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Attachment Styles and Internal Working Models of Self and Relationship Partners

Phillip R. Shaver

University of California, Davis

Nancy Collins

State University of New York at Buffalo

Catherine L. Clark

University of California, Davis

Research on *attachment styles*—relatively coherent and stable patterns of emotion and behavior exhibited in close relationships—is based on the assumption that relational orientations are due to, or perhaps consist in, something called *internal working models of self and others* (Bowlby, 1969; Collins & Read, 1994; Shaver & Hazan, 1993). That is, attachment theory (Ainsworth & Bowlby, 1991), which emerged originally from psychoanalytic object relations theory, is in large part a social-cognitive theory. It explains the continuity of attachment patterns over the life span, from infant-caregiver attachment to emotional bonds between adult lovers, in terms of cognitive models, partly conscious and partly unconscious, that persist over time. This chapter examines the working-models component of attachment theory in some detail, considering what it meant to Bowlby and has meant to subsequent attachment theorists, how it is similar to and different from other conceptions of social-cognitive structures (e.g., schemas and scripts), and how it might be productively researched.

We begin with a brief overview of attachment theory, showing how it led to seminal research on individual differences in relational orientations. We then describe the role played in the theory by internal working models and explain how these models are related to discourse processes in close relationships. Next, we summarize research on infant and adult attachment, showing that it can be organized around the internal working-models construct. We then show how internal working models are similar to and different from other social-cognitive constructs, such as scripts and schemas. We use

emotion regulation as an example of important psychological domains in which working models operate. Finally, we conclude with suggestions for future research on attachment and internal working models.

BRIEF OVERVIEW OF ATTACHMENT THEORY

Attachment theory began in a series of talks entitled "The Influence of Early Environment in the Development of Neurosis and Neurotic Character," given by Bowlby, a psychiatrist, to the British Psychoanalytic Society in 1939 (see Bowlby, 1940; Shaver & Clark, 1994). Over a period of years, these papers were expanded into a three-volume series, *Attachment and Loss* (1969 [revised, 1982], 1973, 1980), and two books of lectures, *The Making and Breaking of Affectional Bonds* (1979) and *The Secure Base* (1988). During most of those same years, Ainsworth helped to develop the theory and, more importantly, provided a powerful set of empirical methods for studying attachment processes in infancy (e.g., Ainsworth, 1967, 1982; Ainsworth, Blehar, Waters, & Wall, 1978). The history of attachment theory has been discussed by Ainsworth and Bowlby (1991) and by many other writers (e.g., Bretherton, 1985, 1991, 1992; Karen, 1994; Shaver & Clark, 1994). Research on attachment theory has been summarized in a host of books and articles (e.g., Bartholomew & Perlman, 1994; Belsky & Nezworski, 1988; Bretherton & Waters, 1985; M. Greenberg, Cicchetti, & Cummings, 1990; Hazan & Shaver, 1994a, 1994b; Lamb, Thompson, Gardner, & Charnov, 1985; Parkes, Stevenson-Hinde, & Marris, 1991; Paterson & Moran, 1988; Pottharst, 1990; Shaver & Clark, 1994; Shaver & Hazan, 1993; Sperling & Berman, 1994). Here, we provide a brief sketch of the theory sufficient to allow readers to understand subsequent sections of this chapter.

Bowlby acquired his psychoanalytic training in England during the years when Anna Freud, Melanie Klein, Donald Winnicott, and others were developing object-relations theory, the variant of psychoanalytic theory that emphasizes the role in personality development of close relationships and their mental representations (J. Greenberg & Mitchell, 1983). With the benefit of hindsight, it is possible to see that the early object-relations theories lay, in a sense, halfway between Sigmund Freud's drive or instinct model of psychoanalysis and Bowlby's attachment theory, which is based on ethology and cybernetic control theory. Both object-relations theory and Bowlby's attachment theory focus on early relationships, especially those between infants and their primary caregivers; but object relations theory retains much of Freud's emphasis on sexual and aggressive fantasies, whereas Bowlby's theory focuses on emotions and emotional bonds in actual close relationships.

Central to Bowlby's theory is the proposition that, beginning in early

infancy, an innate component of the human mind—which Bowlby called the "attachment behavioral system"—in effect asks the question: Is there an attachment figure sufficiently near, attentive, and responsive? If the answer to this question is yes, certain emotions and observable behaviors are triggered. When infants notice that their attachment figure is available, interested, and responsive, they become more playful, less inhibited, visibly happier, and more interested in exploration. When an adolescent or adult falls in love, we would argue, similar positive emotional effects are seen because the same underlying system is involved (Shaver, Hazan, & Bradshaw, 1988).

If the answer to the attachment system's central question is no—that is, if an attachment figure is not sufficiently near, attentive, or responsive—fear and anxiety mount and a hierarchy of increasingly intense attachment-related behaviors is elicited. In infancy, these behaviors include visually searching for the attachment figure, calling and pleading to re-establish contact, toddling or running to the attachment figure, crying, and clinging. In the case of adult lovers, anxious vigilance seems functionally very similar, although the forms of calling and making contact are more diverse and, at least sometimes, more sophisticated.

If the hierarchically organized set of attachment behaviors repeatedly fails to reduce anxiety, the human mind seems capable of deactivating or "suppressing" its attachment behavioral system, at least to some extent, and defensively attempting to attain self-reliance. This leads eventually to the condition Bowlby called *detachment*. We know that this state is defensive, rather than reflecting a simple erosion of attachment (like a natural fading of memory), because it can be quickly transformed into a state of attachment-system activation if an infant begins to believe that his or her temporarily lost or unresponsive attachment figure is once again available.

Humans enter the world with a quickly developed capacity to monitor attachment figures, to become anxious when left alone, to protest the absence of adequate care, and to defensively suppress such protestation when it becomes evident that noisy anger is more harmful than helpful from the standpoint of safe attachment. One of the attractive features of attachment theory is the way in which it explains important individual differences in terms of this single universal behavioral system.

Individual Differences

Ainsworth's major contribution to attachment theory was to show how the attachment behavioral system interacts with different caregiving environments to produce lasting differences in personality (e.g., Ainsworth et al., 1978; see also subsequent literature reviews by Bretherton, 1985; Paterson & Moran, 1988; Rothbard & Shaver, 1994). In what Ainsworth called a *secure* infant-mother dyad, the infant seems to believe, even when mother is

temporarily absent, that she will be accessible and responsive if called upon for help. Secure infants are effective explorers of a novel play environment, such as Ainsworth's well-known laboratory Strange Situation, and are easily comforted upon reunion with their mothers following short separations. *Anxious-ambivalent* dyads are marked by inconsistent and unreliable caregiving. Infants in this category are somewhat wary of unfamiliar people and new environments. Upon separation from mother, they cry intensely, and upon reunion are difficult to soothe. Anxious-ambivalent infants often throw tantrums and appear to seek contact with their mother while simultaneously rejecting her attempts to offer comfort. Infants in *avoidant* dyads appear to believe that their mothers are reliably *unavailable* and *nonresponsive*. Infants in this category appear to be prematurely independent and unconcerned about mother. They often do not cry when she departs and purposefully avoid her when she returns.

Scores of studies have confirmed Ainsworth's observations and extended her ideas to the study of later childhood. The evidence, as reviewed by Elicker, Englund, and Sroufe (1992), Rothbard and Shaver (1994), and Sroufe, Carlson, and Shulman (1993), supports the claim that these attachment patterns persist past infancy and are likely to be manifested, as Bowlby (1979) said, "from the cradle to the grave" (p. 129). This evidence for continuity across the life span is heterotypic; that is, there is "a *conceptual* rather than a literal continuity among behaviors or attributes" (Caspi & Bem, 1990, p. 554). The strategies adults employ to maintain proximity with an attachment figure are not presumed to be (nor are they) identical to the ones used by infants in the Strange Situation, but they are conceptually parallel and empirically predictable. It is this demonstrated continuity in attachment dynamics that Bowlby and other attachment researchers attribute to internal working models.

What these models are and how they function are not yet clear. Moreover, no one has clearly established whether, and if so how, internal working models differ from other hypothesized cognitive structures such as scripts and schemas. We begin our examination of these unresolved issues with a brief review of the internal working-models construct and its history.

BOWLBY'S ADOPTION OF THE WORKING MODELS CONSTRUCT

Bowlby first used the term *working models* in 1969, in *Attachment*, the first volume of his *Attachment and Loss* series. In an extensive review of the cognitive aspects of "behavioral systems" in certain animals, he said: "Members of all but the most primitive phyla are possessed of equipment that enables them to organise such information as they have about their

world into schemata or maps" (p. 74). Later, he acknowledged that the term *map* is misleading, "because [it] conjures up merely a static representation of topography. What an animal requires is something more like a working model of its environment" (p. 110). He borrowed from a psychologist, Craik (1943), and a brain scientist, Young (1964), the idea that the purpose of working models is to allow one to make predictions and create simulations of future events in a particular domain of experience. "The notion that brains do in fact provide more or less elaborate models that 'can be made to conduct, as it were, small-scale experiments within the head' is one that appeals to anyone concerned to understand the complexities of behavior and especially of human behavior" (p. 111; the phrase in single quotation marks is from Young).

Bowlby went on to distinguish between two kinds, or aspects, of working models in the attachment domain: "If an individual is to draw up a plan to achieve a set-goal not only does he have some sort of working model of his environment, but he must have also some working knowledge of his own behavioural skills and potentialities. . . . The two working models each individual must have are referred to respectively as his environmental model and his organismic model" (p. 112). Because in the study of attachment the relevant environment is mostly social and the relevant aspects of the self are more often psychological than "organismic," these two models have come to be called *model of others* (especially of attachment figures, or close relationship partners) and *model of self* (e.g., Bartholomew, 1990).

Bowlby (1969) drew explicit connections between the concept of working models and other psychoanalysts' notions about object relations, or internal representations of important relationship partners: "The environmental and organismic models described here as necessary parts of a sophisticated biological control system are, of course, none other than the 'internal worlds' of traditional psychoanalytic theory seen in a new perspective" (p. 113). Like other psychoanalysts, Bowlby attributed a great deal of psychopathology to inadequate, inaccurate, distorted, or conflicting models. He noted that working models are often used long after they become outdated; they can be partially or entirely unconscious; and conscious examination and verbal articulation of models is an essential part of psychotherapy and of the everyday equivalents of psychotherapy (self-examination and deliberate self-change):

Many of the mental processes of which we are most keenly conscious are processes concerned with the building of models, with revising or extending them, checking them for internal consistency, or drawing on them for making a novel plan to reach a set-goal. Although it is certainly not necessary for all such processes always to be conscious, it is probably necessary that some should be so sometimes. In particular it seems likely that revising, extending, and checking

of models are ill done or done not at all unless a model is subjected from time to time to whatever special benefits accrue from becoming conscious. (p. 113)

Thus, a major feature of healthy development in the attachment domain is the articulation of models of self and relationship partners, and the revision and updating of unsatisfactory, inconsistent, or antiquated models (Bretherton, 1993).

It is noteworthy that Bowlby at times considered working models to be, like scripts or schemas, largely descriptive (i.e., they refer to what relationships are like, what happens when one takes certain actions within relationships, how much one is typically loved, etc.). A key feature of a person's "model of the world" is the person's "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 . . . a key feature is [the person's] notion of how acceptable or unacceptable he himself is in the eyes of his attachment figures" (Bowlby, 1973, p. 203). At other times, Bowlby (1988) expressed a more complicated view of the possibilities, based largely on clinical experience.

He suspected, for example, that "it is not uncommon for an individual to operate, simultaneously, with two (or more) working models of his attachment figure(s) and two (or more) working models of himself" (Bowlby, 1973, p. 205). These models can easily be inconsistent with one another, particularly when one is based on a person's own experience and another on an attachment figure's alternative interpretation of that experience. Often the attachment figure has given explicit instructions and warnings concerning the examination of this kind of conflict: "[A person may find] himself unable to review the representational model(s) he has built of his attachment figure(s) because to do so would infringe a long-learned rule that it is against one or both his parents' wishes that he study them, and their behavior towards him, objectively. A psychological state of this kind in which a ban on reviewing models and action systems is effected outside awareness is one encountered frequently during psychotherapy" (Bowlby, 1980, p. 56). In later theoretical writings, such as Main, Kaplan, and Cassidy (1985), internal working models themselves were said to include such rules and taboos regarding the processing of attachment-related information, and the models thereby acquired a degree of dynamic complexity rarely attributed to social-cognitive constructs such as scripts and schemas.

Bowlby stressed that the alteration of well-established working models is difficult. When new information clashes with such models:

it is the models which win the day—in the short run almost always, in the long run very often. Although in the short term an existing model, if strongly held, tends to exclude new information incompatible with it, in the long term an old

model may become replaced by a new one. Nevertheless, much evidence exists that we undertake such replacement only very reluctantly. . . . When embarked on the task [of altering models] we proceed only in fits and starts, and revert often to the old and familiar model even though we know it to be outdated. (pp. 230–231)

Bowlby devoted most of Volume 3 (*Loss*) of the *Attachment and Loss* series to an analysis of the difficulty of accepting the death of important attachment figures. It is quite normal for people to hallucinate the presence of recently deceased attachment figures (at the door, at the dining table, in bed, etc.), to hold imaginary conversations with them, to maintain their rooms or possessions as if the deceased might continue to need them, and to imagine the lost loved one existing in an afterlife where he or she might be consulted. To a large extent, mourning processes can be judged as healthy rather than unhealthy based on the degree to which working models are reconstructed in a way that allows life to proceed in an adaptive fashion. Ordinary "non-mourning" life can be viewed similarly: Everyone is required to update and sometimes to replace antiquated working models of self and attachment figures. This is most easily done when one is not enmeshed in the past or motivated to defensively exclude all references to it.

COMMUNICATION AND ATTACHMENT

Attachment scholars, such as Main, Bretherton, and Kobak, suggested that communication and discourse processes are the mechanisms by which relatively stable patterns of attachment are formed and perpetuated. Bretherton (1990) argued, for example, that "secure relationships . . . go hand in hand with the partners' ability to engage in emotionally open, fluent, and coherent communication, both *within* attachment relationships and *about* attachment relationships. Insecure relationships, by contrast, seem to be characterized by selective ignoring of signals, as well as by certain forms of incoherence and dysfluency when discussing attachment relations" (p. 58).

In infancy, coherent communication is marked by sensitive parental caregiving in which an infant's emotional signals are accurately decoded and addressed in clear, direct ways. When communicative behavior is analyzed in the Strange Situation, secure infants are found more likely than avoidant infants to engage in "direct communication" by using obvious verbal and nonverbal signals to relay their emotional states to caregivers. In the less frequent situations in which avoidant infants use direct communication strategies, they do so only under conditions of low distress (Grossmann, Grossmann, & Schwan, 1986). In other words, it appears that it is not "safe" or wise for an avoidant infant to display (or perhaps even to feel) negative

emotions. Anxious-ambivalent infants, in contrast, have no trouble experiencing and expressing emotions, but their emotions seem conflicted, incoherent, and difficult to manage. The term *ambivalent* points to the seeming illogic of crying for contact and support and then angrily flailing and twisting in the parent's arms when support is offered.

The same patterns are evident in adulthood, when research subjects are asked to recall and discuss childhood attachment relationships with parents (Main, 1991). Secure adults have little apparent difficulty in retrieving emotion-laden memories from childhood, and they present a realistic, well-integrated portrait of their parents. Secure adults recall both positive and negative experiences in childhood but, overall, seem to have a positive, understanding, forgiving, and relatively autonomous attitude toward their parents. In most cases, their childhood relationships with parents seem to have been largely warm and supportive, but in cases where abuse or neglect was involved, the secure adult seems to have moved beyond it, gained a coherent perspective on it, or come to understand it as the best his or her parent(s) could do under the circumstances. Secure adults exhibit what Main called *coherence of discourse* and *coherence of mind with respect to attachment*. They provide an interviewer with enough information, and sufficiently well-organized information, to answer the interviewer's questions without getting lost in emotional detail. Interestingly, an adult who exhibits this kind of coherence of discourse when discussing attachment is very likely to produce children who act securely in Ainsworth's Strange Situation (Fonagy, Steele, & Steele, 1991; Main et al., 1985). In other words, it seems likely that accurate, coherent communication on the part of a parent regarding attachment-related emotions is a major determinant of an infant's secure attachment to that parent.

Dismissingly avoidant adults have trouble recalling attachment-related events from childhood and tend to proffer bland, positive summary statements about relations with parents that cannot be backed up with concrete examples. There seems to be a defensive barrier between their semantic and episodic memories, at least in domains related to attachment. When questioned about possible pain and vulnerability in childhood, dismissingly avoidant adults tend to deny it; and when asked about the importance of attachment relationships, in childhood and in the present, they tend to pooh-pooh them (hence the term *dismissing*). If skin conductance is monitored during the attachment interview, avoidant adults produce spikes in conductance at exactly the points in the interview where they are inclined to deny negative experiences and emotions (Dozier & Kobak, 1992). This kind of parent has been found to have children who in turn avoid them in the Strange Situation (Fonagy et al., 1991; Main et al., 1985).

Preoccupied (anxious-ambivalent) adults tend to recall attachment-related events in incoherent emotional bursts, somewhat reminiscent of the inco-

herent responses of anxious-ambivalent infants in the Strange Situation. It is not uncommon for them to get so involved in a long tirade about one or both parents that it becomes necessary to ask, "What was the question again?" Unlike secure adults who may have had negative experiences with parents during childhood but now seem to have separated themselves from the pain, preoccupied adults are still enmeshed, still angry and upset. (Main called them *enmeshed and preoccupied with attachment*.) Such adults tend to produce children who are classified as anxious-ambivalent in the Strange Situation.

Main and her coworkers (1985) discovered empirically that a fourth group of infants, labeled *disorganized/disoriented*, have parents whose attachment interviews are marked by local incoherence when discussing attachment-related traumas or losses (a finding replicated by Ainsworth & Eichberg, 1990). Main and Hesse (1990) speculated that unresolved traumas and losses lead a parent to become "frightened or frightening" when a needy infant approaches, thus forcing the infant to disrupt the natural flow of attachment behavior.

These remarkable findings concerning the strong psychological and communicational links between parental and infantile attachment patterns suggest that internal working models, and their role in emotion regulation, are shaped by parent-child interactions. If a child is helped to detect feelings accurately and to act appropriately on them, he or she develops what Main and her colleagues called a more *coherent* mind, which is reflected eventually in coherent, unobstructed, effective communication about emotions and close relationships. If a child is forced to suppress and deny feelings, or encouraged to amplify them to gain attention, he or she develops one of two major kinds of incoherent mentation and discourse. Finally, if a child finds that approaching a parent for support results in extreme, if momentary, distress to the parent, the child may become disorganized and disoriented, which can lead to dissociation or passivity in the face of distress. In all cases, internal working models and externally communicated thoughts about attachment are closely related.

ATTACHMENT RESEARCH CONSIDERED FROM A WORKING-MODELS PERSPECTIVE

Since Ainsworth and her students first showed how to identify reliable individual differences in the quality or form of attachment, hundreds of individual-difference studies have been conducted. In this section, we recount some of the highlights, focusing particularly on findings related to the internal working-models construct. Within each section, studies are reviewed in age-related clusters, beginning with studies of infants and children, and ending with studies of adults.

Anxious-Ambivalents

Infants and Children. Anxious-ambivalent infants are vigilant concerning their caregiver's presence or absence, preoccupied with the caregiver's behavior, and very upset when the caregiver disappears for a few minutes. Upon reunion, these infants seem angry and difficult to soothe. Home and laboratory observations of the caregivers' actual behavior reveal that it is "inconsistent, hit-or-miss, or chaotic" (Sroufe et al., 1993, p. 320). Theoretically, anxious-ambivalent children are preoccupied with their attachment figures and are quick to cry or express anger because these reactions have been associated in the past, at times (on a partial reinforcement schedule), with success in attaining the desired attention and contact. Anxious-ambivalent children are relatively poor independent problem-solvers and, once in school, become overly dependent on teachers. In peer relations, such children are subject to victimization by other children, especially avoidant ones (Troy & Sroufe, 1987). When asked during middle childhood to draw a picture of their family, anxious-ambivalent children produce drawings characterized by vulnerability (Fury, 1993; Kaplan & Main, 1985). By age 10 or 11, anxious-ambivalent children are less skilled in peer relations than secure children and exhibit negative biases and anxieties when discussing peer relations (Elicker et al., 1992).

Adults. Anxious-ambivalent adults (also referred to as *preoccupied*, or *preoccupied with attachment*) are obsessed with romantic partners, suffer from extreme jealousy (Carnelley & Pietromonaco, 1991; Collins, 1994; Hazan & Shaver, 1987), and report a high breakup rate (especially in relationships with anxious-ambivalent partners) (Hazan & Shaver, 1987; Kirkpatrick & Hazan, 1994; Shaver & Brennan, 1992). More often than people with other attachment styles, they break up with their partner and then get back together again (Kirkpatrick & Hazan, 1994). They are excited about leaving home and going to college but become socially dissatisfied and lonely after the first semester (Hazan & Hutt, 1993). They have relatively low and perhaps unstable self-esteem (Collins & Read, 1990; Feeney & Noller, 1990), prefer to work with others but feel unappreciated and misunderstood at work, and tend to daydream about success and slack off after receiving praise (Hazan & Shaver, 1990). They become very emotional under stress and hence are forced to use emotion-focused coping techniques (Mikulincer, Florian, & Weller, 1993). They describe parents as intrusive and unfair, which is perhaps their interpretation of what infancy researchers call *inconsistent* parenting (Hazan & Shaver, 1987; Rothbard & Shaver, 1994).

Preoccupieds worry about rejection during interactions; indiscriminately self-disclose too much, too soon; and approve of others who self-disclose freely (Mikulincer & Nachshon, 1991). They tend to be argumentative,

intrusive, and overcontrolling (Kunze & Shaver, 1994). They often assert their own feelings and needs without adequate regard for their romantic partner (Daniels & Shaver, 1991). Preoccupied mothers are more likely than their secure or avoidant counterparts to neglect their children (Crittenden, Partridge, & Claussen, 1991). They are both consciously and unconsciously afraid of death, which they seem to conceptualize as "the ultimate separation" (Mikulincer, Florian, & Tolmacz, 1990).

In summary, what begins with attempts to keep track of and hold onto an unreliable caregiver during infancy leads to an attempt to hold onto teachers, peers, and romantic partners, but to do so in ways that frequently backfire and produce more hurt feelings, anger, and insecurity. (This tendency toward self-fulfilling prophecy is characteristic of all of the major attachment patterns.)

Avoidants

Infants and Children. Ainsworth et al. (1978) included only one avoidant category in their typology of infant attachment patterns, but Main and Solomon (1986, 1990) later noted that many attachment researchers had left a certain proportion of infants unclassified because their behavior did not fit any of Ainsworth's three scoring prototypes. These disorganized/disoriented infants were marked by "sequential and simultaneous displays of contradictory behavior patterns," "undirected, misdirected, incomplete, and interrupted movements and expressions," "stereotypies, asymmetrical movements, mistimed movements, and anomalous postures," "freezing, stilling, and slowed movements and expressions," "apprehension regarding the parent," and "disorganization or disorientation" (Main & Solomon, 1990, pp. 136-140). Most attachment studies have not included this new category, so we generally restrict our summary of avoidance to Ainsworth's avoidant category. When there is evidence for all four categories, however, we draw a distinction between two kinds of avoidance—(a) dismissing of attachment and (b) disorganized or fearful. The four-category adult attachment typology recently proposed by Bartholomew (1990; Bartholomew & Horowitz, 1991) includes a similar distinction between dismissing and fearful adults.

Dismissingly avoidant infants seem to become prematurely independent and self-reliant after being repeatedly rebuffed in their attempts to seek contact or reassurance. (Their mothers appear to dislike close body contact and in some cases wish they had not had a child; Main, 1990.) When left alone in the Strange Situation, avoidant infants seem to suppress feelings of anxiety (while exhibiting elevated heart rate [Sroufe & Waters, 1977]—perhaps a sign of hidden anxiety) and do not seek contact with their mother upon reunion. In preschool, peer pairs containing at least one avoidant member form relationships that are less deep (less characterized by mutuality,

responsiveness, and affective involvement) and more hostile than relationships involving children with other attachment styles (Pancake, 1989). Avoidant children are more often aggressive toward other children and more likely to receive angry rebukes from teachers. When asked during middle childhood to draw a picture of their family, avoidant children produce drawings characterized by stiff figures with rigid postures and missing arms or feet and a lack of individuation of and distance between family members (Fury, 1993; Kaplan & Main, 1985; Sroufe et al., 1993). By age 10 or 11, avoidant children have the worst peer relations of the original three attachment groups, exhibiting negative perceptual biases equal to those of anxious-ambivalent children and also seeming not to understand social relations very well.

Disorganized, or fearful, children lack self-confidence and have low self-worth (Cassidy, 1988; Jacobsen, Edelstein, & Hofmann, 1994). They suffer from attentional difficulties, being "restless" and "easily losing interest" (Jacobsen et al., 1994). They are not adept at perspective taking and perform more poorly on concrete operational reasoning tasks than secure and dismissingly avoidant children (Jacobsen et al., 1994). By the age of 6, some disorganized children appear controlling and parental toward their own parents (Main & Cassidy, 1988). Disorganized infants and children are more likely than members of the other attachment groups to be the offspring of emotionally disturbed parents (Cicchetti, Cummings, Greenberg, & Marvin, 1990; Cummings & Cicchetti, 1990; Main & Hesse, 1990) and to be victims of parental abuse and neglect (Carlson, Cicchetti, Barnett, & Braunwald, 1989; Crittenden, 1988; Egelund & Sroufe, 1981).

Adults. In adult studies based on a three-category typology similar to Ainsworth's, which probably involves placing a mixture of dismissing and fearful individuals into the avoidant category, avoidants have proved to be relatively uninvested in romantic relationships (Shaver & Brennan, 1992); they have a higher breakup rate than secures (Hazan & Shaver, 1987; Kirkpatrick & Davis, 1994; Shaver & Brennan, 1992) and grieve less following a breakup (Simpson, 1990), although they often feel lonely (Hazan & Shaver, 1987). They prefer to work alone and use work as an excuse for avoiding close relationships (Hazan & Shaver, 1990). Avoidants describe their parents as rejecting and somewhat cold (Hazan & Hutt, 1993; Hazan & Shaver, 1987; Rothbard & Shaver, 1994), report having poor relationships with parents while attending college (Hazan & Hutt, 1993; Rothbard & Shaver, 1994), and are more likely than secures or anxious-ambivalents to have an alcohol-abusing parent (Brennan, Shaver, & Tobey, 1991). They tend to withdraw from their romantic partners (i.e., avoid care and support) when experiencing stress (Simpson, Rholes, & Nelligan, 1992), attempt to cope with stress by ignoring or denying it (Dozier & Kobak, 1992), and later

exhibit psychosomatic symptoms (Hazan & Hutt, 1993; Mikulincer et al., 1993). Avoidants tend to feel bored and distant during interactions—another sign of low involvement or denial of interest (Tidwell, Shaver, Lin, & Reis, 1991). They do not like to share intimate knowledge about themselves and do not approve of others who self-disclose freely (Mikulincer & Nachshon, 1991). Avoidants are somewhat pessimistic and, in fact, may appear cynical about long-term relationships (Carnelley & Janoff-Bulman, 1992). They claim not to be consciously afraid of death but reveal unconscious death anxiety when responding to TAT pictures (Mikulincer et al., 1990).

In studies that draw a distinction between dismissingly and fearfully avoidant adolescents and adults, dismissing avoidants have high self-esteem, are cold, competitive, and introverted (Bartholomew & Horowitz, 1991). They are notably not anxious, depressed, or dependent (Bartholomew & Horowitz, 1991). Dismissings are defensively autonomous and prefer not to rely on others for emotional support (Bartholomew, 1993). Fearful avoidants, on the other hand, are introverted and unassertive, and tend to feel exploited (Bartholomew & Horowitz, 1991). They lack self-confidence and are self-conscious (Bartholomew, 1993). On the whole, they feel more negative than positive about themselves (Clark, Shaver, & Calverley, 1994). Compared to the other three groups, fearfuls are anxious, depressed, and hostile (Bartholomew & Horowitz, 1991; Carnelley, Pietromonaco, & Jaffe, 1994; Dutton, Saunders, Starzomski, & Bartholomew, 1994; Shaver & Brennan, 1992). They are self-defeating, report a large number of physical illnesses, and (more often than other groups) exhibit indicators of borderline personality (Alexander, 1993; Dutton et al., 1994). Fearful avoidance in adults has been positively correlated with reports of severe punishment and abuse during childhood (Clark et al., 1994) and, in turn, with dominating, isolating, and emotionally abusing one's spouse during adulthood (Dutton et al., 1994).

In summary, what begins with attempts to regulate attachment behavior in relation to a primary caregiver who does not provide contact comfort or soothe distress tends to become dismissing avoidance—defensive self-reliance accompanied by somewhat cool and distant representations of close relationship partners and cool, sometimes hostile, relations with peers. In contrast, what begins as conflicted and disorganized/disoriented behavior in relation to a frightening or distressed caregiver may translate into desperate, ineffective attempts to control the behavior of romantic partners in adulthood.

Secures

Infants and Children. Secure infants appear confident both in themselves and in the availability of their caregivers (Elicker et al., 1992). When reunited with a caregiver, they readily seek contact, are easily soothed, and quickly

return to exploring the environment (Ainsworth et al., 1978). Secure children are generally happy (LaFreniere & Sroufe, 1985), easy-going, cooperative (Arend, Gove, & Sroufe, 1979), empathic (Sroufe & Fleeson, 1988), and creative (Elicker et al., 1992). They seem to work well with parents and teachers, and in problem-solving situations can comfortably accept direction and guidance (Arend et al., 1979; Matas, Arend, & Sroufe, 1978; Sroufe & Fleeson, 1988). Secures tend to get along well with peers and enjoy close friendships (Elicker et al., 1992; Pancake, 1989; Sroufe et al., 1993). Family pictures drawn by secure children show individuated, complete figures that are grounded or centered on the page. The figures tend to be appropriately spaced, showing a natural proximity among family members. Secures also include other aspects of family life in their drawings, such as bicycles, pets, and trees (Fury, 1993; Kaplan & Main, 1985; Sroufe et al., 1993).

Adults. Secure adults are highly invested in relationships and tend to have long, stable ones characterized by trust and friendship (Collins & Read, 1990; Hazan & Shaver, 1987; Keelan, Dion, & Dion, 1994; Kirkpatrick & Davis, 1994; Kirkpatrick & Hazan, 1994). They describe their parents favorably (although in balanced and realistic terms) and have good relationships with them while attending college (Hazan & Hutt, 1993; Hazan & Shaver, 1987; Levy, Blatt, & Shaver, 1994; Rothbard & Shaver, 1994). Secures have relatively high self-esteem and high regard for others (Collins & Read, 1990; Feeney & Noller, 1990), and feel well liked by coworkers (Hazan & Shaver, 1990). When stressed, secures cope by seeking social support (Mikulincer et al., 1993), and they support their romantic partner when the partner is under stress (Simpson et al., 1992). They seek integrative, mutually satisfactory resolutions to conflicts (Pistole, 1989), self-disclose appropriately, and like other people who self-disclose (Mikulincer & Nachshon, 1991). They often adopt parents' religious views and imagine God to be a warm, trustworthy attachment figure (Kirkpatrick & Shaver, 1990, 1992). They are relatively unafraid of death, both consciously and unconsciously (Mikulincer et al., 1990).

Overall, it seems that secure infants, children, and adults have mastered the complexities of close relationships sufficiently well to allow them to explore and play without needing to keep vigilant watch over their attachment figures and without needing to protect themselves from their attachment figure's insensitive or rejecting behaviors.

THE CONTENT AND STRUCTURE OF WORKING MODELS

Given the extensive evidence concerning differences between three or four major attachment styles, how can these differences be understood in terms of

internal working models? In the sections that follow, we address this question by drawing on attachment theory as well as more general theoretical and empirical work in social psychology dealing with the nature of cognitive representations.

What are Working Models?

Working models are cognitive representations of self and others that evolve out of experiences with attachment figures and are concerned with the regulation and fulfillment of attachment needs. Early working models organize a child's memory about attempts to gain comfort and security, and the typical outcomes of those attempts (Main et al., 1985). Given a fairly consistent pattern of caregiving throughout childhood and adolescence, models are expected to become solidified through repeated experience and increasingly become a part of the child's developing personality. Thus, what begin as representations of specific relationships and specific partners result in the formation of more abstract, generalized representations of self and social world.

Internal working models of attachment are similar in many ways to other cognitive structures studied by social psychologists, such as schemas, scripts, and prototypes. Like all such cognitive structures, working models are not directly observable; they are hypothetical constructs presumed to be stored in long-term memory. Internal working models are organized representations of past behavior and experience that provide a framework for understanding new experiences and guiding social interaction. Like other social schemas, working models help individuals fill gaps in the information available in particular social situations (Jones, 1990).

Although working models share many features with other social-cognitive structures, they are also unusual in certain respects. First, unlike traditional approaches to schemas, which tend to focus on factual knowledge and verbal propositions, the attachment-theoretical approach to working models places greater emphasis on the representation of motivational and behavioral tendencies. Social psychologists have tended to focus on conscious cognitions that can be easily articulated, but working models of attachment contain unconscious elements that are difficult to verbalize. Thus, internal working models of attachment are not simply "cognitive," if cognitions are assumed to be "cool," verbal, and descriptive. Instead, cognitive aspects of working models are closely interwoven with wishes, goals, concerns, psychological defenses, and behavioral tendencies. This view of working models is consistent with more general theories of personality and mental representation. For instance, goals and behavioral strategies have been described as fundamental elements of the self-concept (e.g., Emmons, 1989; Markus & Ruvolo, 1989; Markus & Wurf, 1987) and are viewed as essential to understanding the

cognitive basis of interpersonal interaction and self-regulation (e.g., Cantor & Kihlstrom, 1985; Miller & Read, 1991; Pervin, 1983; Trzebinski, 1989).

Working models should not be viewed simply as a set of organized beliefs or propositions about oneself and others. Collins and Read (1994) suggested that working models contain four interrelated components: (a) autobiographical memories, (b) beliefs and attitudes, (c) goals and motives, and (d) behavioral strategies. The first component, *autobiographical memories* of attachment experience, should include not only memories of specific interactions and concrete episodes, but also constructions placed on those episodes, such as appraisals of experience and explanations of one's own and others' behavior. The second component of working models is a rich set of attachment-related *beliefs, attitudes, and expectations* about self and others. This social knowledge is presumed to be fairly general, abstracted largely from concrete experiences, and organized into units or schemas. In addition, this information is thought to be independent of when and how it was acquired. A third component is *attachment-related goals and motives* (or wishes). Although the attachment system serves the universal goal of maintaining felt security, a person's history of achieving or failing to achieve this goal is expected to result in a characteristic set of social and emotional needs, motives, wishes, and defenses. For example, individuals with different attachment styles differ in their motivation to seek intimacy, avoid rejection, deny feelings of vulnerability, maintain privacy, and so on. The final component of working models is a set of *behavioral plans and strategies* aimed at the attainment of particular goals. These generalized strategies are based on repeated sequences of interaction with attachment figures and are apt to be stored in the form of "if-then" production rules (Anderson, 1982; Kihlstrom & Cantor, 1983) that are automatically evoked in response to particular situational cues or emotional experiences (Crittenden, 1990; see also Stern, 1985).

A second way in which working models of attachment differ from other social-cognitive structures is that working models are expected to be more heavily affect-laden than the schemas typically studied in social psychology. Although some social-cognition scholars are now recognizing the affective aspects of social schemas (e.g., Andersen & Cole, 1990; Clark, Pataki, & Carver, this volume; Fehr & Baldwin, this volume; Fiske & Pavelchak, 1986; Fitness, this volume; Greenwald & Pratkanis, 1984), little attention has been paid to the representation of affect beyond the assumption that schemas vary in their positive or negative valence. As noted earlier, working models are formed and elaborated through emotional communication, and much of their content concerns the regulation of emotions and the fulfillment of emotional needs. Hence, emotions are likely to be triggered automatically when models are activated (Fiske & Pavelchak, 1986), which helps to explain attachment-style differences in social perception, subjective emotional experience, and behavioral expression of emotion.

A third way in which working models differ from other social schemas is that they are explicitly interpersonal and relational in nature. Internal working models contain images of self and others, not in isolation, but in highly interdependent situations. Fortunately, there has recently been a general shift toward a more relational treatment of social schemas. For example, Baldwin (1992) advocated the notion of *relational schemas*, which he defined as cognitive structures that represent regularities in interpersonal relating. The elements of the relational schema include a self-schema representing the way in which the self is experienced in a particular relationship, a schema for the other person, and an interpersonal script that describes the typical interaction patterns between self and other. Along similar lines, Ogilvie and Ashmore (1991) emphasized the importance of understanding the self-concept, not in isolation, but in relation to particular others. They suggested that information about the self is stored in "self-with-other units" that contain personal qualities that characterize an individual when he or she interacts with a particular other person.

A final way in which working models differ from other knowledge structures is that they are likely to be broader, more multidimensional, and more complex than other social representations. Attachment working models include schematic features, scriptlike features, attitudinal features, and so on. Moreover, these various features are apt to be encoded in memory in a variety of forms, including the forms Tulving (1985) labeled *episodic* (autobiographical), *semantic* (pertaining to general knowledge), and *procedural* (referring to actions, strategies, and skills). As noted by Crittenden (1990), one implication of this complexity is that different aspects of working models may be stored separately and may contain different representations of the same experience. Some individuals will have difficulty coordinating the different memory systems and may be at risk for developing the kinds of inconsistencies noted by Bowlby between the various elements within their models. Moreover, certain aspects of memory will be more readily available than others to conscious awareness and examination. For example, one's repertoire of defensive and behavioral strategies is likely to be represented in the form of procedural knowledge that is relatively inaccessible to awareness.

Attachment Representational Networks

There is a strong tendency to discuss working models of the self and others in the singular, as if individuals could have only one model of each kind. There are good reasons to question this assumption, however. First, as documented earlier in the present chapter, individuals can maintain separate and somewhat independent models of attachment. Not only did Bowlby claim this based on his clinical experience, but developmental psychologists have shown that an infant's attachment style with one parent does not strongly predict his or her style with the other parent (Bridges, Connell, & Belsky, 1988; Lamb, 1978;

Main & Weston, 1981; see Fox, Kimmerly, & Schafer, 1991, for a review). This suggests that young children develop a separate working model for each parent. Second, because adult representations of attachment are based on a variety of relationship experiences, they should be more complex and differentiated than childhood models. For example, adults are likely to have somewhat different working models for their roles as son or daughter, spouse, and parent (Bretherton, Biringen, Ridgeway, Maslin, & Sherman, 1989; Crittenden, 1990; George & Solomon, 1989). Consistent with this line of thinking, in one study that directly compared representations of attachment to peers with representations of attachment to parents, there was significant overlap between the two but considerable distinctness as well (Bartholomew & Horowitz, 1991, Study 2). Finally, it is unreasonable to assume that a single, undifferentiated model can effectively guide the full range of attachment-related behavior in adulthood. Multiple models of attachment provide the flexibility necessary for individuals to function adaptively and to satisfy attachment needs across diverse circumstances and relationships.

One solution to the problem of multiple models is to view attachment representations as a multifaceted collection, or *network*, (Collins & Read, 1994). Based on studies of the general nature of mental representation (Cantor & Mischel, 1979; Holland, Holyoak, Nisbett, & Thagard, 1986), it is useful to think of this network as hierarchically organized. At the top of the hierarchy are the most *general* representations of self and others, abstracted from a history of relationship experiences with caregivers and other important attachment figures. These abstract, generalized models can apply to a wide range of relationships and situations, although they may not apply to any one of them very well. Further down in the hierarchy are more specific models that correspond to particular kinds of relationships (e.g., parent-child relationships, friendships, love relationships), and lowest in the hierarchy are models corresponding to particular partners (e.g., my husband John, my baby daughter Chris). Models higher in the hierarchy fit a wide range of situations but are often misleading guides to behavioral responses because they are not closely matched to the details of particular situations. In contrast, models lower in the hierarchy are apt to provide a better fit to certain relationships or situations, although at the cost of failing to generalize widely.

Working models differ in ways other than abstractness. Some are more complex and elaborated than others; some may be positive, some negative; some may be fairly clear and internally consistent, others may be relatively inconsistent and incoherent; and some may be more central or important in the network, whereas others are more peripheral. Central or core models are probably the most elaborated and densely connected to other knowledge structures. For example, given their primacy and extended history, models of parent-child relationships are likely to be central and deeply embedded in the

network structure. Working models of other major attachment figures (such as a spouse) should also be highly elaborated and differentiated.

It is important to consider the dynamic and interdependent nature of the components of the attachment network. As individuals move in and out of relationships, there is a continual interchange between general and specific levels of the hierarchy. For example, in infancy and early childhood, working models begin as representations of specific relationships with primary caregivers. Over time, additional experiences result in the formation of more abstract, general models of self and others (Bowlby, 1973) that then influence the construction of more specific models in future relationships. In this way, models that develop early in one's personal history have the potential to shape the construction of all subsequent models. By the same token, new relationship-specific models provide opportunities for the continued revision and updating of more general models. Although different models may be somewhat distinct, they are probably linked through a rich set of associations and are likely to share many elements. Thus, we would expect a fair amount of overlap between various models of self and other. In fact, we might speculate that images of the self are more consistent across different models than images of others. This may be partly due to a motivation to develop a coherent self-image and partly to the greater stability in behavior and experience within an individual as opposed to between individuals.

Although the norm may be toward the development of an increasingly complex and differentiated set of attachment representations, there may be some important individual differences in the structure of people's representational networks. Crittenden (1990) distinguished among three important meta-structures. The first and most simplified structure is an internal representational model that gets applied to all relationships. This meta-structure impairs interpersonal functioning because it requires that all relationships be distorted to fit a single model. This organization may be characteristic of abusing and neglecting mothers and their children (Crittenden, 1988). The second structure is characterized by multiple, unrelated models that permit the representation of unique aspects of relationships but preclude the development of a coherent sense of self. This structure may be characteristic of the preoccupied and fearfully avoidant attachment styles. The third, most complex, and presumably most adaptive meta-structure includes an integrated generalized model along with differentiated relationship-specific submodels. This kind of structure is a hallmark of secure attachment.

Which Model Will Be Activated and Used?

The idea that individuals possess a network of attachment representations is consistent with cognitive theories of the self that view the self as a dynamic collection of self-representations. For example, Markus and Wurf (1987)

argued that the self-concept is best viewed as a continually active, shifting array of accessible knowledge. At any one time, only some subset of the potentially available representations (the working self-concept) is activated and invoked to regulate or interpret an individual's behavior. This general approach provides a useful framework for conceptualizing the dynamic nature of attachment representations: Not all representations that are part of the complete attachment network will be accessible at any one time. How, then, can we predict which model, or model components, will be activated and used to guide social perception and behavior?

As summarized by Collins and Read (1994), activation is likely to depend on characteristics of the models themselves, features of the prevailing social situation, and the individual's current motives and mood. Some models will be more readily accessible than others because of their density or strength. The strength of a model will depend on variables such as the amount of experience on which it is based, the number of times it has been applied in the past, and the density of its connections to other knowledge structures. This implies that models based on major attachment figures (such as parents and spouses) will be easily activated and chronically accessible (Bargh, 1984; Higgins, King, & Mavin, 1982).

Whether or not features of the situation match features of the working model will also affect its accessibility. Among the features that should be important are characteristics of the interaction partner and the nature of the relationship. For instance, characteristics of the interaction partner such as gender and physical appearance should be important cues to model-matching. Consistent with this view, Collins and Read (1990) showed that in heterosexual romantic relationships, one's model of the opposite-sex parent is a better predictor of aspects of the relationship than is the model of the same-sex parent. Presumably, the nature of one's current relationship should also be an important cue. For example, models based on relationships with parents may be more relevant when interacting with one's children than when interacting with peers. Such models may also be more relevant in situations that bear some resemblance to parent-child interactions—for example, in situations in which one is in a position of relatively low power or status. This functional specificity of working models was illustrated in a study by Kobak and Sceery (1988) in which young adults' representations of their childhood experiences with parents (as measured by the Adult Attachment Interview; George, Kaplan, & Main, 1985) predicted the extent to which the young adults perceived that social support was currently available from their family, but did not predict their judgments about available support from friends.

An individual's currently active goals and mood states will also affect which model gets activated and used. Some models will be more or less automatically activated in response to specific situational stimuli or appraisals. Others will be recruited or invoked in response to whatever motives the individual is

striving to fulfill. Some emotion-specific models are probably activated automatically in response to particular emotional appraisals. For example, in the heat of an argument with his romantic partner, a man may suddenly feel threatened or hurt in ways similar to what he felt earlier in life in interactions with his mother. These time-worn responses may trigger an angry outburst, aimed as much at the man's working model of his mother as it is at his physically present partner: "You are constantly spying on me, intruding into my personal thoughts and space; you don't give me room to breathe!" Later, in a mood of calm reflection on the partner's actual qualities, such an outburst can seem remarkably inappropriate.

As the discussion so far makes clear, attachment researchers need to be more precise in specifying which aspects of the attachment representational network are under study at a particular time. Just as it is incorrect to speak of a single model of self or others, it may be incorrect to speak of a person's single attachment style. Although this possibility has not been made explicit in the literature, it is already reflected in the various approaches used to measure adult attachment. Attachment styles have been measured with respect to memories and representations of childhood relationships with parents (Main et al., 1985), overall experiences with intimate peers (Bartholomew & Horowitz, 1991), general orientations toward romantic relationships (Collins & Read, 1990; Hazan & Shaver, 1987), and attachment quality within a single current romantic relationship (Kobak & Hazan, 1991). These approaches differ in the particular content they target (e.g., parents, peers, romantic partners), and in the general/abstract versus specific/concrete nature of that content (e.g., relationships in general versus one specific relationship). The varying methods of measuring adult attachment may activate different aspects of the attachment representational network. They also assess different aspects of particular models. For example, self-report methodologies (e.g., Hazan & Shaver, 1987) may assess surface-level beliefs and motives which individuals can consciously experience and articulate. In contrast, inferential interview methodologies (e.g., Bartholomew & Horowitz, 1991; George et al., 1985) may reveal unconscious, procedural aspects of working models, as well as their structural features such as inconsistency and incoherence. Thus, a more detailed understanding of working models will facilitate the integration of research using different methodologies and may help explain inconsistencies in attachment categorizations that occur across different measurement instruments, or even over time using the same instrument.

ATTACHMENT AND EMOTION REGULATION: WORKING MODELS IN ACTION

To this point, we have argued that internal working models are cognitive structures, some of which are likely to be automatically activated whenever

attachment-related events occur. Once activated, the models shape cognitive processing of social information, the appraisal of important changes in the internal and external environments, and the selection of social behaviors. We need not assume that people are consciously directing these processes or are even aware of them; in fact, we suspect that much of this psychological system operates automatically (Bargh, 1984; Fletcher & Thomas, this volume)—that is, spontaneously, with little effort, and outside of awareness. One way to illustrate the effects of working models is to examine their role in emotion regulation.

The goal of the attachment system can be described either in terms of behavior or in terms of emotion regulation. Bowlby tended to focus on behavior, because he was primarily interested in the biological function of attachment during infancy: protection from predation and other dangers, through reliance on a concerned caregiver. When studying infants, a scientific observer necessarily has only indirect, inferential access to a research subject's feelings. Sroufe and Waters (1977) argued, however, that proximity-seeking behavior is guided by a search for a particular emotional state, felt security. Actually, the range of attachment-related emotions is quite large and includes fear of abandonment, jealousy, the joy of reunion, anger at separation, and sadness and grief following loss. What the attachment research field needs, therefore, is a cognitively oriented model of emotion and emotion regulation that overlaps with, or includes a plausible role for, internal working models.

Many contemporary emotion theorists (Ekman, Frijda, Lazarus, Roseman, and Weiner, to name a few), working partly on separate tracks and partly in response to each other, have arrived at what Fischer, Shaver, and Carnochan (1990) called the *consensus* theory of emotion (i.e., the theory that most current investigators accept, at least to a large extent). The essential features of the theory, shown in Fig. 2.1, are (a) wishes, goals, or concerns; (b) a notable change in the internal or external environment; (c) an appraisal of the change in relation to salient wishes or concerns; (d) emotion-specific action tendencies and the concomitant physiological changes; (e) emotional

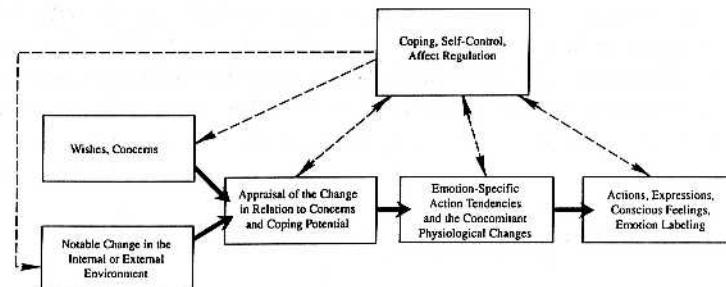


FIG. 2.1. A diagrammatic representation of the consensus theory of emotion.

behavior and self-labeling; and (f) coping, or self-control, efforts. Each component of the process can be affected by attachment history, as explained here.

Wishes, Concerns

Imagine seeing your romantic partner flirting with one of your colleagues. Would you care? What emotion would you experience—panic, amusement, jealousy, admiration? The occurrence of any emotion would indicate that you care. According to the consensus theory of emotion, if you had no wishes, no preferences, and no investments, your partner's flirtations would be just another cognitively acknowledged event.

According to attachment theory, what an infant cares about is the comfort and safety provided by a familiar caregiver (hence proximity-seeking behavior) and the pleasures of exploring and mastering novel environments. Bowlby and Ainsworth envisioned a dynamic reciprocity between these two desirable states—attachment and exploration. Interestingly, in a series of studies of adult psychotherapy sessions, Luborsky and his colleagues (see Luborsky & Crits-Christoph, 1990), working almost independently of contemporary emotion theorists, noticed that the core themes in the stories told in these therapy sessions include a wish on the part of the client, a reaction by another person, and the client's emotional reaction to that person's reaction. For example, a client, David, wishes that Helen would admire his artwork (thereby admiring him); she doesn't, so he feels angry or hopelessly disappointed. When all such wishes are coded from therapy tapes or transcripts, they fall into only two large clusters: the wish to be close and accepting and to be loved and understood (both of which Luborsky called "being close") and the wish to assert oneself and be independent ("being independent"). Of course, these themes recur throughout psychology: for example, Bakan's (1966) agency and communion, Mahler's (Mahler, Pine, & Bergman, 1975) symbiosis and separation-individuation, and Baxter's (1988) connectedness versus autonomy dialectic.

When pursuing these two universal goals, individuals with different attachment styles, as described earlier in this chapter, presumably harbor somewhat different wishes and concerns. Preoccupied people, for instance, wish to be very close to others, perhaps in some cases to merge psychologically with them. Dismissing individuals wish for independence and are concerned when relationship partners get too close. Fearful people wish they could be close but are concerned about being hurt or abandoned. Secure people wish for an intimacy that supports and leaves room for autonomy.

Notable Events or Changes in Events

A wish by itself does not cause an emotion; an emotion is caused (again, according to the consensus theory) by the appraisal of notable events or

changes in events (e.g., noticing that your partner is flirting) in relation to wishes, goals, or concerns. Although most of the "action" in this part of the model is due simply to the fact that the external world and a person's internal environment (hunger, pain, unbeckoned thoughts, etc.) are constantly in flux, there are also individual differences in what is regarded as notable, what is considered most likely to be threatening, and so on. Viewed in terms of attachment dynamics, preoccupieds are highly vigilant about possible rejection, neglect, or abandonment, and so are likely to notice their partner's whereabouts and interests in other people, which primes them for frequent feelings of anxiety and jealousy. Dismissings are less likely to monitor the presence or whereabouts of their relationship partners and hence are less likely to become emotional. Less is known about fearful avoidants, but we suspect that they monitor their partners' comings and goings while attempting to suppress the resulting emotions (suppression being a form of emotion regulation; see later). Secures probably notice their partners' actions but generally appraise them in nonthreatening ways, thereby producing positive or neutral rather than negative emotional reactions. The same kind of analysis could be focused on notable changes in the self. Dismissings, for example, attempt to ignore their own emotional reactions; preoccupieds are overly sensitive to their own reactions.

Appraisal

Emotion results from an appraisal of events in relation to a wish or goal. David wants Helen to admire his work; he eagerly studies her reaction and appraises it as indicating that his wish is not fulfilled—she doesn't seem to care. Suppose David had perceived things differently: Helen's lack of interest in his work means nothing about her feelings for him. Such changes in the appraisal process make all the difference for the resulting emotion. In the study of attachment, the role of appraisals can most easily be seen in relation to anxious-ambivalent, or preoccupied, individuals. Their vigilance is an indication that they lean toward a particular interpretation: "He or she is leaving me, cares more for someone else, will lose interest if I don't make a scene." They easily become jealous because of this appraisal proclivity (Collins, 1994; Hazan & Shaver, 1987; Pietromonaco & Carnelley, 1994). Secure individuals also lean toward certain kinds of appraisals: "Other people are trustworthy, I am likeable, I don't need to be unduly vigilant" (Hazan & Shaver, 1987). Lying behind dismissing avoidance there is probably a complex network of beliefs: "If I get too close, I am bound to be hurt; life is better when one doesn't risk deep involvement; life is safest when one relies on oneself." In other words, even though the defenses (coping strategies) of dismissing individuals are perhaps their most distinctive characteristic, the defenses are closely tied to beliefs and appraisals contained in internal working

models. What characterizes fearfuls is a model-based appraisal of the self as relatively helpless and hopeless, the kind of appraisal that generates sadness and depression.

Emotion-Specific Action Tendencies

According to the consensus theory (as spelled out, e.g., by Lazarus, 1991; Shaver, Schwartz, Kirson, & O'Connor, 1987), particular appraisals evoke particular emotions. For example, fear is elicited by a perceived threat to life or personal safety, including the threat of physical harm or social rejection. Sadness is caused by irrevocable loss or failure—the perception of harm already done. Anger stems from the appraisal that one's legitimate goals are being interfered with or one's legitimate status is being denied or demeaned. Joy arises from the appraisal of success or of being liked, loved, or appreciated. And so on. In other words, preceding each discrete emotion in most real-life situations is a particular, potentially identifiable constellation of appraisals that directly triggers the emotion (presumably because of innate neural circuits; Ekman, 1984; Panksepp, 1990). The emotion can be viewed as a functional, or at least generally functional, response to the events being appraised: preparation for fight or flight, abandonment of fruitless protest in the face of loss and failure, or consolidation of successful thoughts and behaviors following success.

According to the consensus theory of emotion, the link between appraisals and emotion-specific action tendencies is cross-culturally universal (Lazarus, 1991; Shaver, Wu, & Schwartz, 1992). Thus, attachment-related individual differences must be attributed to differences in wishes, appraisals, or defensive maneuvers—all aspects of internal working models—not to the link between appraisals, once made, and the consequent universal action tendencies.

Actions, Feelings, and Labels

If not interfered with by coping or defensive processes, emotional action tendencies and their physiological supports will be expressed in behavior and experienced or noticed in a variety of ways—facial expressions, vocal qualities, gestures, self-perception of autonomic changes, and self-labeling of emotional states. What Ekman (1984) called "display" rules can affect this process, as can what Hochschild (1983) called *emotion work*. These authors were thinking primarily about cultural and subcultural norms when they invented these terms (e.g., crying at funerals, smiling when one's photograph is taken, acting angry when working as a bill collector). But there are ideographic versions of these processes as well, including the suppression of feelings and expressions of vulnerability, and exaggerating one's feelings of jealousy. These personal feeling rules are, according to attachment theory, adopted in response to

certain patterns of parental behavior. If expressions of neediness and vulnerability result in rejection, as occurs in the early lives of avoidant children, a child learns to suppress those feelings. If such expressions result in the receipt of attention from an otherwise unreliable caregiver, an infant learns to exaggerate them, as can be seen in the case of anxious-ambivalence. If a caregiver seems to respond appropriately to whatever feeling is naturally expressed, an infant has no need to learn how to distort the expression and experience of emotion. The result is the coherent emotional discourse and coherence of mind characteristic of securely attached children.

Coping, Affect Regulation

Emotion can be regulated by the application of defenses and coping strategies at every point in the process diagrammed in Fig. 2.1. The "coping, self-control" box in the figure refers to the kinds of processes that psychoanalysts since Freud have called *defenses* and that contemporary researchers, following Folkman and Lazarus (1990), call *coping mechanisms*. These regulatory processes are indicated by dotted lines in Figure 1. Emotional outcomes can be altered by changing one's wishes or the degree to which wishes are allowed to become conscious, or they can be altered by failing to scan certain aspects of the environment or by attending to certain aspects more vigilantly. Appraisals can be altered in countless ways—by reinterpreting a partner's intentions or reassigning blame, by deciding that something that seemed threatening is actually benign, and so on. Emotional action tendencies and their expression can be suppressed or countered with opposing tendencies, and feelings can be ignored or labeled in a variety of ways. People with different attachment styles differ systematically in all of these respects.

An interesting example is provided by an experimental study by Lutkenhaus, Grossmann, and Grossman (1985), in which they analyzed the affective behavior of 3-year-olds who had been assessed in the Strange Situation with their mothers at 12 months of age. An unfamiliar adult visitor played a competitive game with the children while the children's emotional reactions to winning and losing were noted. The avoidant children looked sad during the game when they were losing, but they appeared to mask their sadness after the game, when they were talking with the experimenter. (Some even replaced sadness with smiles.) Children who were classified as securely attached at 12 months of age freely displayed their sadness to the experimenter after a losing effort. As stated by Cassidy (1992), "It is striking that this masking of true feelings of sadness is evident as early as 3 years of age. It is also striking that this pattern of masking emotions is used so readily with a new social partner, with someone with whom the child has no history of social interaction" (p. 17).

In summary, when viewed from the perspective of emotion-regulation

processes, internal working models of self and others can be seen to contain or play a role in all of the components in Fig. 2.1: wishes, attentional strategies, appraisal proclivities, action tendencies, distortions and mislabeling of feelings, defenses, and coping efforts. Attachment styles themselves can be viewed as organized complexes of emotion-regulation processes, observable manifestations of experience-based internal working models.

RESEARCH STRATEGIES FOR STUDYING INTERNAL WORKING MODELS

At present, there are relatively few studies that directly examine the content, structure, and functioning of working models. In this final section, we briefly review the ways in which these topics have been studied and might be productively studied in the future. Two broad areas deserve attention. The first concerns the contents and structure of working models. Like all cognitive structures, internal working models are not observable or directly measurable. The general research strategy, then, is to focus on observable responses that are presumed to be shaped by, and reflective of, mental representations.

In the developmental literature, researchers have typically drawn inferences about the content of working models from infants' responses to structured laboratory settings. In addition, a number of projective measures have been developed to examine attachment representations in school-aged children; these include story completion exercises (Bretherton et al., 1989) and family drawings (Fury, 1993; Kaplan & Main, 1985, 1989). Of course, the drawback of these procedures is the difficulty of arriving at unambiguous interpretations of responses.

In the adult literature, researchers have begun their exploration of working models by asking people to report on their attachment-relevant beliefs, attitudes, expectations, and motives (e.g., Collins & Read, 1990; Hazan & Shaver, 1987; Mongrain & Emmons, 1993; Shaver et al., in press). The self-concept literature offers additional research strategies which may be useful for exploring the structural features of working models. For example, there are techniques to measure the complexity of working models (Linville, 1985), the clarity or certainty of one's image of self and others (Campbell, 1990; Kerr & Clark, 1994), and the degree to which positive and negative images are either integrated or compartmentalized within particular models or across different models (Showers, 1992). In addition, response-time measures (Baldwin, Fehr, Keedian, Seidél, & Thomson, 1993; Fazio, 1986; Markus, 1977) may be helpful for examining the strength and accessibility of particular models or model-based appraisals.

One shortcoming of many of these techniques is that they are limited to

the aspects of working models that individuals can consciously observe and articulate. Thus, additional strategies are required to uncover unconscious or nonlinguistic components of working models. Slade (1993) inferred attachment-related defensive styles from Rorschach responses. Bartholomew (Bartholomew & Horowitz, 1991) and Main and her colleagues (1985) drew inferences about the nature of working models from interview protocols that focused not only on content but also on the coherence and quality of discourse. Other strategies include the recording of behavioral observations during laboratory interactions (e.g., Kobak & Hazan, 1991; Simpson et al., 1992) and the use of psychophysiological techniques to index nonconscious emotion-regulation strategies (e.g., Dozier & Kobak, 1992; Feeney & Kirkpatrick, 1994). Reponse-time methods, just referred to, can also be used to infer unconscious and automatic processes.

A second important topic for future research is the identification of the mechanisms through which working models operate. Although such mechanisms are only beginning to be studied in the adult attachment field, empirical work in social psychology more generally demonstrates that social cognition is heavily influenced by top-down, theory-driven processes in which existing goals, schemas, expectations, and attitudes shape the way people view new information (e.g., Bargh, 1984; Brewer, 1988; Devine, 1989; Eagly & Chaiken, 1993; Higgins et al., 1982; Markus & Sentis, 1982). Although much of this research involves thinking about strangers, the processes involved are increasingly being explored in the context of close relationships (e.g., Baldwin, 1992; Fletcher & Fitness, 1993; Holmes & Rempel, 1989; Planalp, 1985).

There is good reason to believe that internal working models will shape the way people construe their social world, and recent studies support this belief. In two laboratory studies, for example, Collins (1994) demonstrated that working models of attachment shape the way individuals explain and interpret events that occur in their relationships. Anxious adults, for example, tended to explain their partner's behavior in ways that reflect low self-worth, a lack of confidence in the partner's love, and low trust. In contrast, secure adults provided more benign explanations that tended to minimize the negative impact of the partner's behavior. The influence of working models on emotional responses was examined in a recent study by Pietromonaco and Carnelley (1994). In that study, adults with different attachment styles responded differently to a set of hypothetical relationship partners. Regardless of the partner's behavioral description, for instance, preoccupied subjects reported that they would feel more anxious and jealous in the imagined relationship. In a study by Dorfman Botens and Shaver (1994), college students with different attachment styles were asked to recall childhood emotional interactions with their mothers. Dismissing individuals recalled fewer emotional memories per unit time, and the events they

remembered tended to occur at much later ages than the events recalled by secure individuals. This study indicates that the defensive aspects of working models can be measured. In a study by Clark et al. (1994), college students were asked to describe the interpersonal qualities they exhibit in interactions with various relationship partners—mother, father, lover, same-sex friend, and so on. These qualities were then judged by the students to be positive, negative, or neutral, and to be central or peripheral to the self. Secure and fearfully avoidant individuals differed powerfully in the extent to which negative interpersonal qualities were portrayed as central to self-structure.

CONCLUDING COMMENTS

Reaching beyond his training in psychoanalysis and object relations theory, Bowlby incorporated seminal ideas from ethology, cybernetic control theory, and cognitive and developmental psychology. Ainsworth, working closely with Bowlby, showed that his theory could be tested—in preliterate cultures (1967), in U.S. homes, and most tellingly, in the laboratory Strange Situation. Ainsworth's characterization of stable individual differences in attachment patterns during infancy set the stage for a continually expanding body of research on attachment patterns in childhood, adolescence, and adulthood.

Both Bowlby and Ainsworth attributed the relative stability of attachment patterns to cognitive representations of self and others called internal working models. Although this concept has been stretched almost to the breaking point—incorporating not only the descriptive and evaluative aspects of ordinary scripts and schemas, but also the defensive and adaptive aspects of emotion regulation, characteristic relational behavior patterns, and patterns of exploration—it is still a mainstay of attachment theory and research. We have tried to show how the concept of internal working models can be differentiated, brought into contact with ideas and measurement techniques from experimental social psychology, and integrated with the reigning theory of emotion. Attachment theory has already inspired hundreds of interesting studies, and it will continue to inspire valuable research if its central construct, internal working models, can be clarified, rendered conceptually more sophisticated, and operationalized in some of the ways suggested by contemporary social cognition researchers. We hope this chapter points fruitfully in some of the right directions.

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