cozzarelli, & Sumer, 1997; Griffin & Bartholomew, 1994; Pietromonaco & Feldman Barrett, 1997b). Support for the Bartholomew and Horowitz model is less clear, however, when self-esteem is reported on-line (Pietromonaco & Feldman Barrett, 1997b). When evaluations of the self were made immediately after specific everyday interactions, preoccupied individuals reported lower self-esteem than did secure individuals, thus showing a pattern similar to the one found in self-report studies. However, the findings for avoidant individuals were less consistent with the patterns found in self-report studies; neither fearful–avoidant individuals nor dismissing–avoidant individuals differed from any of the other groups in the predicted fashion.

Empirical evidence also generally supports the prediction that secure people hold positive views of others, but the evidence that preoccupied people hold positive views of others and that avoidant people (both dismissing and fearful) hold negative views of others is inconsistent. Some studies report the expected findings. The most often cited study (Bartholomew & Horowitz, 1991) used sociability as an indicator of views of others and showed that secure and preoccupied individuals held more positive views of others than did fearful and dismissing–avoidant individuals. Similarly, in a study in which participants' judgments about specific close others were explicitly compared with their judgments of themselves, preoccupied individuals were more likely to believe that others viewed them more positively than they viewed themselves, whereas avoidants were more likely to believe that others viewed them less positively than they viewed themselves (Mikulincer, 1995, Study 6).

In contrast, some studies report findings that are contrary to the theoretically expected pattern. Two studies tapping general views of others (Collins & Read, 1990; Hazan & Shaver, 1987) showed that preoccupied and avoidant people hold similarly negative views of others, in contrast with the prediction that these two groups should differ in their views of others. In addition, an experience-sampling study (Pietromonaco & Feldman Barrett, 1997b) did not support the hypothesis that secure and preoccupied individuals generally hold more positive views of others than fearful–avoidant or dismissing–avoidant individuals. When individuals rated their views of specific interaction partners immediately after specific interactions, people from the four attachment groups did not

differ in their perceptions of others (Pietromonaco & Feldman Barrett, 1997b). Preoccupied people, however, showed more positive views of their partners during high conflict interactions than did either secure or dismissing–avoidant individuals. Thus, findings from the few studies examining views of others do not consistently support the predictions for insecure individuals; rather, they suggest that insecure individuals' views of others are neither consistently positive nor consistently negative.

Evaluation. Taken together, the findings generally suggest that people who display different attachment styles differ in theoretically predicted ways in their views of the self. The differences in views of the self are robust across studies involving interviews (Bartholomew & Horowitz, 1991) and retrospective self-reports (e.g., Collins & Read, 1990). Evidence, however, is less consistent for views of others. Views of others appear to vary depending on which aspects are assessed (e.g., whether the judgment is at the general or specific level). Some individuals (i.e., those with a preoccupied attachment style) appear to hold mixed, inconsistent views of others (Pietromonaco & Feldman Barrett, 1997b), with the positivity or negativity of the view depending on the particular situational context.

Conclusions about attachment differences in working models of the self and others are tempered by three observations. First, most research on views of the self has measured working models in terms of global positive and negative feelings about the self and therefore provides only limited information about the content of self models. Social–cognitive research on the self (see Kihlstrom & Klein, 1994; Markus & Wurf, 1987) suggests, however, that (a) the self is a dynamic, multifaceted structure that varies, to some extent, with the situational context and (b) the self includes not only positive and negative feelings but also a broader range of content such as central self-conceptions or self-schemas (Markus, 1977); possible selves (Markus & Nurius, 1986); ideal, actual, and ought selves (Higgins, 1987); and the self as enacted in particular situational and cultural contexts (Markus & Kitayama, 1991; Markus & Kunda, 1986; McGuire & McGuire, 1988). From this perspective, views of the self in the context of attachment relationships need to be investigated with greater specificity, including examining elaborated knowledge about different aspects of the self as enacted in close relationships and in particular situational contexts. Likewise, a social–cognitive perspective implies that views of others may not be unidimensional but, rather, may vary with interaction partner and context. Thus, investigations of views of others, like those of views of the self, may benefit from the use of a broader range of measures as well as measures that are more valid (e.g., measures other than sociability that more directly assess views of others).

Second, investigations of working models of others have included a broad range of measures (e.g., general beliefs about human nature vs. views of specific partners), and their association with attachment style is variable. This variation may reflect the current tension in literature regarding whether attachment styles reflect general interpersonal dispositions or are specifically manifest in close relationships, and it may account for some of the inconsistencies in the existing literature.

Third, the majority of research on the content of working models has thus far been conducted with the use of explicit measures (i.e., self-report). When evaluating any target (the self or other), people are prone to making biased or self-protective judgments (Greenwald & Banaji, 1995), and thus research on working models would benefit from the use of more implicit measures (e.g., Greenwald and Banaji's Implicit Association Test [IAT]). Measures that do not rely on conscious self-report are especially important for examining working models because many aspects are hypothesized to operate without conscious awareness and in a self-protective fashion (Bowlby, 1980). Despite the widespread use of self-report measures, some studies have used multiple methods, such as interview behavior, peer reports, and self-reports (Bartholomew & Horowitz, 1991), to assess aspects of working models. Others are also beginning to compare explicitly generated reports with implicit responses derived from the IAT (e.g., Feldman Barrett, McCabe, Costa, Bevaqua, & Bliss, 1999). These studies have yielded findings that are generally consistent with those using solely self-report measures (for detailed discussions of additional measurement issues, see Bartholomew & Shaver, 1998; Brennan, Clark, & Shaver, 1998; Fraley & Waller, 1998; Klohnen & John, 1998).

Finally, working models of the self and others have been approached empirically as if they have independent effects on relationship-related thought, feeling, and action, yet they are clearly interdependent. In Bowlby's original theory, working models of others serve the purpose of helping individuals know whether close others will be available and responsive, and thus they carry implications for the self. Furthermore, working models of the self develop initially through experiences with specific others and how they respond (see Markus & Cross, 1990). Thus, working models of the self are best seen as models of the self in relation to others. This idea fits with theory and research suggesting that the self is inextricably connected to others (see Andersen, Reznik, & Chen, 1997; Baldwin, 1992; Markus & Cross, 1990). For example, others may be incorporated into representations of the self via interactions in a given situation (Schlenker & Weigold, 1989) or particular relationship (Aron, Aron, Tudor, & Nelson, 1991; Ogilvie & Ashmore, 1991), by providing standards for self-evaluation (Higgins, 1987), or by describing the self in reference to others (Rosenberg, 1988) through statements such as "I am a supportive spouse." Researchers might better incorporate this idea of a relational self by taking into account the self as it unfolds in particular situational contexts (e.g., see Markus & Kitayama, 1991), relationships (Hinkley & Andersen, 1996), or interaction sequences (see Baldwin, 1992; Baldwin, Fehr, Keedian, Seidel, & Thomson, 1993).

Structure of Working Models

Theory. Several theorists have proposed that working models are organized in a hierarchical fashion, ranging from general to specific models (Bowlby, 1980; Bretherton, 1985, 1990; Collins & Read, 1994; Main et al., 1985). From this perspective, people do not hold a single set of working models of the self and others; rather, they hold a family of models that include, at higher levels, abstract rules or assumptions about attachment relationships and, at lower levels, information about specific relationships and events within relationships. These ideas also imply that working models are not a single entity but are multifaceted representations in which information at one level need not be consistent with information at another level (Bowlby, 1980; Bretherton, 1990; Main, 1991). Individuals can hold different working models for different significant others because each model can be interconnected with other models within a complex hierarchical network (Collins & Read, 1994).

Evidence. Little direct evidence exists that is relevant to the organization of working models. Several studies, however, bear indirectly on this issue and are consistent with the ideas that people hold both general and relationship-specific working models and that different working models might exist at the specific level. Generalized and relationship-specific measures of working models of the self and others are positively associated (e.g., more positive general models of the self are associated with more positive relationship-specific models of the self), but the correlations are small to moderate (less than .40), indicating that they are not identical (Cozzarelli, Hoekstra, & Bylsma, in press). Despite these different attachment patterns in different relationships, people are able to report a general attachment style (Baldwin, Keelan, Fehr, Enns, & Koh-Rangarajoo, 1996). People report more relationships that are consistent with their generalized (non-relationship-specific) attachment style, and they more easily generate examples of relationships that match their generalized style (Baldwin et al., 1996). In addition, individuals are able to list multiple people who may serve as attachment figures (e.g., romantic partners, parents, best friends, and siblings; Trinke & Bartholomew, 1997).

Evaluation. Theoretical accounts of the structure of working models are well elaborated, but they have not been tested directly in the adult attachment literature. This area may have received less attention, in part, because of the reliance on self-report methods noted earlier. Questions of structure will probably require the use of response latencies or other cognitive methods. Thus, the question of structure is ripe for empirical investigation. Specific questions to be addressed include the following: (a) Are working models organized in a hierarchical fashion, or might they be organized within a complex network of associations that are not linked within a strict hierarchy (e.g., Andersen & Klatzky, 1987; Kihlstrom & Klein, 1994)? (b) When and how is attachment behavior guided by working models at the most abstract, general level versus those at the more specific

level? (c) How are working models at different levels (or within a level) interconnected? and (d) Does the organizational structure of working models vary across individuals, with some people possessing a more complex structure that incorporates multiple working models and other people possessing a less complex structure? Answering such questions will help to clarify other aspects of the concept of attachment noted earlier, including whether attachment styles typically reflect general interpersonal dispositions or whether they function as more context-specific representations of particular relationships.

Processes Underlying Working Models

Theory. Working models are assumed to guide attention, interpretation, and memory in a way that allows individuals to generate expectations about future interpersonal situations and to develop plans for dealing with those situations. On the basis of theory and evidence in the information-processing literature, Bowlby (1980) proposed that working models, through repeated use, begin to function automatically, without conscious awareness. This proposition is consistent with recent work demonstrating that much cognitive activity occurs automatically and outside of conscious awareness (see Bargh, 1994, 1997). Consistent with the psychoanalytic roots of attachment theory, Bowlby also hypothesized that this less conscious side of working models may serve defensive, self-protective functions (Bowlby, 1980; Cassidy & Kobak, 1988; Crittenden, 1990; Main, 1991). For example, individuals may hold multiple models in which a particular aspect of reality is seen in ways that are contradictory and incoherent (e.g., "My mother deeply loves and cares about me" and "My mother criticizes and rejects me and doesn't care about me"). In this case, one model may operate within conscious awareness, whereas the other model may operate primarily outside of conscious awareness, defending the person from a threat to the self (Bowlby, 1973; Main, 1991). Although such defensive processes are assumed to exist to some extent in all individuals, they are thought to be particularly evident among individuals with a dismissing–avoidant style (Cassidy & Kobak, 1988; Fraley, Davis, & Shaver, 1998). In their search for security, dismissing–avoidant children may protect themselves by not relying on an attachment figure who is unlikely to provide comfort (Cassidy & Kobak, 1988; Main & Weston, 1982). Dismissing–avoidant adults similarly may seek security by downplaying their need for close relationships and by emphasizing their self-reliance (Fraley et al., 1998).

Evidence. A variety of indirect evidence has been cited in support of the notion that working models guide the processes underlying attachment patterns. For example, working models are the hypothesized mechanism directing people's patterns of explanations for relationship events (Collins, 1996), their perceptions of romantic relationships (Baldwin et al., 1993; Carnelley, Pietromonaco, & Jaffe, 1994, 1996; Collins & Read, 1990; Hazan & Shaver, 1987; Pietromonaco & Carnelley, 1994), their perceptions of the self and others (Mikulincer, 1995, 1998a, 1998b), their choice or liking of particular kinds of partners (Chappell & Davis, 1998; Frazier, Byer, Fischer, Wright, & DeBord, 1996; Kirkpatrick & Davis, 1994; Pietromonaco & Carnelley, 1994), their organization of relationship knowledge (Fishtein, Pietromonaco, & Feldman Barrett, 1999), their behavior in romantic relationships (Simpson, 1990; Simpson, Rholes, & Nelligan, 1992; Simpson, Rholes, & Phillips, 1996), and their emotional experience and coping styles (Fraley & Shaver, 1998; Mikulincer, Florian, & Weller, 1993; Mikulincer & Orbach, 1995; Pietromonaco & Feldman Barrett, 1997b; Tidwell, Reis, & Shaver, 1996).

Many of these studies, however, have relied on conscious self-reports that cannot adequately assess the cognitive mechanisms underlying working models. Some notable studies (e.g., Baldwin et al., 1993; Collins, 1996; Fishtein et al., 1999; Fraley & Shaver, 1997; Mikulincer, 1995, 1998a, 1998b), however, have used implicit measures (e.g., reaction time, recall, coding of open-ended inferences, and physiological measures) that provide a stronger basis from which to infer cognitive processes. These studies have demonstrated attachment differences in the accessibility and recall of positive and negative content (Baldwin et al., 1993; Mikulincer, 1995), in recall and response time for information about the self and others under different contextual conditions (Mikulincer, 1998a, 1998b), in open-ended explanations for relationship-relevant events (Collins, 1996), and in

the organizational complexity of relationship knowledge (Fishtein et al., 1999). In addition, a few studies (e.g., Simpson et al., 1992, 1996) have used behavioral measures, which also are more implicit measures than self-report. These studies have shown that people with different attachment styles display different behavior in their interactions with a romantic partner under anxiety-provoking conditions (e.g., avoidant individuals engage in less physical contact with their partner than do secure individuals). The degree to which these behavioral differences reflect underlying cognitive processes will need to be clarified, however, by studies that also assess cognitive variables as mediators of this effect.

Several studies have examined whether adult attachment is linked to defensive processing. Within the developmental literature, researchers have examined the organization and coherence of adults' descriptions of their childhood relationship with their parents during the Adult Attachment Interview (Main et al., 1985) as an implicit indicator of processing. In this research, trained judges code respondents' descriptions along a variety of dimensions, such as coherence and the ability to provide specific memories. This work has demonstrated that dismissing–avoidant individuals often make general idealized statements about their parents, but their more specific memories often focus on negative experiences such as being neglected or rejected by a parent. This discrepancy suggests that dismissing–avoidant individuals may be attempting to suppress their painful experiences, but these attempts may not be completely successful because dismissing–avoidant adults also have shown increased physiological responsiveness (skin conductance level) at points in the Adult Attachment Interview where they have denied the negativity of their childhood experiences (Dozier & Kobak, 1992).

Within the literature on attachment in romantic relationships, dismissing–avoidant individuals, relative to individuals with other attachment styles, appear to more easily suppress their thoughts about an attachment threat (Fraley & Shaver, 1997). In contrast to the findings for adult attachment to a parent (e.g., Dozier & Kobak, 1992), however, this suppression was associated with decreased physiological arousal (skin conductance level), suggesting that these individuals may have successfully deactivated the attachment system (Fraley & Shaver, 1997). Other work (Pietromonaco & Feldman Barrett, 1999b) using an implicit measure of defensiveness also has shown that individuals who were higher in dismissing-avoidance evidenced greater defensive verbal behavior in open-ended, written narratives about a specific conflict in their romantic relationship, whereas those higher in preoccupation evidenced less defensive verbal behavior. In addition, negative self-referent words interfered less with avoidant individuals' responses on the Stroop color-naming task than for secure or preoccupied individuals (Mikulincer, 1995, Study 2), suggesting that negative self-referent content may be less accessible in memory for avoidant individuals.

Evaluation. People who evidence different attachment styles differ in their perceptions and interpretations of themselves, others, and their relationships; in their reported experience of emotion; and in the ease with which they access and recall information about themselves. Especially important are studies that have relied on more implicit methods and have generally supported the idea that attachment style is associated with different patterns of construal, as well as accessibility and memory, for some kinds of information (e.g., Baldwin et al., 1993; Collins, 1996; Fishtein et al., 1999; Fraley & Shaver, 1997; Mikulincer, 1995, 1998a, 1998b; Pietromonaco & Feldman Barrett, 1999b). These studies have the methodological advantage of relying on outcome measures (e.g., reaction time, behavior, physiological arousal, and coded patterns of explanation or description) that are less subject to self-report biases. In addition, event-contingent diary studies (Pietromonaco & Feldman Barrett, 1997b; Tidwell et al., 1996) in which individuals report on their interactions immediately after they occur also are thought to minimize memory biases in self-reports. Studies that have used retrospective self-reports as outcome measures are more problematic because people often are not able to provide accurate reports of their cognitive processes (see Nisbett & Wilson, 1977).

Questions remain about why the processing differences found so far might occur. For example, the extent to which processing differences are controlled versus automatic cannot be determined in most studies because participants are consciously aware of the stimuli and their responses (e.g., Bargh & Tota, 1988; Williams,

Mathews, & MacLeod, 1996). One way to address this problem would be to present stimuli subliminally, thereby reducing the possibility that conscious awareness could account for the effects (see Williams et al., 1996). Another question concerns the degree to which some of the processing differences, such as those found for memory (e.g., Mikulincer, 1995), reflect differences in mood (e.g., dysphoria) rather than in cognitive representations of the self and others. For example, in one study (Mikulincer, 1995, Study 1), preoccupied people showed less positivity in their recall of self-referent words, a finding that could be explained in terms of the content and structure of their mental representations or in terms of underlying differences in mood. In other words, the computations underlying the psychological processes remain unclear.

No studies to date have examined the automatic activation of working models (see Bargh, 1997), despite the theoretical importance of this concept. The few studies addressing the operation of working models outside of conscious awareness have focused on the role of defensiveness. This work suggests that dismissing–avoidant individuals are more likely to show defensive processing, but many questions remain about when, why, and how these defensive processes occur. In addition, the two studies using physiological measures (Dozier & Kobak, 1992; Fraley & Shaver, 1997) yielded opposing patterns, for reasons that will need to be clarified by future research. Finally, further investigations are needed to explore other processing components (e.g., attentional mechanisms) that have yet to be investigated.

Stability and Continuity

Theory. Working models are usually considered to be fairly stable within a relationship over time (Bowlby, 1973; see also Cassidy, 2000, and Fraley & Shaver, 2000). This stability occurs, in part, because the quality of interactions between two individuals remains stable within the relationship, but also because working models function to direct attention to representation-consistent information and to produce interpretations of interpersonal events that are consistent with those representations (Ainsworth, 1989). Despite their stability, working models also are viewed as dynamic representations that can be updated, elaborated, or replaced as life circumstances change (Bowlby, 1973; Hazan & Shaver, 1987). Such changes, when they occur, happen gradually and with some difficulty.

Although working models may show some continuity in content over time, their structure is likely to evolve substantially from infancy to childhood and adulthood. The initial models formed in infancy and early childhood are likely to become more complex and sophisticated as children develop more abstract cognitive abilities (Bowlby, 1969). Young children's working models are likely to include simple information about caregivers' availability and responsiveness, whereas those of older children and adults are apt to include more detailed, elaborated information; to incorporate more advanced cognitive processes such as imagining the partner's responses; and to be organized within a complex network of hierarchies (Bretherton, 1990).

Evidence. Working models are thought to have some continuity from childhood to adulthood because of their propensity for stability over time (Bowlby, 1979; Hazan & Shaver, 1987; Shaver, Collins, & Clark, 1996). Evidence based on individuals' memories of their childhood experiences supports the notion that some continuity does indeed exist (Carnelley et al., 1994; Hazan & Shaver, 1987). For example, Hazan and Shaver (1987) found that secure adults reported warmer relationships with their parents than did anxious–ambivalent or avoidant adults; avoidant adults reported colder and more rejecting relationships with their mothers than did anxious–ambivalent adults; and anxious–ambivalent adults reported that their parents were more unfair and intrusive. In addition, one longitudinal study (Klohnen & Bera, 1998) has documented that women's reports of attachment-related characteristics (e.g., interpersonal closeness, social confidence, and emotional distance) show continuity when assessed at the ages of 27, 43, and 52 years.

Although some evidence exists for the stability of working models, it is also the case that working models can be modified as life circumstances change. Studies of attachment between mothers and children (Thompson, Lamb, & Estes, 1983; Vaughn, Egeland, Sroufe, & Waters, 1979) suggest that major life changes alter working models, but little empirical evidence exists about how life events might lead to

change or stability in working models in adulthood (Rothbard & Shaver, 1994). No studies have examined changes that may occur over time in the structure of working models.

Evaluation. Similar to the research reported for other aspects of the working models concept, most of the research suggesting that working models are stable over time has relied on self-report, in this case respondents' memories of previous relationship-relevant details. Ample evidence from other areas of psychology suggests, however, that people may not accurately recall their past experiences. Current memories may derive primarily from working model representations independent of relationship-relevant events, or they may be biased by current relationship experiences or goals (for a discussion of bias in retrospective judgments, see Ross, 1989; Schacter, 1996). Thus, the degree to which continuity exists from childhood through adulthood remains an open question. The one longitudinal study (Klohnen & Bera, 1998) of adults suggests that attachment-related characteristics may show continuity from early to middle adulthood.

Current Status of the Working Models Concept

It should be evident that the working models concept is theoretically rich and has served as the foundation for a large body of research in both developmental and social psychology. Yet, detailed descriptions of working models and their characteristics tend to be general or imprecise, and many of their core features have yet to be empirically documented. A sound theory of adult attachment requires that the working models concept be specified more clearly and empirically validated.

We have identified four critical questions that are relevant for further delineating the properties of working models in adults: (a) What is the role of affect in working models? (Is affect an outcome of working models or an organizing force?) (b) Are working models generalizations across relationships (an individual difference variable), or are they specific to particular relationships (a relational variable)? (c) What is the role of the relationship context in the activation of working models? and (d) What is the role of attachment goals in how working models function? Each of these questions touches on issues that are important for further clarifying the underlying content, structure, and process components of working models.

The Role of Affect

Bowlby came from the object relations tradition, and, like other object relation theorists, he viewed working models and their associated goals as inherently tied to affect. Much of the empirical work in the adult literature has asked the following question: How do working models influence emotional responses? The emphasis has been on how cognitive representations trigger or influence affect. Differences clearly exist in the emotional responses of people with different attachment styles. Evidence suggests that people who report different attachment styles, and who presumably differ in their underlying working models, differ in their emotional reactivity and in what they do in response to those emotions (e.g., Bartholomew & Horowitz, 1991; Carnelley et al., 1994; Hazan & Shaver, 1987; Pietromonaco & Feldman Barrett, 1997b; Simpson et al., 1992). For example, people who more closely fit the preoccupied prototype report intense emotions (Collins & Read, 1990; Pietromonaco & Carnelley, 1994; Pietromonaco & Feldman Barrett, 1997b), frequent emotional ups and downs (Hazan & Shaver, 1987), high emotional expressiveness (Bartholomew & Horowitz, 1991), and high anxiety and impulsiveness (Shaver & Brennan, 1992). In contrast, people who more closely fit the dismissing–avoidant prototype report dampened emotionality (Pietromonaco & Feldman Barrett, 1997b), interviewers rate them as less emotionally expressive than other individuals (Bartholomew & Horowitz, 1991, Study 1), and they are more able to suppress their feelings (Fraley & Shaver, 1997).

The view that working models produce emotion reflects the roots of many adult attachment researchers in the social–cognitive tradition. Definitions of working models often appear similar to definitions of schemas, but the working models concept reflects more motivated, dynamic, affectively charged processes. From an object relations standpoint, we propose that relationship cognitions are inextricably tied to one another by their emotional content. In this view, emotions are not merely an outcome of working models but are fundamental to the way

		Emotional Reactivity	
		Low	High
Reliance on Others	Willing	Secure	Preoccupied
	Unwilling	Dismissive	Fearful

Figure 1. Emotional reactivity and reliance on others for regulation.

in which people organize knowledge about their relationships.

In our view, working models may be best characterized in terms of underlying affective processes. We (Pietromonaco & Feldman Barrett, 1999a) have proposed that two similar affect-related processes are implicated in the operation of the attachment system for adults (see Figure 1): (a) *emotional reactivity,* defined as the frequency with which the need for felt security is activated, and (b) *emotional regulation strategies,* defined as the patterns of relationship behavior that individuals enact in an attempt to maintain or restore felt security, that is, the frequency with which individuals use others in the service of affect regulation (for a complementary model, see Fraley and Shaver, 2000). These two affective processes capture the affective aspects of working models that have been postulated by Bowlby and other object relations theorists and are consistent with developmental work suggesting that attachment style is broadly connected to temperamental differences manifested as emotional reactivity and to the strategies (e.g., approach or avoidance behaviors) that people use to modulate emotional experiences (see Bridges & Grolnick, 1995; Eisenberg & Fabes, 1992; Rothbart & Derryberry, 1981).[1] Furthermore, the idea that adults who hold negative self-views tend to be more emotionally reactive has received some indirect support (Gross, Sutton, & Ketelaar, 1998); people who show greater affective reactivity are more likely to evidence neuroticism, which has been associated with lower self-esteem. Although this perspective will need to be tested directly, it may be advantageous because it focuses researchers on the process by which working models direct attachment-related behaviors. In contrast to related theoretical perspectives (e.g., Mikulincer & Florian, 1998; Shaver et al., 1996) in which working models are seen as influencing emotion regulation, our view recognizes these affect-related processes as integral to the processes associated with how working models function.

Recent work (Niedenthal, Halberstadt, & Innes-Ker, 1999) offers some interesting methods for examining how emotion influences the way in which people organize their perceptions. Studies by Niedenthal and her colleagues (e.g., Halberstadt & Niedenthal, 1997; Niedenthal, Halberstadt, & Setterlund, 1997) suggest that emotion serves to promote conceptual coherence, leading individuals to categorize together experiences that elicit similar emotional responses. As a result, affect may function as the "glue" that binds information within mental representations. Nowhere should this be more true than for working models. Events that occur across different domains of life might be categorized more in terms of the emotional responses they elicit than in terms of their specific semantic features (e.g., what was actually said or accomplished in an interaction). For example, a woman who felt angry in response to an interpersonal event that occurred at work (e.g., an employee's failure to arrive at meetings on time) and to another event that occurred at home (e.g., a dispute over handling family finances) might more closely associate these two events, even though their semantic content is quite different. Furthermore, she would associate the two interactions to a greater degree than if the two interactions had elicited different emotional reactions (e.g., anger and fear).

The affective, dynamic aspects of working models may be best captured by more implicit measures (see Greenwald & Banaji, 1995; Greenwald, McGhee, & Schwartz, 1998) rather

[1] Although the degree to which emotional reactivity reflects innate biological predispositions or learned responses remains a point of debate, many theorists agree that it reflects both internal and external influences.

than traditional self-report measures for reasons that we have already outlined. For example, the belief that people should be influenced by emotional experience is inconsistent with the Western cultural assumption that people should act to limit the influence of emotion on their thoughts and actions (Damasio, 1994; Lutz, 1990). As a result, respondents may not accurately depict the role of emotion in their conscious self-reports.

In summary, working models are "hot" structures that are dynamic and affectively charged. Attachment researchers have not yet capitalized on this feature of Bowlby's theory, or more generally of object relations theory, but we think that an important new direction will be to focus on the affect-related processes (i.e., emotional reactivity and regulation) that underlie working models and to examine emotion as an organizing force in how people think about and behave in their relationships.

Individual Difference Versus Relational Variable

A primary question in the attachment literature concerns whether attachment styles, and the working models that underlie them, are an individual difference variable or a relational variable (e.g., Kobak, 1994). As an individual difference variable, working models would be associated with a consistent pattern of attachment-related behaviors across relationships with different partners. Consistent with this view, adult attachment researchers typically measure attachment style at a general level, asking people to describe their general style across relationships (e.g., by choosing a prototype or making dimensional ratings to describe their general feelings about relationships).

Using this approach, researchers have demonstrated that people who report different generalized attachment styles differ in their beliefs about themselves, others, and relationships (Baldwin et al., 1993; Bartholomew & Horowitz, 1991; Carnelley & Janoff-Bulman, 1992; Collins & Read, 1990; Hazan & Shaver, 1987; Mikulincer, 1995; Pietromonaco & Feldman Barrett, 1997b); their emotional responses (Collins & Read, 1990; Hazan & Shaver, 1987; Mikulincer & Orbach, 1995; Pietromonaco & Carnelley, 1994; Pietromonaco & Feldman Barrett, 1997b; Shaver & Brennan, 1992); and their relationship functioning (Carnelley et al., 1996; Collins & Read, 1990; Feeney, Noller, & Callan, 1994; Kirkpatrick & Davis, 1994; Simpson et al., 1992). Diary studies that have examined the same person's reactions across different kinds of relationships (e.g., best friends and romantic partners) also have revealed some general effects of attachment style across different relationships (Pietromonaco & Feldman Barrett, 1997b; Tidwell et al., 1996). Together, these findings suggest that attachment style, when measured at a general level, operates to some extent like a broad interpersonal style or personality characteristic that affects individuals' responses to all kinds of relationships.

If working models are more of a relational variable, then they should be relationship specific and show some variability across different attachment partners. Indeed, developmental research suggests that children do not always show the same attachment patterns with their mothers as with their fathers (see Fox, Kimmerly, & Schafer, 1991). Adult attachment researchers typically have not measured attachment style as a relational variable, but there are some recent exceptions (Baldwin et al., 1996; Cozzarelli et al., in press; Trinke & Bartholomew, 1997). These studies indicate that people (a) can identify more than one person who may serve as an attachment figure and are able to rank order in a hierarchical fashion their use of these people as attachment figures (Trinke & Bartholomew, 1997); (b) report a range of attachment styles across relationships, evidencing feelings of security in some relationships but anxious–ambivalence or avoidance in others (Baldwin et al., 1996); and (c) are able to report both generalized and specific working models of the self and others (Baldwin et al., 1996; Cozzarelli et al., in press).

Thus, evidence exists in support of working models as a general personality variable and as a relationship-specific variable. Generalized and specific models are probably related, but it is likely that, in many cases, they are not identical (see Cozzarelli et al., in press). It will be important for future work to assess attachment at both general and specific levels to determine the relative ability of each type of measure to predict different behavioral outcomes. When attachment is measured at the most general level, thoughts, feelings, and behaviors that are derived from generalized expectations of others

are apt to operate much like a broad personality variable. This relatively nonspecific working model may be most evident in contexts in which little is known about the relationship context (e.g., at the beginning of a new relationship) or when individuals are unable or unwilling to attend to relationship-distinguishing details. As a result, few differences across relationships will be evident. In contrast, when attachment is measured at a more specific relationship level, greater variation may occur in behaviors across relationships. Indeed, initial evidence (Cozzarelli et al., in press) suggests that relationship-specific measures better predict relationship outcomes than more general measures.

A number of interesting theoretical issues arise from the notion that working models vary in their degree of specificity. First, what does the concept of an attachment "style" mean when working models vary from relationship to relationship? Perhaps "style" should reflect the working models that are modally activated (i.e., most frequent model used with others), or perhaps it should reflect the working models associated with the most formative or most affectively important relationship (see Weiss, 1982). Some theorists (Ainsworth, 1989; Hazan & Shaver, 1994) have suggested that the effects of working models should be strongest in a primary attachment relationship and that people are likely to have a single primary attachment relationship. In this case, the definition of attachment style would need to be more constrained than it has been in the literature, with greater emphasis on examining those relationships that are most likely to serve attachment needs. Given that individuals possess multiple working models at the more relationship-specific level, perhaps the concept of attachment "style" should come to include the flexibility with which individuals shift from one set of models to another as they change relationship contexts. Perhaps it might be useful to abandon the attachment "style" concept all together in favor of attachment "trajectory." An attachment trajectory can occur over the life span, as working models change with important relationship experiences. An attachment trajectory also can occur within a relationship over time, as individuals move from using their most general working model of others to fashioning a model of a specific other.

Second, how do people aggregate across all of their relationship experiences to be able to respond to general questions about attachment style? Do they use the style that characterizes their most frequent type of attachment relationship, their most intense attachment relationship, or their most recent relationship? Or do they summarize across relationships to estimate how they feel on average? It is unclear to what extent individuals respond in any of these ways, or whether different individuals rely on different strategies to estimate their general attachment style. Furthermore, not all relationship contexts will necessarily evoke attachment processes to the same extent, even for relationships that clearly serve attachment functions (see Simpson & Rholes, 1994). How are such base rates factored into aggregate estimates?

Third, is there a single working model of the self or multiple working models of the self? Because working models of the self include how acceptable and worthwhile one is in the eyes of an attachment figure, it is possible that there are multiple models of the self, each associated with a different attachment relationship. This view fits closely with social–cognitive conceptions of the self (Markus & Cross, 1990; Markus & Wurf, 1987) that depict self-representations as multifaceted and varying with the situational or relational context. If relational context is important, as this view suggests, then it may be more useful to view working models of attachment as representations of the self in relation to others (Andersen et al., 1997; Hinkley & Andersen, 1996), wherein the other might be a generalized other or a specific relationship partner. Furthermore, for a given relationship, people may have multiple working models for the self in relation to that particular partner (Ogilvie & Ashmore, 1991). Thus, working models of the self in relation to any particular attachment figure may vary with the situational context.

Finally, are the processes associated with working models that underlie attachment patterns stable individual differences, or are they relationship specific? Take, for example, our suggestion that working models are associated with differences in emotional reactivity and reliance on others for emotion regulation purposes. Emotional reactivity, defined as the frequency with which an individual is threatened and security needs arise, may be more of an

individual difference variable. People who are more preoccupied or fearful–avoidant are likely to be more reactive and to feel threatened more frequently, whereas those who are secure will be less reactive and less frequently threatened. As a result, preoccupied and fearful–avoidant individuals will experience more intense negative affect more frequently and therefore have a greater need to regulate their affect than will secure individuals. Dismissing–avoidant individuals, because they are apt to use more defensive strategies (Cassidy & Kobak, 1988; Fraley et al., 1998), are not likely to consciously experience threat and therefore will be less likely to seek security from others. How individuals go about regulating their affect—or, more specifically, the extent to which they rely on close others for regulatory support—may vary from relationship to relationship. Thus, the attachment patterns observed may stem from both stable and context-dependent characteristics.

In summary, assessing attachment at the general level will provide only a limited view of the working models that underlie attachment behaviors. Attachment measured at a more general level is likely to reflect a more dispositional characteristic that will predict responses across different kinds of relationships, and it may be closely connected to characteristics such as temperament or frequency of threat activation. Relationship-specific variation may also exist, but to assess it properly, attachment phenomena must be measured at the level of the specific relationship in a way that takes into account the characteristics of that particular relationship. We also need to consider that, when attachment is measured at one point in time, the findings may not generalize across time or context for a given individual.

The Role of the Relationship Context

Internal working models may be most likely to be activated within the context of attachment relationships, but what is an attachment relationship in adulthood? Within the developmental literature (e.g., Ainsworth, 1989; Sroufe & Waters, 1977), an attachment relationship is defined as a close emotional bond between a child and his or her primary caregiver that serves the important function of providing the child with physical and psychological security. Adult attachment researchers (including ourselves) have been less clear about establishing the boundaries of what is and what is not an attachment relationship in adulthood, yet this distinction is important for assessing the implications of working models for relationship processes.

Research following Hazan and Shaver's (1987) article has examined "adult attachment" in a variety of relationships: those with romantic partners (e.g., Carnelley et al., 1994), parents (e.g., Collins & Read, 1990), same-sex and opposite-sex friends (e.g., Tidwell et al., 1996), strangers (e.g., Mikulincer & Nachshon, 1991), coworkers (Hazan & Shaver, 1990), and even God (Kirkpatrick & Shaver, 1992). Thus, researchers have focused on a variety of relationships that may or may not serve attachment-related needs. As we have noted, some research on attachment has been conducted without reference to a specific relationship partner. This lack of specificity may have occurred because we have not yet examined what constitutes an attachment relationship in adulthood (see Fraley and Shaver, 2000).

Felt security. Ainsworth (1989) suggested that the identifying feature of an attachment relationship is that it serves the function of providing felt security. To know what an attachment relationship is in adulthood, one needs to know what felt security is for an adult. On the basis of both the psychodynamic literature from which attachment theory originally derives and literature on the self, we propose that adults experience felt security when their attachment figure confirms that (a) they are loved and lovable people, and (b) they are competent or have mastery over their environment. A feeling of threat occurs when a press arises for which the individual feels ill equipped to cope (Tomaka & Blascovich, 1994). The press can be generated either externally, from the environment, or internally, from negative affect. When individuals experience a self-relevant threat, they may need to engage in behaviors that will help to reestablish or promote feelings of security. Thus, individuals experience threat (and therefore a need for security) when their self-esteem is in question, either because of negative information or when they feel unable to deal with a perceived danger on their own. From this perspective, then, attachment relationships are those that have the potential to provide felt security in the face of threat and in which working models of

the self are modified or reinforced in some significant way by the actions of another.

Although attachment relationships may provide a source of felt security throughout the life course, felt security may not be established and maintained via precisely the same behaviors in adulthood as it is in childhood. Attachment relationships between two adults differ in several respects from those between a parent and child (Ainsworth, 1989; Hazan & Shaver, 1994; Shaver, Hazan, & Bradshaw, 1988). Adults in romantic relationships are motivated not only by the attachment system but also by the caregiving and reproductive systems. The caregiving system produces behaviors designed to calm or help another and typically is activated when individuals see that their romantic partner is distressed. The reproductive system is associated with sexual behaviors, which may be activated by cues such as physical or social attractiveness. In adults, it is likely that the three systems (attachment, caregiving, and sexuality) work together to produce felt security because individuals may feel worthwhile and effective in the context of sexual intimacy or when providing care to their partner. Thus, the aspects that define an attachment system in children may not have a complete parallel in adulthood. As with all life span developmental questions, the challenge for researchers is to determine which behaviors are functionally equivalent at different points in the life cycle.

Anchoring attachment to the concept of felt security in adults may have implications for how the concept of attachment style and the underlying working models are understood. It may be that global attachment style is, in part, determined by the frequency with which individuals treat partners as attachment figures as a way of regulating their emotions. Although some contexts might require that individuals temporarily rely on an interaction partner for felt security when normally they would not, attachment can be viewed as variation in the tendency of individuals to rely on others for felt security. Securely attached adults, who generally feel competent and worthy, may seek out an attachment figure only when they experience a specific, external threat to the self. Because they infrequently feel threatened, they will engage in attachment-related behaviors (e.g., support seeking) only when necessary. In contrast, people who have less certain and less positive views of themselves (e.g., preoccupied people) may see many situations as potentially threatening to their sense of self. As a result, they may attempt to treat many other people—even inappropriate ones, such as strangers—as if they were attachment figures in an effort to achieve felt security. Furthermore, they may engage frequently in attachment-related behaviors, and often these behaviors will appear to be inconsistent with the current context. Dismissing–avoidant individuals, who prefer not to depend on others, are less likely to use others as a way of regulating felt security, even when they ought to do so. This unwillingness to rely on others, combined with the notion that they may be threatened infrequently, may account for why dismissing–avoidant individuals rarely engage in attachment-related behaviors. Recent evidence (Fraley & Davis, 1997) suggests that dismissing–avoidant adults are less likely to establish an attachment relationship with a romantic partner and may even try to handle their attachment needs on their own. Thus, their negative views of others may lead them to try to serve as their own attachment figure in an effort to achieve felt security.

For relationships that serve attachment functions, other aspects of the situational context will determine whether individuals actually display attachment-related behaviors. For example, in the face of distressing events, such as separation from an attachment figure or a physical threat, children are more likely to engage in attachment behaviors such as proximity seeking (Bowlby, 1980). Similarly, separation (Fraley & Shaver, 1998), distress (Mikulincer, 1998a, 1998b; Simpson et al., 1992, 1996), or interpersonal conflict (Pietromonaco & Feldman Barrett, 1997b) in adulthood may trigger the operation of attachment processes.

Summary. Defining the degree to which a particular relationship serves attachment functions will be important for understanding when and how working models guide relationship processes. Working models should be most likely to be activated when individuals perceive a threat to their sense of self and turn to another to reestablish feelings of security. Some individuals, such as those who are more likely to experience threat frequently, may use a larger number of relationship partners to meet their need for felt security, whereas other individuals may treat only a few people as attachment fig-

		Independence: High	Independence: Low
Intimacy	High	Secure	Preoccupied
	Low	Dismissive	Fearful

Figure 2. Chronic subgoals associated with attachment styles.

ures. Thus, rather than assume that particular kinds of relationships (e.g., romantic relationships) are attachment relationships, researchers will need to assess the degree to which different individuals use particular relationship partners in the service of attachment needs. In addition, it will be important to specify further other aspects of the situation that are most likely to activate working models within a given relationship. Although broad classes of threatening situations can be identified, it is likely that the variety of potential threats to the self, and the degree to which individuals use particular relationship partners to handle those threats, will vary idiographically.

Goals

Just as attachment-related working models may be organized in a hierarchical fashion, so too may attachment-related goals be organized hierarchically. As the definition of an attachment relationship implies, working models are organized around a single, overarching goal to achieve felt security. How people go about trying to achieve this goal may depend, in part, on their subgoals. Some of the subgoals that have been discussed in the literature include midlevel goals used to direct behavior in the service of the broader goal of obtaining felt security. These subgoals include, for example, seeking intimacy or closeness, a desire to maintain one's independence, and protection of the self. Few studies have directly examined attachment goals, although some theorists (Collins & Read, 1994; Shaver et al., 1996) have discussed their significance in working models.

From our perspective (Pietromonaco & Feldman Barrett, 1997a), chronic subgoals of achieving intimacy and maintaining independence from others work in the service of maintaining felt security and fit within the four-category prototype model of attachment (see Figure 2). In seeking a sense of felt security, secure people achieve a balance between establishing intimacy and maintaining independence and probably do so with a good deal of flexibility in terms of when they apply each goal. People who are preoccupied with attachment appear to hold an overriding chronic goal to achieve intimacy as a way of attaining felt security, and part of that goal involves obtaining responsiveness from others. In contrast, people who are dismissing of attachment seem to hold an overriding chronic goal to maintain their independence from others as a way of achieving felt security, which may be further linked to a goal to protect the self (Fraley, Davis, & Shaver, 1998). And, finally, people who are fearful of attachment seem to hold conflicting chronic goals to both achieve intimacy and maintain independence from others in their attempts to achieve felt security, but with less flexibility than secure individuals; fearful individuals may have both goals activated at the same time, leading to approach–avoidance conflicts.

These different subgoals also may lead to quite different interpretations and reactions to interpersonal events. Two studies (Fishtein et al., 1999; Pietromonaco & Feldman Barrett, 1997b) using different methods and measures have shown that preoccupied people, who desire a high level of intimacy and responsiveness from others, view high conflict interactions or high conflict relationships much more favorably than people with other attachment styles who do not hold this subgoal to the same extent. In a diary study (Pietromonaco & Feldman Barrett, 1997b), we found that preoccupied people, in comparison with people holding other attachment styles, reported greater intimacy, more positive emotions, and more positive views of their partners as their interactions increased in conflict. In a laboratory study (Fishtein et al., 1999), we found that preoccupied people who

were involved in higher conflict romantic relationships held more complex views of positive aspects of their relationship than did people in other attachment groups, even though all people in higher conflict relationships reported more complex negative views. This finding suggests that preoccupied people attend not only to the negative aspects of conflictual relationships but also to the positive, intimacy-promoting aspects. High conflict interactions, even though they may be unpleasant in some respects, may offer preoccupied people the chance to elicit responses from their partner (e.g., personal disclosures and expressions of emotion) that may make them believe that they are achieving intimacy. Along similar lines, recent work (Mikulincer, 1998c) suggests that a sense of trust is closely tied to a goal to achieve security for preoccupied individuals and to a goal to achieve control for avoidant individuals. Future work applying social–cognitive methods (see Bargh, 1997) for creating temporary interpersonal goals (e.g., to achieve intimacy or maintain independence) in the laboratory will be important for determining the causal role of goals in relationship perceptions and behavior.

In summary, working models are likely to incorporate a variety of attachment subgoals that are used in the service of felt security. Individuals may meet the overarching goal of achieving felt security in different ways depending on their subgoals, such as achieving intimacy. These goals, embodied in working models, may lead individuals to construe and respond to similar situations in very different ways. Attachment goals are likely to be an important aspect of working models, but the challenge for future investigations will be to better specify what they are and how they are organized and to look more carefully at how they might shape relationship perceptions and behavior.

Conclusion

Over the past 12 years, attachment theory has become a driving force in the study of close relationships because it provides a comprehensive perspective for understanding relationship processes. The working models concept is a foundational component of this theory as applied to both children and adults. Theory and research implicitly based on the internal working models concept have generated a wealth of information about issues central for understanding attachment in close relationships, but many fundamental questions about the content, structure, and function of working models remain. First, studies have yet to determine whether working models and their content are best characterized in terms of distinct models of the self and others or in more relational terms that reflect the self in relation to others. Second, few studies have attempted to examine the structure of working models, although theorizing about structure abounds. Third, whether working models actually guide processes such as attention, interpretation, and memory remains an open question. The strongest evidence so far comes from studies that have minimized self-report biases by using more implicit measures. Fourth, more longitudinal evidence is required to determine the extent to which working models show stability and change in adulthood.

The task for future research will be to specify the relational and situational conditions under which working models are most influential and to develop a more precise knowledge base about the structure and operation of working models. If understanding of adult attachment processes is to move forward, future researchers will need to take steps to (a) take into account the more dynamic, "hot" aspects of working models by further examining the role of goals and affect in attachment processes; (b) assess working models at multiple levels, ranging from general to relationship-specific models, as well as identify the features of the situational context that may activate working models; (c) specify whether a given relationship meets the criteria for an attachment relationship (i.e., providing felt security and thereby influencing models of the self); and (d) determine the more proximal goals via which felt security is maintained.

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