CHAPTER 7

Attachment Processes and Emotion Regulation

In this chapter we focus on the role of the attachment system in emotion regulation. Although Bowlby did not devote a great deal of attention to the nature of emotions per se (only a single brief chapter in Volume 1 of *Attachment and Loss* [1969/1982]), the subtitles of Volumes 2 and 3—*Separation: Anxiety and Anger* (1973) and *Loss: Sadness and Depression* (1980)—make clear that emotions were one of his primary concerns. He was interested in the causes and consequences of emotions aroused by attachment (e.g., love, joy), separation (anxiety, anger), and loss (sadness, despair). His theory was an attempt to explain how secure attachments help a person survive temporary bouts of negative emotion and reestablish hope, optimism, and equanimity, and how different forms of insecurity interfere with emotion regulation, social adjustment, and mental health.

In thinking about the implications of the attachment system for emotion regulation, we were guided by Shaver, Schwartz, Kirson, and O'Connor's (1987) model of the emotion process (Figure 7.1). In this model, the onset of emotion depends on a perceived change in the internal or external environment, especially an unexpected, surprising, or personally significant change. These changes are automatically, and often unconsciously, appraised in relation to needs, goals, and concerns. If the perceived changes are favorable to goal attainment, the resulting emotions are generally positive (i.e., hedonically positive in valence). If the changes are unfavorable, the resulting emotions are generally negative. The particular emotion that arises depends on the specific pattern of concerns and appraisals that get activated. When a specific appraisal pattern occurs, a corresponding emotion, including its evolutionarily functional action tendencies and physiological substrates (e.g., changes in attention, blood pressure, and muscle tension), follows automatically. These consequences can be manifested in thoughts, feelings, vocalizations, and actions; expressed both verbally and nonverbally; and measured in numerous ways.

Shaver et al. (1987) claimed that regulatory efforts can alter the emotion process. If there is no reason to postpone, dampen, redirect, or deny an emerging emotion, its action tendencies are automatically expressed in congruent thoughts, feelings, words, and actions. However, when there are other goals in play (e.g., social norms, personal standards, self-protective defenses) that make the experience, enactment, or expression of an emotion undesirable, regulatory efforts are exerted to alter, obstruct, or suppress the

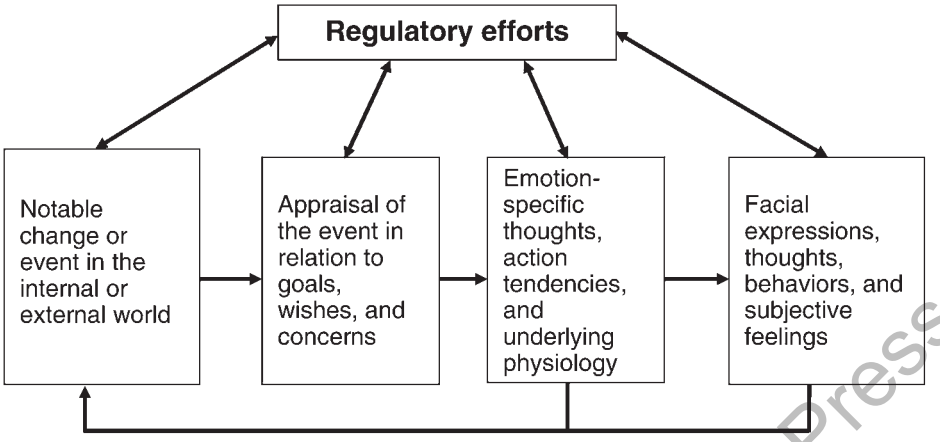

FIGURE 7.1. Flowchart model of the emotion process.

emotion and bring about a more desirable state or, at least, the outward appearance of a more desirable state. In this model, regulatory efforts can be directed at various parts of the emotion process, altering appraisals, concerns, action tendencies, arousal level, thoughts, facial expressions, and actions.

ATTACHMENT PATTERNS AND EMOTION REGULATION: THEORETICAL BACKGROUND

With Figure 7.1 in mind, it is possible to chart the effects of the attachment system on emotion regulation. As discussed in Chapter 3, the attachment system is, in itself, an emotion regulation device. Perceived threats automatically activate the system, which in turn causes the threatened individual to seek proximity to protective others (or to evoke mental representations of them) as a means of managing the threat and restoring emotional balance. Moreover, an available and responsive attachment figure facilitates coping with threats and attaining states of positive emotion, whereas the unavailability of such a figure disrupts coping and increases distress. In this way, attachment strategies are integral parts of a person's regulatory efforts, and individual differences in attachment-system functioning affect how people appraise emotion-eliciting events and regulate the generation, experience, and expression of emotions in behavior.

Attachment Security and Constructive Emotion Regulation

When regulating emotions, a secure person is able to direct most of his or her efforts to the emotion-*generation* process—changing the emotion-eliciting event (e.g., by resolving a conflict or solving a problem) or constructively reappraising it. Specifically, when a secure person encounters distress-inducing internal or external stimuli or events, he or she can engage in problem solving, planning, and cognitive reappraisal; place the negative event in perspective, making it seem less overwhelming; and mobilize support from people with additional resources or perspectives for solving the problem or reducing its stressful effects. The secure person is also more likely to have acquired self-soothing

skills, calming him- or herself with implicit and explicit emotion regulation techniques learned from security-providing attachment figures and maintaining attention on constructive alternatives rather than becoming a victim of rumination or catastrophizing. According to Gross (2015), these regulatory efforts are directed to modify the situational and cognitive antecedents of emotions in such a way that destructive, maladaptive aspects of emotional experience are prevented.

Theoretically, secure people's constructive approach to emotion regulation is a result of repeated interactions with attachment figures who are (or were) sensitive and responsive to bids for protection and support. During such interactions, secure people learn that seeking support usually results in protection, comfort, and relief. They come away with heightened confidence that turning to others is an effective way to cope. Moreover, such interactions heighten a secure person's positive expectations about the availability of social support (see Chapter 6), which makes it easy to ask for coping assistance when needed.

According to H. S. Waters and Waters (2006) and Mikulincer et al. (2009), this knowledge about support availability is organized around a relational prototype or "secure-base script," containing something like the following if–then propositions: "If I encounter an obstacle and/or become distressed, I can approach a significant other for help; he or she is likely to be available and supportive; I will experience relief and comfort as a result of proximity to this person; I can then return to other activities." Once activated, this script can, by itself, mitigate distress, promote optimism and hope, and help a person cope effectively with life's inevitable difficulties.

Supportive interactions with security-enhancing attachment figures also facilitate problem solving. Part of effective problem solving is recognizing that one's previous course of action was unsuccessful and must be changed if the problem is to be solved. Experiencing, or having experienced, attachment figures as loving and supportive allows secure people to revise erroneous beliefs and strategies without excessive self-doubt or self-criticism (see Chapter 6). In addition, secure people's self-confidence allows them to open their minds to new information and flexibly adjust their plans to deal realistically with whatever is happening at the moment (see Chapter 8). Believing that support will be available if needed, secure people can creatively explore a challenging situation while tolerating ambiguity and uncertainty.

Secure people can also reappraise situations, construe events in relatively benign terms, symbolically transform threats into challenges, maintain an optimistic sense of self-efficacy, and attribute undesirable events to controllable, temporary, or context-dependent causes. This foundation for constructive appraisals is sustained by deeply ingrained positive beliefs about self and world (see Chapter 6). While interacting with available and supportive attachment figures, secure individuals learn that distress is manageable and external obstacles surmountable.

Having managed emotion-eliciting events or reappraised them in benign terms, secure people rarely have to alter or suppress other parts of the emotion process. They make what Lazarus (1991) called a "short circuit of threat," sidestepping the interfering and dysfunctional aspects of emotions while benefiting from their functional, adaptive qualities. They can then remain open to their emotions, express and communicate feelings freely and accurately to others, and experience them fully without distortion. Moreover, they can expect emotional expression to result in beneficial responses from others. For individuals whose attachment figures have been available and responsive, expression of negative emotions has usually led to distress-alleviating support and guidance. According to Cassidy (1994), "the experience of security is based not on the denial of negative

affect but on the ability to tolerate negative affects temporarily in order to achieve mastery over threatening or frustrating situations" (p. 233).

This openness to emotional experiences is manifested in what Fonagy, Steele, Steele, et al. (1991) called self-reflective capacity: the ability to notice, think about, and understand mental states. According to Fonagy, Steele, Steele, et al. (1991), one of the major functions of a security-enhancing caregiver is "to reflect on the infant's mental experience and re-present it to the infant translated into the language of actions the infant can understand. The baby is, thus, [encouraged to feel that] the process of reflection was performed within its own mental boundaries" (p. 207). As reviewed in Chapter 4, this process has been studied with the help of the AAI.

Avoidant Attachment and the Inhibition or Suppression of Emotional Experience

People with an avoidant attachment style cannot risk allowing emotion to flow freely and be acknowledged consciously. Avoidant defenses are largely designed to inhibit emotional states that are incongruent with the goal of keeping the attachment system deactivated. Defensive inhibition is directed mainly at fear, anxiety, anger, sadness, shame, guilt, and distress, because these emotions are triggered by threats and can cause unwanted activation of the attachment system. In addition, anger implies emotional involvement in a relationship, and such involvement may undermine an avoidant person's commitment to self-reliance (Cassidy, 1994). Moreover, fear, anxiety, sadness, shame, and guilt can be interpreted as signs of weakness or vulnerability, which contradict an avoidant person's sense of strength and independence. Avoidant individuals may even feel uncomfortable with joy and happiness, because they promote interpersonal closeness and may be interpreted by a relationship partner as indications of investment in the relationship (Cassidy, 1994).

Avoidant individuals also attempt to block emotional reactions to the potential or actual unavailability of attachment figures (rejection, separation, loss), because such reactions imply neediness and dependence. Like secure people, avoidant ones attempt to down-regulate negative emotions. But whereas secure people's regulatory efforts usually promote communication, compromise, and relationship maintenance, avoidant people's efforts are aimed at minimizing closeness and interdependence, regardless of the deleterious effects on a relationship.

The avoidant approach to emotion regulation often interferes with support seeking and reappraisal. For avoidant people, who stress interpersonal distance and self-reliance, seeking support in times of need is perceived as risky and uncomfortable. Moreover, they may have difficulty with reappraisal, because this cognitive strategy requires recognizing threats and errors that avoidant people prefer to deny. According to Ein-Dor, Mikulincer, and Shaver (2011a), avoidant people's coping responses are organized around *a rapid fight–flight mental script*—one that includes rapid self-protective responses to danger without examining one's own emotions, consulting other people, or seeking to receive help from them.

In order to make these rapid self-protective responses, avoidant individuals cannot be distracted by emotional experiences, and therefore need to suppress emotion or dissociate themselves from its effects on experience and behavior (engaging in what Lazarus and Folkman [1984,] called distancing coping). These regulatory attempts consist of suppressing emotion-related thoughts and memories, diverting attention from emotion-related material, and inhibiting or masking verbal and nonverbal expressions of emotion.

By dismissing emotions, avoidant people make it less likely that emotional experience will be integrated into their memories or that they will use this experience effectively in information processing and social behavior. For them, emotions are best suppressed rather than used flexibly in the regulation of behavior, presumably because they have learned during painful interactions with cool, rejecting attachment figures that expressing distress or vulnerability invites punishment or rejection.

Attachment Anxiety and the Intensification of Undesirable Emotions

Unlike secure and avoidant people, who tend to view negative emotions as goal-incongruent states that should either be managed effectively or suppressed, anxiously attached individuals often perceive these emotions as congruent with attachment goals and therefore worth sustaining or even exaggerating. Anxiously attached people are guided by an unfulfilled wish to get attachment figures to pay attention and provide more reliable protection, which causes them to intensify emotions that call for attention and care, such as jealousy and anger, or implicitly emphasize their vulnerability and neediness, such as sadness, anxiety, fear, and shame. This kind of emotional expression runs counter to most discussions of emotion regulation, because "regulation" usually means *down*-regulation of negative emotions. In the case of anxiously attached persons, however, "regulation" can also include intensification.

According to Cassidy (1994), an anxious person's intensification of emotion is a way to capture a caregiver's attention:

> The negative emotionality of the insecure/ambivalent child may be exaggerated and chronic because the child recognizes that to relax and allow herself to be soothed by the presence of an attachment figure is to run the risk of then losing contact with the inconsistently available parent. One reasonable strategy involves fearfulness in response to relatively benign stimuli. Through exaggerated fearfulness, the infant increases the likelihood of gaining the attention of a frequently unavailable caregiver should true danger arise. (p. 241)

Following this reasoning, Ein-Dor et al. (2011a) proposed that attachment-anxious individuals rely on a *sentinel mental script* for dealing with threats, one that includes high sensitivity to clues of impending threats and a tendency to warn others about the danger while staying close to others in the dangerous situation.

This sentinel script sometimes renders problem solving irrelevant. In fact, problem solving may thwart an anxious person's wish to perpetuate problematic situations and work against his or her self-construal as helpless and incompetent (see Chapter 6). Anxious people can also have problems with seeking support. Although their intense wish for security and protection often intensifies support-seeking efforts, their doubts about support availability (see Chapter 6), coupled with fear of rejection, may make them hesitant at times to ask directly for assistance. As a result, they may be ambivalent about support seeking and hence express their need for protection in indirect ways that seem less likely to provoke rejection (e.g., exaggerating facial expressions of sadness without directly asking for help).

How is anxious hyperactivation sustained? There are several possible methods: making catastrophic appraisals, amplifying the threatening aspects of even minor troubles, maintaining pessimistic beliefs about one's inability to manage distress, and attributing threatening events to uncontrollable causes and global personal inadequacies (Chapter 6 contains a review of findings regarding this self-defeating attribution pattern). Another

approach is to pay close attention to internal signs of insecurity, anxiety, or distress (engaging in what Lazarus and Folkman [1984] called emotion-focused coping). This involves hypervigilant attention to the physiological changes associated with emotion, heightened recall of threat-related feelings, and rumination on actual and potential threats. A paradoxical strategy is to intensify negative emotions by adopting a counterphobic stance toward threats or making self-defeating decisions and taking ineffective courses of action that end in failure. All of these strategies create a self-amplifying cycle of distress, which is maintained by ruminative thoughts even after a threat subsides. As a result, anxious individuals' cognitive processes are often burdened and disrupted by distress, and their stream of consciousness is overloaded with threat-related thoughts and feelings.

Interestingly, although hyperactivating and deactivating strategies lead to opposite patterns of emotional expression (intensification vs. suppression), both result in dysfunctional emotions. Avoidant people miss the adaptive aspects of emotional experiences by blocking conscious access to them, and anxious people miss adaptive possibilities by riveting their attention on disruptive aspects of emotional experience rather than potentially functional aspects. As a result, anxious individuals perceive themselves as helpless to control the self-amplifying flow of painful thoughts and feelings, even though they contribute to it.

EMPIRICAL EVIDENCE FOR ATTACHMENT-RELATED DIFFERENCES IN EMOTION REGULATION

There is a large body of evidence supporting the foregoing theoretical analysis. In subsequent sections we review evidence concerning attachment-style differences in (1) attachment-related mental scripts; (2) use of support seeking; (3) appraisal, reappraisal, and other aspects of coping with stress (problem solving, emotion-focused strategies, distancing); (4) management of attachment-related threats; (5) experience and management of specific emotional states; and (6) mental access to emotional memories and experiences.

Attachment-Related Mental Scripts

There is evidence supporting the idea that securely attached people tend to deal with distressing events through the guidelines offered by the secure-base script. For example, Mikulincer et al. (2009) found that young adults who score lower on self-report scales tapping attachment anxiety or avoidance (i.e., the more secure participants) were more likely to include elements of the secure-base script (support seeking, support provision, and distress relief) when writing about projective-test pictures of a troubled person (Studies 1 and 2). Moreover, the two kinds of insecurity—anxiety and avoidance—were associated with different gaps in the script. People who scored relatively high on the anxiety scale tended to omit or deemphasize the final step in the script (relief and return to other activities), whereas those who scored relatively high on the avoidance scale tended to omit the part about seeking and benefitting from others' support. That is, anxious study participants more often wrote about an injured protagonist who was seeking support and not achieving relief, whereas avoidant participants more often wrote about a person achieving relief without seeking or receiving support.

In addition, Mikulincer et al.'s (2009, Studies 3–8) findings provide ample evidence concerning the cognitive properties of the secure-base script and how it organizes

expectations, memories, and judgments. For example, more secure individuals had more access to the secure-base script when dreaming about distressing events (Study 4) and expected more secure-base script components (support seeking, support availability) in an imagined story that began with a distressing experience (Study 3). Relatively secure individuals were also more likely to go beyond the script-relevant information they received and generate more inferences and conjectures based on this information (Study 5). This tendency was evident even 5 days after being exposed to the information (Study 7) and was not affected by the depletion of cognitive resources caused by an effortful task, a sign that secure-base-script information was processed easily and automatically (Study 8). Mikulincer et al. (2009) also showed that relatively secure participants were quicker and more confident in making judgments concerning secure-base script–related information (Studies 6–7). Overall, these findings portray secure individuals as expert users of the secure-base script for dealing with distress-inducing events.

This conclusion is further reinforced by findings that self-reports of attachment security (as assessed with the ECR or RSQ) are positively associated with the degree to which the secure-base script underlies dreams about romantic partners (Selterman, Apetroaia, & Waters, 2012), narratives of current relationships (McLean, Bailey, & Lumley, 2014), and interpersonal stories study participants create from word prompts (R. D. Steele et al., 2014). Similarly, greater security in the AAI has been found to be linked to a propensity to create stories from word prompts that follow a secure-base script (Coppola, Vaughn, Cassibba, & Costantini, 2006; Dykas et al., 2007; Guttmann-Steinmetz, Elliot, Steiner, & Waters, 2003; R. D. Steele et al., 2014; H. S. Waters & Rodrigues-Doolabh, 2001). For example, Guttmann-Steinmetz et al. (2003) reported that mothers who demonstrated greater security in the AAI were more capable of helping their children coconstruct stories that followed a secure-base script. In addition, security in the AAI was positively associated with reliance on the secure-base script for generating narratives of childhood experiences with parents (T. E. A. Waters, Brockmeyer, & Crowell, 2013).

Studies conducted by Ein-Dor et al. (2011a) also provided novel information about the *sentinel* and *rapid fight–flight* scripts that characterize insecure people in dealing with distress-inducing events. Specifically, attachment anxiety was associated with ready access to core components of the sentinel schema (noticing danger before other people do, warning others about the danger) when writing a story about threatening events (Study 1) and better memory of recently encountered sentinel schema information (Study 3). Participants who scored higher on attachment anxiety were also more likely to process sentinel schema information in a deeper way and to generate more inferences and conjectures based on this information (Study 4) and had poorer and shallower recall of information that was congruent with the rapid fight–flight schema (Studies 2 and 5).

With regard to attachment-related avoidance, more avoidant participants had readier access to core components of the rapid fight–flight schema (escaping a dangerous situation without helping others, acting rapidly without depending on others' actions, not deliberating or cooperating with others) when thinking and writing a story about threatening events (Study 1). Moreover, avoidant attachment was associated with better memory of information relevant to the rapid fight–flight schema (Study 3) and with processing this information in a deeper way (Study 5). More avoidant participants also exhibited poorer memory of information that was congruent with the sentinel schema (Study 4).

In a subsequent study, Ein-Dor, Mikulincer, and Shaver (2011b) tested the behavioral effects of these scripts at the group level. A total of 46 groups of three participants were unobtrusively observed in a threatening laboratory situation: The room gradually filled with smoke, apparently because of a malfunctioning computer. Group members'

attachment anxiety was associated with quicker detection of the danger and therefore with greater group effectiveness. Group members' attachment-related avoidance was associated with speedier escape responses to the danger once it was detected, and therefore with greater group safety.

Further studies conducted by Ein-Dor and his group provided more evidence concerning anxious people's reliance on the sentinel script. For example, Ein-Dor and Perry (2014) examined the manifestations of a sentinel script in the detection of others' deceit. They found that attachment anxiety (measured with the ECR) predicted more accurate detection of deceitful statements during interpersonal interactions and with winning more money while playing poker—a game based on players' ability to detect bluffing. In another study, Ein-Dor and Orgad (2012) focused on the "warning others about danger" component of the sentinel script. They led participants to believe that they accidently activated a computer virus, and asked them to alert the department's computer technicians about the incident. Along the way to the technicians' office, they were presented with four decision points at which they could choose either to delay their warning or to continue directly to the office. As expected, more anxious individuals (based on the ECR) were less willing to be delayed on their way to deliver a warning message.

Ein-Dor, Reizer, Shaver, and Dotan (2012) examined two domains in which reliance on elements of the rapid fight–flight script might help avoidant people succeed: professional singles tennis and computer science. These fields reward self-reliance, independence, and the ability to work without emotional closeness to others—core components of the rapid fight–flight script. Findings indicate that avoidance (measured with the ECR) predicted a higher standing in the field of singles tennis, above and beyond the effects of training and coping resources. Avoidance also predicted greater career-choice satisfaction among computer science students.

Thoughts and Behaviors Related to the Primary Attachment Strategy, Support Seeking

According to attachment theory, support seeking, the attachment system's primary strategy, includes both heightened access to attachment-related cognitions and memories (preconscious activation) and enactment of support-seeking mental strategies and actual behaviors. For secure people, threat appraisals may increase access to comforting thoughts about positive interactions with attachment figures, which in turn sustain support seeking. For insecure people, however, painful attachment experiences might have created associative links in memory between support seeking and worries about separation or rejection, causing overly easy access to these worries whenever an urge to seek proximity is aroused. As a result, these attachment-related worries can interfere with effective support seeking.

Preconscious Activation of Attachment Cognitions

The studies reviewed in Chapter 3 (Mikulincer et al., 2000; Mikulincer, Gillath, & Shaver, 2002) offered initial evidence for attachment-style differences in preconscious activation of attachment-related thoughts. As expected, secure people reacted to subliminal threats (as compared with neutral subliminal primes) with heightened access to thoughts of proximity and relief and to the names of security-providing attachment figures. Secure individuals displayed relatively slow access to words related to separation and rejection. In contrast, anxious individuals had ready access to attachment-related

mental contents following either a threatening or a neutral prime and also had access to words associated with separation and rejection. We attribute these findings to anxious individuals' hyperactivating strategies, which keep rejection-related thoughts available in working memory even under nonthreatening conditions.

Mikulincer et al. (2000) also found that worries about rejection and separation seemed generally not to be mentally accessible for avoidant people. However, such worries *did* become accessible to avoidant people in response to threat primes if a "cognitive load" was added to a lexical decision task (Mikulincer et al., 2000). This is in line with other findings highlighting the fragility of avoidant defenses (e.g., Mikulincer, Dolev, & Shaver, 2004). In addition, when the word "separation" was used as a subliminal prime, avoidant people were slower to activate the names of their attachment figures (Mikulincer, Gillath, & Shaver, 2002), making it seem that their attachment system was preconsciously *deactivated* when the issue of separation was raised. This may reflect prior experiences in which expressions of need for help and support, especially when an attachment figure was leaving or threatening to leave, were ignored or punished.

Support-Seeking Tendencies

Several studies have confirmed the predicted link between attachment security and self-reported support seeking (Table 7.1 contains a summary of methods and findings). For example, Florian, Mikulincer, and Bucholtz (1995) found that secure individuals (compared with their insecure counterparts) reported a stronger tendency to seek instrumental and emotional support from parents, close friends, and a romantic partner. Such findings were also obtained in a 7-year longitudinal study assessing coping trajectories from early adolescence to young adulthood (Seiffge-Krenke & Beyers, 2005).

The link between attachment security and support seeking was also noticed in retrospective accounts by Israeli ex-prisoners of the Yom Kippur War (ex-POWs), collected 18 years after the war (Z. Solomon, Ginzburg, Mikulincer, Neria, & Ohry, 1998). A content analysis of these accounts revealed that, as compared with insecure ex-POWs, securely attached ex-POWs were more likely to report having dealt with captivity by recruiting positive memories or creating positive imaginary encounters with loved ones. In other words, they coped by seeking symbolic proximity to, and comfort from, internalized attachment figures.

Secure people's reliance on support seeking was also documented in three experiments examining proximity seeking to symbolic attachment figures, such as God, in times of need (Birgegard & Granqvist, 2004). Swedish undergraduates were subliminally exposed to attachment-related threats ("Mother is gone," "God has abandoned me") or neutral statements (e.g., "People are walking") and then completed a self-report measure of seeking proximity to God. In all three studies, secure people reacted to the subliminal separation prime (as compared to a neutral prime) with a heightened effort to get close to God. Less secure people evinced less seeking of proximity to God following the separation prime.

With regard to avoidant attachment, studies consistently show that avoidance is associated with weaker tendencies to seek support (see Table 7.1). For example, Hawkins, Howard, and Oyebode (2007) found that nurses scoring higher on avoidance reported less support seeking in times of need, and F. G. Lopez, Melendez, Sauer, Berger, and Wyssmann (1998) noted that the inhibiting effects of avoidance on support seeking were most notable when participants had many problems (and therefore needed more help). Interestingly, Lynch (2013) found something similar in a within-person analysis of support seeking

TABLE 7.1. A Summary of Findings Concerning Attachment Orientations and Support-Seeking Tendencies

Study	Attachment scale	Support scale	Target	Main findings for the tendency to seek support
Studies assessing secure attachment to parents or peers				
Greenberger & McLaughlin (1998)	HS ratings	COPE	Global	Security (+)
Torquati & Vazsonyi (1999)	AAS	CAPSI	Global	Security (+)
Larose et al. (2001)[a]	IPPA	ACBS	Counselor	Security (+)
Paley et al. (2002)[a]	AAI	Interview	Spouse	Security (+) (only for husbands)
Pascuzzo et al. (2013)[a]	IPPA	CISS	Global	Security (+)
Holt (2014)	IPPA	AAHS	Teacher	Security (+)
Studies assessing attachment types				
J. Feeney & Ryan (1994)	HS ratings	one item	Professional	Secure > avoidant
Florian et al. (1995)	HS types	SSS	Parents, Peers	Secure > anxious, avoidant
Mikulincer et al. (1993)	HS types	WOCS	Global	Secure > anxious, avoidant
Mikulincer & Florian (1995)[a]	HS types	WOCS	Global	Secure > avoidant
Birnbaum et al. (1997)	HS types	WOCS	Global	No significant differences
Mikulincer & Florian (1998)	HS types	WOCS	Global	Secure > anxious, avoidant
Ognibene & Collins (1998)	RSQ	WOCS	Global	Secure > avoidant, fearful
Priel et al. (1998)	RQ	one item	Friends	Secure > avoidant
Kemp & Neimeyer (1999)	RQ	WOCS	Global	No significant differences
Mikulincer & Florian (1999c)	HS types	WOCS	Global	Secure > anxious, avoidant
Berant et al. (2001a)	HS ratings	WOCS	Global	Secure > anxious, avoidant
DeFronzo et al. (2001)	RSQ	SSFQ	Global	Secure > avoidant
Schmidt et al. (2002)	New scale	BCM	Global	Secure > avoidant
Seiffge-Krenke & Beyers (2005)[a]	AAI	CASQ	Global	Secure > avoidant, anxious
Studies based on attachment ratings or dimensions				
Radecki-Bush et al. (1993)	HS ratings	WOCS	Global	Avoidance (–)
Kotler et al. (1994)	HS ratings	WOCS	Global	Anxiety (ns), avoidance (–)
Glachan & Ney (1995)	AAS	Narrative	Global	Anxiety (ns), avoidance (ns)
J. Feeney (1998)	ASQ	Narrative	Global	Anxiety (–), avoidance (–)
F. G. Lopez et al. (1998)	RQ Model of Other	ATSPPH WSCS	Professional counselor	Avoidance (ns) Avoidance (–)
Pierce & Lyddon (1998)	AAS	six items	Global	Anxiety (ns), Avoidance (–)
Larose et al. (1999, Study 1)	ASQ	SHTS	Teacher	Anxiety (–), Avoidance (–)
Larose et al. (1999, Study 2)[a]	ASQ	SHTS	Mentor	Anxiety (ns), Avoidance (–)
Harvey & Byrd (2000)	AAS	FCOPES	Global	Sec (+), Anx (–), Avo (–)
R. Alexander et al. (2001)	ASQ	WOCS	Global	Anxiety (ns), Avoidance (–)
Berant et al. (2001b)[a]	HS ratings	WOCS	Global	Anxiety (+), Avoidance (–)
Horppu & Ikonen-Varila (2001)	RQ	14 items	Global	Sec (ns), Anx (ns), Avo (–)
Larose et al. (2001)[a]	ASQ	ACBS	Counselor	Anxiety (–), Avoidance (–)
Larose & Bernier (2001)[a]	AAI	TRAC	Teacher	Anxiety (–), Avoidance (–)
M. S. Howard & Medway (2004)	RSQ	COPE	Global	Anxiety (–), Avoidance (–)
Jerome & Liss (2005)	ECR	COPE	Global	Anxiety (+), Avoidance (–)
Vogel & Wei (2005)	ECR	ISCI	Counselor	Anxiety (+), Avoidance (–)
Hawkins et al. (2007)	ECR	COPE	Global	Anxiety (ns), Avoidance (–)
M. Li & Yang (2009)	AAS	CSIn	Global	Anxiety (ns), Avoidance (–)

(*continued*)

TABLE 7.1. *(continued)*

Study	Attachment scale	Support scale	Target	Main findings for the tendency to seek support
Holmberg et al. (2011)	ECR-R	COPE	Global	Anxiety (ns), Avoidance (–)
Karantzas & Cole (2011)	ECR	CRQ	Parent	Anxiety (ns), Avoidance (–)
			Friend	Anxiety (ns), Avoidance (–)
			Spouse	Anxiety (+), Avoidance (–)
Bernardon et al. (2011)	RSQ	COPES	Global	Anxiety (–), Avoidance (–)
Halpern et al. (2012)	RQ-Fearful	COPE	Global	Fearful (–)
D. Y. Lee (2013)	ECR	5-items	Facebook	Anxiety (ns), Avoidance (–)
Lynch (2013)	RQ	ER	Four partners	Sec (+), Anx (ns), Avo (ns)
Pascuzzo et al. (2013)[a]	ECR	CISS	Global	Anxiety (ns), Avoidance (–)
Frias, Shaver, et al. (2014)	ECR	SSS	Global	Anxiety (+), Avoidance (–)
N. Turan & Erdur-Baker (2014)	RQ	ATSPPH	Counselor	Anxiety (–), Avoidance (–)
B. F. Armstrong & Kammrath (2015)	ECR-brief	Daily	Global	Anxiety (ns), Avoidance (–)
H. L. Cheng et al. (2015)	ECR	ISCI	Global	Anxiety (+), Avoidance (–)
Nam et al. (2015)	ECR	ISCI	Counselor	Anxiety (–), Avoidance (–)
Nam & Lee (2015)	ECR	ISCI	Counselor	Anxiety (–), Avoidance (–)

Note. [a]Longitudinal design; (–) significant inverse correlation; (+) significant positive correlation; (ns) nonsignificant effects; AAHS, Attitudes about Academic Help Seeking; ACBS, Academic Counseling Behavior Scale; ATSPPH, Attitude toward Seeking Professional Psychological Help; BCM, Bernese Coping Modes; CAPSI, Child and Adolescent Problem Solving Inventory; CASQ, Coping Across Situations Questionnaire; CISS, Coping Inventory for Stressful Situations; CRQ, Care Request Questionnaire; CSIn, Coping Strategies Indicator; FCOPES, Family Crises Oriented Personal Evaluation Scale; HS, Hazan & Shaver; ISCI, Intentions to Seek Counseling Inventory; SHTS, Seeking Help from Teacher Scale; SSFQ, Stress and Social Feedback Questionnaire; SSS, Support Seeking Scale; TRAC, Test of Reactions and Adaptation to College; WSCS, Willingness to Seek Counseling Scale; WOCS, Ways of Coping Scale.

from four different relationship partners: Reports of support seeking were lower for partners with whom participants reported a more avoidant attachment orientation.

The link between avoidant attachment and inhibition of support seeking has also been noted following experimentally induced threats to cultural worldviews or self-esteem (Hart et al., 2005, Studies 3–4). In these studies, American undergraduates read either a hostile or a neutral essay about America or were exposed to failure feedback or no feedback in a cognitive task. Following the manipulations, participants rated their desire for support in romantic relationships. In both studies, avoidant people (as compared to secure ones) reacted to threats to cultural worldviews or self-esteem with decreased rather than increased desire for support.

Findings regarding attachment anxiety are less consistent. Whereas several studies indicate that attachment anxiety is associated with lower levels of support seeking, other studies failed to find evidence of this association (see Table 7.1). These inconsistent results may reflect anxious people's ambivalent approach to support seeking (intensely wishing for security coupled with doubts about support availability). Indeed, Vogel and Wei (2005) found two opposing causal pathways by which attachment anxiety affected support seeking. In one path, attachment anxiety was associated with greater psychological distress, which in turn heightened support seeking. Karantzas and Cole (2011) also found this path in a study of support seeking among people suffering from arthritis. In the other path, attachment anxiety was linked with negative perceptions of others' supportiveness, which led to reduced support seeking. This path was also observed in Rholes et al.'s (2001) study of the transition to parenthood. Attachment-anxious pregnant women who perceived their husband to be unsupportive 6 weeks before delivery sought less support

from their husbands 6 months postpartum. However, when anxious women perceived their husbands to be supportive, their wish for care and protection resulted in a significant increase in support seeking (as compared with less anxious women).

H. L. Cheng, McDermott, and Lopez (2015) reported a similar ambivalent attitude. On the one hand, they found that attachment anxiety directly and positively predicted intentions to seek counseling. On the other hand, mediation analyses indicated that attachment anxiety was indirectly and negatively linked to help-seeking intentions through self-stigma. Specifically, higher levels of attachment anxiety predicted greater levels of self-stigma concerning being mentally ill, which in turn predicted weaker intentions to seek counseling.

Actual Support-Seeking Behavior

Attachment-style differences have been noted in observational studies of the actual seeking of support from relationship partners. In two studies, one member of a dating couple (women in Simpson, Rholes, & Nelligan, 1992; men in Simpson et al., 2002) was told that she or he would undergo a painful laboratory procedure after waiting with a partner for 5 minutes. During this period, participants' behavior was unobtrusively videotaped, and raters later coded the extent to which each participant sought the partner's support. For women, avoidance (in the AAQ) inhibited support seeking mainly when their level of distress was high. In such cases, avoidant women often attempted to distract themselves by reading magazines instead of asking for support. For men, however, there was no association between attachment and support seeking. Simpson et al. (2002) attributed this lack of association to social norms that inhibit men's seeking of support from women or to men's tendency to perceive the experimental tasks as less threatening. Similar findings were obtained using the AAI or a secure-base script methodology (Crowell et al., 2002; T. E. A. Waters et al., 2013).

Two other observational studies provide additional evidence for avoidant and anxious people's problematic attitudes toward support seeking. Fraley and Shaver (1998) unobtrusively coded expressions of desire for proximity and support when romantic or marital partners were about to separate from each other at a metropolitan airport, and Collins and Feeney (2000) coded support-seeking behavior while members of seriously dating couples talked about a personal problem in the laboratory. In both studies, avoidance was associated with less frequent seeking of proximity or support. In addition, although attachment anxiety did not affect direct requests for partner support, more anxious people were more likely to use indirect methods of support seeking, such as asking for help through nonverbal distress signals (crying, pouting, or sulking).

There is also evidence that the problems encountered, when seeking support, by people who are insecure with respect to attachment are manifested during initial interactions with strangers. For example, Feeney, Cassidy, and Ramos-Marcuse (2008) asked adolescent participants to interact with an unfamiliar peer in the lab and talk with him or her about specific areas of difficulty in their lives. Findings indicated that greater attachment security in the AAI predicted more support seeking and greater receptiveness to support (as coded by external observers. Higher scores on the ECR anxiety scales was also associated with more support seeking but with greater expressions of hostility toward the support provider. In another study, Schönbrodt and Asendorpf (2012) found similar findings while coding the instructions people gave, in a virtual-reality social environment, to an agent who was experiencing a physical illness. Whereas more anxious participants (assessed with the RQ) instructed the distressed virtual protagonist to stay closer to his

or her spouse, avoidant participants instructed the protagonist to increase distance from a spouse (especially when the spouse tried to reduce the distance).

Reliance on Supportive Interactions

In line with attachment theory, a series of studies found that insecure people are less likely to benefit from imagined or actual supportive interactions when coping with stress (Bodie et al., 2011; McGowan, 2002; Mikulincer & Florian, 1997; Milyavskaya, McClure, Ma, Koestner, & Lydon, 2012). Using the AAI, Simpson, Winterheld, et al. (2007), however, found that the type of support is critical for understanding problems insecure people have in benefiting from supportive interactions. Dating couples were videotaped trying to resolve their most important relationship problem. At peak distress points during each discussion, coders rated the extent to which one partner displayed emotional or instrumental support behaviors, and the other partner was calmed by the partner's support attempts. Whereas securely attached individuals were rated as more calmed when their partners provided either emotional or instrumental support, avoidant individuals were rated as more calmed when their partners delivered less emotionally imbued and more instrumental support (e.g., giving concrete advice/suggestions for how to solve the problem). Girme, Overall, Simpson, and Fletcher (2015) reported similar findings in their analysis of avoidant people's reactions to instrumental support offered by their romantic partner during support-relevant discussions and in daily life. Overall, these findings suggest that effective supportive behaviors need to be tailored to the specific concerns and defenses of avoidant people.

McGowan (2002) found that asking participants to think about a close relationship partner lowered distress while waiting to take part in a stressful task only among secure people. Insecure ones reported heightened distress after thinking about a significant other rather than an acquaintance. In a related study, Milyavskaya et al. (2012) found that experimentally priming people with thoughts of a supportive figure led to greater motivation and persistence in a picture-search task only among participants scoring relatively low on anxiety or avoidance (measured with the ECR). In fact, more anxious participants reacted with more task persistence after being primed with thoughts of a nonsupportive figure.

Secure people's reliance on supportive interactions is also evident in a series of studies examining attachment-style differences in physiological responses to stressful situations in the presence or in response to the supportiveness of a relationship partner. E. M. Carpenter and Kirkpatrick (1996) and Feeney and Kirkpatrick (1996) found that physiological responses (heart rate and blood pressure) to stressful events (e.g., performing a stressful arithmetic task) of avoidant and anxiously attached women were exacerbated rather than mitigated by the presence of their romantic partner (as compared to no-partner condition). In another study, Meuwly et al. (2012) found that a partner's supportiveness reduced cortisol-related responses to a stressful event (public speaking) only among secure participants but not among more anxiously attached participants. However, Ditzen et al. (2008) found that a partner's supportiveness buffered cortisol stress reactivity (in the same task) regardless of attachment-style variations.

Findings also indicated that self-reports of attachment anxiety are related to heightened rather than decreased physiological signs of distress (higher levels of salivary cortisol, lower levels of heart rate variability) in response to compassion-focused imagery (CFI; imagining being loved and cared for by another person [Rockliff, Gilbert, McEwan, Lightman, & Glover 2008]). Moreover, attachment anxiety counteracted the effects of

experimentally provided oxytocin on emotional responses to CFI (Rockliff et al., 2011). Whereas oxytocin increased positive emotions during CFI, participants scoring high on attachment anxiety had less positive experiences under oxytocin than placebo. Moreover, they found it significantly more difficult to feel relaxed during CFI in the oxytocin condition. This is consistent with Bartz et al.'s (2010) findings that oxytocin increases access to negative attachment memories in anxious people, which in turn may increase doubts about their partners' supportiveness and thereby reduce support seeking.

Appraisal Patterns and Ways of Coping with Stressful Events

The emotion regulation aspects of attachment strategies have been studied with respect to the ways people appraise, cope, and emotionally react to a wide variety of stressful events (Tables 7.2 and 7.3 summarize the studied events). Such events commonly evoke negative emotions and emotion-regulatory efforts.

Appraisal Patterns

Attachment orientations are related to people's beliefs and expectations about threatening events and their ability to resist stress or cope effectively with it (see Table 7.2). With regard to threat appraisals, studies have consistently shown that attachment security is associated with appraising stressful events in less threatening ways. With regard to what Lazarus and Folkman (1984) call "secondary appraisal," there is extensive evidence that secure attachment is related to appraising oneself as able to cope effectively with threats. Specifically, attachment security is associated with higher scores on scales tapping ego resilience, perceived coping resources, and stress-resistant hardy attitudes. Secure attachment is also associated with more positive expectations about regulation of negative moods and more optimistic and hopeful attitudes toward life adversities. A recent meta-analysis conducted by Blake and Norton (2014) found a significant positive association between secure attachment and self-reported hope (weighted average $r = .39$) in 10 published studies.

These studies have also consistently shown that anxiously attached people tend to appraise stressful events in catastrophic ways, to overemphasize the threatening aspects of these events, and to perceive themselves as unable to cope effectively with threats. For avoidant individuals the findings are more complex. With regard to appraising one's own coping abilities, most studies have found that avoidant people's appraisals are similar to those of secure people (appraising coping resources as adequate). With regard to threat appraisals, however, most studies have found that avoidant attachment, like attachment anxiety, is associated with appraising stressful events as highly threatening. Such appraisals have been noted mainly when avoidant people have confronted undeniable and prolonged stressful events, such as 6 months of intensive combat training, divorce, or caring for a child with a congenital heart defect (see Table 7.2). Importantly, these findings have been replicated in longitudinal studies. For example, Berant, Mikulincer, and Florian (2001b) found that avoidance predicted increasingly pessimistic appraisals of stressful events over a 1-year period.

Coping Strategies

Studies summarized in Table 7.3 included assessments of participants' use of particular coping strategies (problem solving, emotion-focused coping, reappraisal, distancing

TABLE 7.2. Studies Linking Attachment Orientations with Patterns of Appraisals of Stressful Events

Study	Attachment scale	Appraisal dimension	Type of stressful event
Primary appraisal (appraisals of stressful events as threats or challenges)			
Mikulincer & Florian (1995)[a]	HS types	Threat appraisal	Combat training
Mikulincer & Florian (1998)	HS types	Threat appraisal	Chronic pain
Berant et al. (2001a)	HS ratings	Threat appraisal	Parenthood
Berant et al. (2001a)	HS ratings	Threat appraisal	Caring for an infant with CHD
Berant et al. (2001b)[a]	HS ratings	Threat appraisal	Caring for an infant with CHD
Riskind et al. (2004)	ECR	Threat appraisal	Life stressors
Taubman-Ben-Ari et al. (2009)	ECR	Threat appraisal	Life stressors
Secondary appraisal (appraisals of one's abilities to resist stress or cope with it)			
Kobak & Sceery (1988)	AAI	Resilience	Global
Brack et al. (1993)	IPPA	Perceived coping resources	Life stressors
Mikulincer & Florian (1995)	HS types	Perceived coping ability	Combat training
Kerns & Stevens (1996)	AAS	Resilience	Global
Birnbaum et al. (1997)	HS types	Perceived coping ability	Divorce
Cozzarelli et al. (1998)	RQ	Perceived coping ability	Abortion
Mikulincer & Florian (1998)	HS types	Perceived coping ability	Chronic pain
Creasey et al. (1999)	RSQ	NMRE	Negative emotions
Koopman et al. (2000)	HS ratings	Perceived coping resources	AIDS
Berant et al. (2001a)	HS ratings	Perceived coping ability	Parenthood
Berant et al. (2001a)	HS ratings	Perceived coping ability	Caring for an infant with CHD
Berant et al. (2001b)[a]	HS ratings	Perceived coping ability	Caring for an infant with CHD
Neria et al. (2001)	HS ratings	Hardiness	Global
Buelow et al. (2002)	RQ	Perceived coping resources	Life stressors
Creasey (2002b)	AAI	NMRE	Negative emotions
Moller et al. (2002)	ASQ	Perceived coping resources	Life stressors
Myers & Vetere (2002)	HS types	Perceived coping resources	Life stressors
Moller et al. (2003)	ASQ, ECR	Perceived coping resources	Life stressors
Shorey et al. (2003)	ASQ	Hope	Global
Simmons et al. (2003)	SRI	Hope	Global
Wei et al. (2003)	AAS	Problem-solving ability	Life problems
Creasey & Ladd (2004)	AAI	NMRE	Negative emotions
Gjerde et al. (2004)	ECR, RAI	Resilience	Global
Heinonen et al. (2004)	AAS	Optimism	Global
Mayseless (2004)	ACQ	Hardiness	Global
Klohnen et al. (2005)	RQ	Resilience	Global
C. J. McCarthy et al. (2006)	PAQ	NMRE	Life stressors
Cloitre et al. (2008)	AAI	NMRE	Negative emotions
M. Li (2008)	AAS	Resilience	Life stressors
M. Li & Yang (2009)	AAS	Resilience	Life stressors
Schiff & Levit (2009)	HS rating	Hope	Global
Simmons et al. (2009)	SRI	Hope	Global
Taubman-Ben-Ari et al. (2009)	ECR	Perceived coping resources	Life stressors
Zeyrek et al. (2009)	RQ	Hope	Global
Gick & Sirois (2010)	AAQ	Perceived coping resources	Inflammatory bowel disease

(*continued*)

TABLE 7.2. *(continued)*

Study	Attachment scale	Appraisal dimension	Type of stressful event
Thorberg & Lyvers (2010)	AAS	NMRE	Negative emotions
Tosone et al. (2010)	AAQ	Perceived coping resources	Terror attack
Carnelley et al. (2011)	ECR	Optimism	Global
Jankowski & Sandage (2011)	ECR	Hope	Global
Land et al. (2011)	ECR	NMRE	Negative emotions
Lavy & Littman-Ovadia (2011)	ECR	Hope	Global
Karreman & Vingerhoets (2012)	ASQ	Resilience	Negative emotions
Caldwell & Shaver (2012)	ECR	Resilience, NMRE	Global
Delhaye et al. (2013)	CaMir	Resilience	Global
Gnilka et al. (2013)	ECR-R	Hope	Global
X. U. Jiang et al. (2013)	IPPA	Hope	Global
Dwiwardani et al. (2014)	ECR-R	Resilience	Global
Han & Pistole (2014)	ECR	NMRE	Negative emotions
Kokkonen et al. (2014)	ECR	Perceived coping resources	Caring for patients with dementia
J. D. Jones et al. (2014)[a]	ECR	Perceived coping resources	Offspring's negative emotions

Note. [a]Longitudinal design; ACQ, Attachment Concerns Questionnaire; RAI, Romantic Attachment Interview; NMRE, Negative Mood Regulation Expectations; SRI, Self-Reliance Inventory

coping). With regard to problem-focused coping, some researchers found that secure people were more likely than insecure ones to use this strategy (e.g., Bazzarian & Besharat, 2012; Deniz & Işık, 2010; Raskin, Kummel, & Bannister, 1998), but other studies did not find a significant association between attachment style and problem solving (e.g., Berant, Mikulincer, & Florian, 2001a; Mikulincer & Florian, 1995; Mikulincer, Florian, & Weller, 1993). Some of the latter studies focused on stressful events for which people received extensive problem-solving instructions, such as media information about what to do in case of missile attacks or officers' instructions about how to solve problems during combat training. This may have caused most study participants, regardless of attachment style, to deal with the stressful events in a problem-focused way.

Several of the studies summarized in Table 7.3 found links between avoidant attachment and reliance on distancing coping strategies, such as stress denial, diversion of attention, and behavioral or cognitive disengagement (e.g., J. Feeney, 1998; Holmberg, Lomore, Takacs, & Price, 2011; W. L. Marshall, Serran, & Cortoni, 2000; Shapiro & Levendosky, 1999). Also compatible with theory, avoidance was associated with repression (e.g., Gjerde et al., 2004; Mikulincer & Orbach, 1995; Vetere & Myers, 2002) and behavioral blunting (using distraction to avoid having to confront stressors; J. Feeney, 1995b). Turan, Osar, Turan, Ilkova, and Damci (2003) found that diabetics scoring higher on avoidance relied more on cognitive distancing and passive resignation as coping strategies, which in turn was associated with poor adherence to medical regimens.

Relations between attachment style and distancing coping were also examined in two longitudinal studies. In a 31-year study, Klohnen and Bera (1998) found that women with an avoidant attachment style at age 52 had scored higher on repressive defensiveness at ages 21 and 43 than women who endorsed a secure style at age 52. Similarly, F. Zhang and Labouvie-Vief (2004) conducted a 6-year longitudinal study of people ranging in age from late adolescence to late adulthood, and found that although attachment style was relatively stable over the 6-year period, there was some fluidity associated with variations

TABLE 7.3. Studies Linking Attachment Orientations with Patterns of Coping with Stressful Events

Study	Attachment scale	Coping scale	Type of stressful event
Mikulincer et al. (1993)	HS types	WOCS	Missile attack
Radecki-Bush et al. (1993)	HS ratings	WOCS	Partner infidelity
Kotler et al. (1994)	HS ratings	WOCS	College transition
J. Feeney (1995b)	ASQ	MBS	Recent major stressors
Glachan & Ney (1995)	AAS	Narrative	Infant's distress
Mikulincer & Florian (1995)[a]	HS types	WOCS	Combat training
Birnbaum et al. (1997)	HS types	WOCS	Divorce
F. G. Lopez (1996)	ASQ	GCTS	Recent major stressors
Lussier et al. (1997)	HS ratings	CISS	Relation conflicts
Greenberger & McLaughlin (1998)	HS ratings	COPE	Recent major stressors
J. Feeney (1998)	ASQ	Narrative	Separation
Meyers (1998)	HS types	DMI	Recent major stressors
Mikulincer & Florian (1998)	HS types	WOCS	Chronic pain
Mikulincer & Florian (1998)	HS types	WOCS	Parenthood
Mikulincer & Florian (1998)	HS types	WOCS	Caring for a mentally ill adolescent
Ognibene & Collins (1998)	RSQ	WOCS	Recent major stressors
Raskin et al. (1998)	HS types	CSI	Workload
Z. Solomon et al. (1998)	HS types	Narrative	Captivity
Kemp & Neimeyer (1999)	RQ	WOCS	Recent major stressors
Mikulincer & Florian (1999c)	HS types	WOCS	Pregnancy
Shapiro & Levendosky (1999)	AAS	COPE	Relationship conflict
Torquati & Vazsonyi (1999)	AAS	CAPSI	Relationship conflict
Harvey & Byrd (2000)	AAS	FCOPES	Family problems
W. L. Marshall et al. (2000)	HS ratings	CISS	Recent major stressors
R. Alexander et al. (2001)	ASQ	WOCS	Parenthood
Berant et al. (2001a)	HS ratings	WOCS	Parenthood
Berant et al. (2001a)	HS ratings	WOCS	Caring for an infant with CHD
Berant et al. (2001b)[a]	HS ratings	WOCS	Caring for an infant with CHD
J. Feeney & Hohaus (2001)	RQ	Narrative	Caregiving-related stress
Horppu & Ikonen-Varila (2001)	RQ	14 items	College exam
F. G. Lopez et al. (2001)	ECR	PF-SOC	Recent major stressors
F. G. Lopez et al. (2002)	ECR	PF-SOC	Recent major stressors
F. G. Lopez & Gormley (2002)[a]	RQ	PF-SOC	College transition
Schmidt et al. (2002)	AAPR	BCM	Health problems
Williamson et al. (2002)	RQ	WOCS	Caring for a child with chronic pain
Turan et al. (2003)	RSQ	DCM	Diabetes
Wei et al. (2003)	AAS	PF-SOC	Recent major stressors
M. S. Howard & Medway (2004)	RSQ	COPE	Recent major stressors
Scharf et al. (2004)[a]	AAI	WOCS	Combat training
Jerome & Liss (2005)	ECR	COPE	Recent major stressors
Seiffge-Krenke & Beyers (2005)[a]	AAI	CASQ	Recent major stressors
Schottenbauer et al. (2006)	MAQ	COPE	Recent major stressors
Seiffge-Krenke (2006)[a]	AAI	CASQ	Recent major stressors
Wei et al. (2006)[a]	ECR	PF-SOC	Recent major stressors
Hawkins et al. (2007)	ECR	COPE	Recent major stressors
Hobdy et al. (2007)	AAS	WOCS	Job loss
C. Cooper et al. (2008)	HS ratings	COPE	Caring for a patient with Alzheimer's disease
M. Li (2008)	AAS	WOCS	Recent major stressors

(*continued*)

TABLE 7.3. *(continued)*

Study	Attachment scale	Coping scale	Type of stressful event
M. O'Connor & Elklit (2008)	AAS	CSQ	Recent major stressors
Gaylord-Harden et al. (2009)[a]	IPPA	CC	Recent major stressors
M. Li & Yang (2009)	AAS	CSIn	Recent major stressors
Taubman-Ben-Ari et al. (2009)	ECR	WOCS	Recent major stressors
Turner et al. (2009)	ASQ	UCS	Recent major stressors
Deniz & Işık (2010)	RSQ	CWS	Recent major stressors
Landen & Wang (2010)	ECR	COPES	Recent major stressors
Sambo et al. (2010)	RSQ	CSQ	Recent major stressors
Belizaire & Fuertes (2011)	ECR	COPE	Recent major stressors
Holmberg et al. (2011)	ECR-R	COPE	Recent major stressors
Ponizovsky et al. (2011)	ECR	CISS	Recent major stressors
Arikan & Karanci (2012)	ASQ	WOCS	Traumatic event
Bazzarian & Besharat (2012)	HS ratings	CISS	Diabetes
Berry & Kingswell (2012)	ECR	COPES	Academic exams
Halpern et al. (2012)	RSQ	COPE	Traumatic event
Karreman & Vingerhoets (2012)	ASQ	ERQ	Negative emotions
Kratz et al. (2012)	RQ	CSQ	Chronic pain
Schmidt et al. (2012)	MAQ	COPE	Cancer
Christiansen et al. (2013)[a]	AAS	CSI	Death of a child
Gore-Felton et al. (2013)	HS ratings	COPE	HIV/AIDS
J. Owen et al. (2014)	ECR-PAM	COPES	Recent major stressors
Pascuzzo et al. (2013)[a]	ECR	CISS	Recent major stressors
Shechory (2013)	ECR	WOCS	Marital violence
Aarts et al. (2014a)	ECR	UCS	Physical problems
Banerjee & Basu (2014)	ASQ	CC	Recent major stressors
Bost et al. (2014)	RSQ	CCNES	Offspring's negative emotions
Craparo et al. (2014)	ASQ	COPES	Marital violence
Dawson et al. (2014)[a]	AAI	MCS	Recent major stressors
Frías et al. (2014)	ECR	MSCSS	Recent major stressors
J. D. Jones et al. (2014)[a]	ECR	CCNES	Offspring's negative emotions
Shallcross et al. (2014)[a]	AAQ	CSI	Traumatic events
Al-Yagon (2015b)	ECR	Moos-CS	Offspring's learning problems

Note. [a]Longitudinal design; BCM, Bernese Coping Modes; CAPSI, Child and Adolescent Problem Solving Inventory; CASQ, Coping Across Situations Questionnaire; CC, Coping Checklist; CCNES, Coping with Children's Negative Emotions Scale; CISS, Coping Inventory for Stressful Situations; COPES, Coping Orientations to Problems Experienced Scale; CSI, Coping Style Inventory; CSIn, Coping Strategies Indicator; CWS, Coping With Stress; DCM, Diabetes Coping Measure; DMI, Defense Mechanism Inventory; ERQ, Emotion Regulation Questionnaire; FCOPES, Family Crises Oriented Personal Evaluation Scale; GCTS, Global Constructive Thinking Scale; HS, Hazan & Shaver; MBS, Monitor-Blunting Scale; MCS, Maladaptive Coping Scale; MSCSS, Multi-Situational Coping Strategies Scale; PAM, Psychosis Attachment Measure; PF-SOC, Problem-Focused Styles of Coping; UCS, Utrecht Coping Scale; WOCS, Ways of Coping Scale.

in coping strategies and mental health. An increase in attachment security over the 6-year period covaried with decreased use of distancing coping and increased use of constructive, flexible, and reality-oriented coping strategies. These findings fit with the theoretical notion that felt security is a resilience resource that helps people maintain emotional balance without the use of avoidant defenses.

This conclusion is further supported by a recent EEG study conducted by Nash, Prentice, Hirsh, McGregor, and Inzlicht (2014). Participants were asked to complete a reaction time task and their neural response to error-related distress (error-related

negativity [ERN]) was assessed before and after an attachment-related threat induction. Findings clearly indicate that whereas insecurely attached participants showed an increase in ERN amplitude after threat, secure participants did not show any elevation in this neural signal. That is, secure people's brain seems to be more resilient to distress-eliciting probes.

In only one study (Berant et al., 2001a) were secure individuals more likely than their avoidant peers to rely on distancing coping. Secure mothers of both healthy infants and infants with a mild congenital heart defect (CHD) relied on support seeking and problem solving, but secure mothers of infants with a severe CHD tended to rely on distancing strategies. This implies that secure mothers can employ distancing coping when thoughts about the stressful condition might impair effective functioning. Suppression of painful thoughts about their infant's illness might have allowed secure women to maintain a positive appraisal of motherhood. As a result, the overwhelming demands of the infant's illness might not have been so discouraging, allowing mothers to mobilize internal and external resources for taking caring of the baby. Consistent with this reasoning, Schmidt, Nachtigall, Wuethrich-Martone, and Strauss (2002) and O. Cohen and Katz (2015) found that attachment security is associated with greater coping flexibility.

Most of the studies that assessed emotion-focused coping (e.g., wishful thinking, self-blame, rumination) have found that attachment-anxious adults are more likely than secure adults to direct their attention toward their own distress rather than focus on possible solutions to the problem at hand (see Table 7.3). For example, several studies have established that people scoring higher on attachment anxiety are more likely to engage in distress-exacerbating mental rumination—moody pondering, or thinking anxiously or gloomily about life events (Burnette, Taylor, Worthington, & Forsyth, 2007; Caldwell & Shaver, 2012; Chung, 2014; Cicero, Lo Coco, Gullo, & Lo Verso, 2009; Garrison, Kahn, Miller, & Sauer, 2014; Lanciano, Curci, Kafetsios, Elia, & Zammuner, 2012; Oliveira & Costa, 2009; Pearson, Watkins, Mullan, & Moberly, 2010; Reynolds, Searight, & Ratwik, 2014; Saffrey & Ehrenberg, 2007).

There is also evidence that anxious attachment is associated with higher levels of worrying about the causes and consequences of threatening events (Consedine, Tuck, & Fiori, 2013; Doron, Szepsenwol, Karp, & Gal, 2013; Fairchild & Finney, 2006; Khoshkam, Bahrami, Ahmadi, Fatehizade, & Etemadi, 2012; Knabb & Pelletier, 2013; Mikulincer & Florian, 1998; Oliveira & Costa, 2009; Trillingsgaard, Elklit, Shevlin, & Maimburg, 2011; Warren et al., 2010). For example, Mikulincer and Florian (1998) assessed worrying in the lab and found that experimentally induced failure evoked more worries among attachment-anxious people. In addition, more anxiously attached people scored higher on a scale assessing crying proneness (Denckla, Fiori, & Vingerhoets, 2014), actually cried more in reaction to sad music, and reported more negative emotions during these crying episodes (Laan, van Assen, & Vingerhoets, 2012).

Anxious people's tendency to direct attention toward distress was also noted in an experiment conducted by Silva, Soares, and Esteves (2012). Participants were asked to search for a target image while ignoring a previously presented neutral or distress-eliciting prime. The distress prime interfered with image search (lower accuracy), but this interference was stronger among participants who scored higher on attachment anxiety. That is, anxious peoples' attention was automatically directed toward distress, which in turn interfered with task performance.

Interestingly and unexpectedly, some of the studies summarized in Table 7.3 revealed associations between avoidant attachment and emotion-focused coping (e.g., Birnbaum, Orr, Mikulincer, & Florian, 1997; Lussier, Sabourin, & Turgeon, 1997; Shapiro &

Levendosky, 1999). These findings suggest limits on deactivating strategies. For example, Berant et al. (2001a, 2001b) found that avoidant mothers of newborns tended to rely on distancing coping if their infant was born healthy or with only a mild CHD, but they used emotion-focused coping if their infant was diagnosed with a life-threatening CHD, and they showed a notable increase in the use of this coping strategy a year after the diagnosis. Thus avoidant defenses, which may be sufficient for dealing with minor stressors, can fail when people encounter severe and persistent stressors. This conclusion is consistent with Bowlby's (1980) idea that avoidant people's segregated mental systems cannot be hidden from conscious awareness indefinitely and that traumatic events can resurrect distress that had been sealed off from consciousness.

Overall, the research summarized in Table 7.3 supports the hypothesized attachment–coping links. Attachment security is associated with problem solving (and distancing when a problem cannot be solved), anxious attachment is associated mainly with emotion-focused coping strategies, and avoidant attachment is associated with distancing strategies (and emotion-focused strategies when stressors are severe and persistent).

Emotional Reactions to Stressful Events

Several of the studies summarized in Table 7.3 included participants' reports of psychological distress during stressful events. Across these studies, attachment security was associated with lower levels of distress, whereas attachment insecurities—anxiety, avoidance, or both—were associated with heightened distress. These findings have been replicated in studies that have assessed emotional reactions (without assessing coping strategies) to specific stressors, such as birth of child with a congenital anomaly (Fonseca, Nazaré, & Canavarro, 2013), military service (Borelli et al., 2014; Scharf, Mayseless, & Kivenson-Baron, 2011), political violence (Guttman-Steinmetz, Shoshani, Farhan, Aliman, & Hirschberger, 2012; Reizer, Possick, & Ein-Dor, 2010), experimentally induced negative events (Gentzler, Kerns, & Keener, 2010), traffic accidents and crimes (Perrier, Boucher, Etchegary, Sadava, & Molnar, 2010), and natural disasters (N. M. Costa, Weems, & Pina, 2009). Attachment insecurities have also been associated with elevated levels of distress in response to immigration and acculturation challenges (Belizaire & Fuertes, 2011; Polek, van Oudenhoven, & ten Berge, 2008; Polek, Wöhrle, & Van Oudenhoven, 2010; Sochos & Diniz, 2012; C. D. C. Wang & Mallinckrodt, 2006; C. D. C. Wang & Ratanasiripong, 2010).

Some of these studies also revealed that even avoidance can be associated with negative emotional reactions to stressful events. In fact, Berant et al. (2001b) and Berant, Mikulincer, and Shaver (2008) found that avoidance in mothers of infants with severe forms of CHD was a stronger predictor of deteriorated mental health 1 and 7 years later than was attachment anxiety. Similarly, Reizer et al. (2010) found that avoidance was associated with heightened distress among couples living in life-endangering areas of Israel (Jewish settlements in the West Bank) but not among couples living in less threatening areas. That is, under chronic, demanding stressful conditions, avoidant deactivating strategies seem to collapse, causing avoidant people to have even higher levels of distress than anxious people. This is reminiscent of laboratory studies showing that avoidant defenses collapse under a cognitive load (Mikulincer et al., 2004).

The vulnerability of avoidant defenses has been also noticed in studies assessing physiological responses to stressful events. For example, avoidant people (in the AAI) had increased levels of physiological arousal (heightened electrodermal activity) when talking about painful childhood memories or during exposure to infant crying (Ablow, Marks,

Feldman, & Huffman, 2013; Dozier & Kobak, 1992; Roisman, Tsai, & Chiang, 2004). Similarly, higher self-reported avoidant attachment was associated with heightened physiological reactivity—decreased heart rate variability (Maunder, Lancee, Nolan, Hunter, & Tannenbaum, 2006), increased skin conductance (L. M. Diamond, Hicks, & Otter-Henderson, 2006), and heightened diastolic blood pressure (Y. Kim, 2006)—in response to various laboratory stressors (e.g., recalling a stressful situation, performing demanding tasks, discussing relationship problems with a dating partner). In addition, Y. Kim (2006) found that avoidance was associated with a decrease in "rate-pressure product" (pulse rate multiplied by systolic blood pressure) during a couple discussion, indicating an inability to supply oxygen to cardiac muscles while coping with stress that can "heighten the risk for hypertension and other cardiovascular diseases" (p. 111).

Interestingly, Maunder, Lancee, et al. (2006) found that attachment-*anxious* people's responsiveness to stressors was manifested in higher levels of reported distress but not in heart-rate measures, again suggesting that anxious people exaggerate their distress. In Y. Kim's (2006) study, anxious participants' physiological reactivity was observed only when they also reported high levels of distress. This tendency contrasts with avoidant individuals' dissociation between subjective reports of lack of distress and heightened physiological reactivity.

Several studies have assessed attachment-related differences in the activity of the hypothalamic–pituitary–adrenal (HPA) axis, indexed in salivary cortisol levels during and following laboratory-induced stressors. Two studies found that avoidant attachment was associated with increased levels of salivary cortisol (T. Kidd, Hamer, & Steptoe, 2011; Pierrehumbert, Torrisi, Ansermet, Borghini, & Halfon, 2012), two studies (Pierrehumbert et al., 2009; Quirin, Pruessner, & Kuhl, 2008) found a positive association between attachment anxiety and heightened cortisol reactivity, and two studies found no significant attachment–cortisol link (Ditzen et al., 2008; Smeets, 2010). These inconsistencies might have been due, in part, to variations in the stressors (e.g., aversive noise, the Trier Social Stress Test) and participants' ages (young adults, midlife adults). More research is needed to determine the link between attachment insecurities and HPA dysregulation.

T. Kidd, Hamer, and Steptoe (2013) went beyond examining acute cortisol responses to stress and assessed cortisol levels across the day. Attachment anxiety was associated with both increased stress perceptions and higher levels of cortisol throughout the day. In addition, anxious attachment was related to heightened bedtime cortisol levels. It seems that anxious attachment strategies not only elevate cortisol levels during waking hours but also interfere with an inability to reduce levels of arousal when preparing to sleep (Maunder, Hunter, & Lancee, 2011).

There is also some evidence concerning attachment-related differences in brain responses to stressful events. Using event-related fMRI, Lemche et al. (2006) found that self-reports of attachment anxiety or avoidance were associated with heightened activation in bilateral amygdalae to a stressful stimulus. That is, less secure people tended to react to stress with increased amygdala activity, a neural indication of distress-related arousal.

More information about the brain mechanisms underlying insecure people's regulatory strategies was provided by Vrtička, Bondolfi, Sander, and Vuilleumier (2012), who scanned the brains of people who were asked to naturally attend to or cognitively reappraise their emotional responses to unpleasant scenes. Avoidant participants showed increased prefrontal and anterior cingulate activation to unpleasant scenes and exhibited increases in dorsolateral prefrontal cortex and left amygdala activity during reappraisal.

These results suggest that avoidant people may be less efficient in using reappraisal strategies and need to engage in more effortful control for dealing with distress. Anxious participants showed increases in the right amygdala across the conditions, another sign of their heightened reactivity.

In a recent fMRI study, Moutsiana et al. (2014) provided evidence that infant attachment assessed at 18 months predicts neural responses to positive affect inductions at age 22. Specifically, adults who had been insecurely attached as infants showed greater activation in prefrontal regions and lower coactivation of nucleus accumbens with prefrontal cortex than adults who had been securely attached as infants. That is, attachment insecurity during infancy seems to be associated with relative inefficiency in the neural regulation of positive affect during adulthood and the need to devote more effortful control during positive affect inductions.

Considering longer-term neural effects of attachment insecurities, there is evidence that self-reports of attachment anxiety and avoidance are associated with deficits in the neural structure of brain regions implicated in emotion regulation, For example, Quirin, Gillath, Pruessner, and Eggert (2010) found that higher scores on the anxiety and avoidance ECR scales were associated with reduced hippocampal cell density, and Benetti et al. (2010) found that higher ECR anxiety scores were associated with reduced gray matter in the anterior temporal lobe. These findings are compatible with a neurotoxic model of stress-induced cell reduction in regions of the brain that can impair the process of emotion regulation in insecurely attached people. Recently, Moutsiana et al. (2015) found that attachment insecurity at 18 months was associated with larger amygdala volumes at 22 years. However, they did not find any evidence linking infant attachment status and hippocampal volume in young adulthood.

Some of the studies summarized in Table 7.3 compared the emotional reactions of people undergoing stressful experiences with those of controls, thereby revealing an additional benefit of attachment security (e.g., Berant et al., 2001a; Birnbaum et al., 1997; Mikulincer & Florian, 1998; Z. Solomon et al., 1998). Stressful events arouse negative emotions mainly among insecurely attached people. For secure people, there is often no notable difference in emotion between neutral and stressful conditions. Similar findings were obtained by researchers (e.g., Amir, Horesh, & Lin-Stein, 1999; Guttman-Steinmetz et al., 2012; Mikulincer et al., 1993) who studied the association between distress and objective characteristics of stressors (e.g., physical distance from areas hit by missiles, severity of problems). Insecure people were measurably affected by objective characteristics of stressors, but secure people seemed to be relatively calm even under stressful conditions, another indication that felt security is an effective stress buffer.

Attachment strategies are also manifested in emotional reactions to physical illnesses. There is evidence that attachment anxiety is associated with heightened distress among people suffering from physical illness (e.g., Bazzarian & Besharat, 2012; Vilchinsky, Haze-Filderman, et al., 2010; Vilchinsky, Dekel, Asher, Leibowitz, & Mosseri, 2013). However, in a prospective 6-month study of patients with acute coronary syndrome, Vilchinsky, Haze-Filderman, et al. (2010) found that a partner's supportiveness can buffer the observed anxious attachment–distress link. Attachment anxiety predicted heightened distress only when spouses did not actively support the patient. This detrimental effect of anxiety evaporated when spouses engaged in more supportive actions, thereby providing a dyadic sense of security for the anxious patient.

Overall, data support the hypothesis that secure people's optimistic appraisals and reliance on constructive ways of coping mitigate distress during periods of stress. They also indicate that anxious or avoidant attachment can interfere with effective coping and

increase the intensity of distress. In the long run, this means that attachment insecurities increase the risk for developing serious emotional problems, as shown in Chapter 13.

Management of Attachment-Related Threats

Attachment strategies are also evident in the way people deal with separation from a close relationship partner or the death of a spouse. As explained in Chapter 3, these attachment-related threats, which were among Bowlby's (1980) major concerns, are potent triggers of negative emotions and attachment strategies aimed at regulating emotions.

Reactions to Actual Separations and Relationship Breakups

Two of the studies summarized in Table 7.3 examined attachment-related differences in coping with divorce (Birnbaum et al., 1997) and temporary separations from a dating partner (J. Feeney, 1998). Attachment-anxious individuals were more likely to rely on emotion-focused coping strategies, and avoidant individuals on distancing strategies. D. Davis, Shaver, and Vernon (2003) noted similar coping strategies in a survey of more than 5,000 Internet respondents who described romantic relationship breakups. Avoidant respondents were less likely to seek support and more likely to cope with the breakup alone while avoiding new romantic involvements. Anxious respondents reacted with angry protests, heightened sexual attraction to the former partner, intense preoccupation with the lost partner, a lost sense of identity, and interference with school and work activities. Both anxious and avoidant individuals used alcohol and drugs as a means of coping with separation, which is not generally an effective coping strategy.

Anxious hyperactivating strategies during separation tend to be particularly manifested in intense preoccupation with the lost partner and urgent wishes to reestablish the broken relationship. For example, Madey and Jilek (2012) found that attachment anxiety among college students experiencing the dissolution of a romantic relationship was associated with more interest in getting back into the broken relationship and less readiness to start dating again. Similar findings were reported by Schönbrodt and Asendorpf (2012), who assessed instructions people give to an agent in a virtual social environment that is experiencing an unexpected separation: More anxious individuals instructed their protagonist to think more often about the spouse during the separation. In a 2-year prospective study of adjustment to divorce, Halford and Sweeper (2013) found that attachment anxiety predicted more persistent connection to the former partner. However, it seems that anxious people's longing for the lost partner can be mitigated by access to new partners, who can become new sources of security. In two experiments, Spielmann, MacDonald, and Wilson (2009) found that the link between anxiety and longing for an ex-partner could be reduced by randomly assigning anxiously attached individuals to conditions in which they were convinced that they would easily find a new partner.

Several studies have demonstrated that attachment anxiety is linked with longer and more intense distress following a romantic relationship breakup (D. Davis, Shaver, & Vernon, 2003; Fagundes, Diamond, & Allen, 2012; Feeney & Noller, 1992; L. A. Lee, Sbarra, Mason, & Law, 2011; Moller, McCarthy, & Fouladi, 2002; Moller, Fouladi, & McCarthy, 2003; Pistole, 1995; Sbarra, 2006; Sbarra & Emery, 2005; Simpson, 1990; Sprecher, Felmlee, Metts, Fehr, & Vanni, 1998), divorce (Birnbaum et al., 1997; Halford & Sweeper, 2013; Yárnoz-Yaben, 2010), wartime separations from marital partners (Borelli, Sbarra, et al., 2013; 2014; Cafferty, Davis, Medway, O'Hearn, & Chappell, 1994; Medway, Davis, Cafferty, O'Hearn, & Chappell, 1994), temporary separations

from romantic partners (L. M. Diamond, Hicks, & Otter-Henderson, 2008; J. Feeney, 1998; Fraley & Shaver, 1998;), and parasocial separation from favorite television characters (J. Cohen, 2004). In a diary study conducted across 12 consecutive days, L. M. Diamond et al. (2008) found that attachment anxiety was associated with difficulty sleeping, more severe physical symptoms, and higher levels of salivary cortisol during and following days of physical separation from a romantic partner brought about by work-related travel. In a related study, Fagundes et al. (2012) found that self-reports of attachment anxiety in relation to mother assessed at age 14 predicted more emotional problems and physical symptoms following the loss of a romantic partner at age 18. Most of the reviewed studies have also found that reports of attachment security are associated with faster emotional recovery and adjustment. For example, Sbarra (2006) collected daily data for 4 weeks from young adults who had recently experienced a relationship breakup and found that reports of security were associated with faster recovery from sadness and anger, an association mediated by acceptance of the separation.

For avoidant individuals, the findings depended on the nature of the separation. Avoidance was associated with heightened distress following divorce and wartime separations but not following temporary separations from, or permanent breakups with, dating partners. We therefore conclude that avoidant people, who can handle the distress of brief separations or the dissolution of casual bonds, are less successful in dealing with major separations requiring reorganization of relational routines, goals, and plans. This fits with other reviewed evidence that avoidant defenses collapse under pressure.

For example, there is evidence that deactivating strategies can collapse and become ineffective in dealing with the pain of separation when avoidant people lack necessary self-regulation resources. For example, Fagundes et al. (2012) found, as already mentioned, that avoidant attachment to mother at age 14 predicted less distress following separation at age 18, but this was the case only among adolescents who showed physiological signs of self-regulation in their parasympathetic nervous system activity during a stress-inducing task (indexed by high respiratory sinus arrhythmia [RSA]). For adolescents with lower RSA, avoidant attachment predicted more distress in response to the separation. In line with these findings, Sbarra and Borelli (2012) examined the interactive effects of avoidant attachment (in the ECR) and RSA on self-esteem among recently separated adults. They found that highly avoidant people who showed heightened RSA during a divorce-related mental activation task showed improvement in their self-esteem over 3 months. In contrast, highly avoidant people who showed RSA decreases while reflecting on the separation showed lower self-esteem 3 months later.

Reactions to Separation-Related Thoughts

Studies that induced thoughts about hypothetical or actual separations also provide useful information about attachment-related differences in emotion regulation. Using the projective Separation Anxiety Test, Mayseless, Danieli, and Sharabany (1996) and Scharf (2001) found that more secure people (measured by either self-reports or the AAI) coped more effectively with both mild and severe separations and benefited from a balance between self-reliance and reliance on others for support. Mayseless et al. (1996) also found that whereas avoidant people refrained from dealing with the threat, anxious people reacted to the imagined separation with strong self-blame and intense distress. Similarly, Meyer, Olivier, and Roth (2005) asked young women to imagine that their romantic partner planned to spend time with a highly attractive woman and found that avoidant attachment was associated with distancing responses, such as ending the relationship or

avoiding contact with the partner. Attachment anxiety was associated with more intense distress and more attempts to persuade the partner to change his mind. This distress intensification was also noted by L. A. Lee et al. (2011), who found that more anxious participants (assessed with the ECR) showed higher levels of blood pressure reactivity while mentally reflecting on a separation experience.

Using fMRI to observe brain processes while recalling a painful separation, Gillath, Bunge, Shaver, Wendelken, and Mikulincer (2005) found that attachment anxiety was associated with higher activation of the left anterior temporal pole and left hippocampus, areas associated with the recall of sad thoughts, and lower activation of the orbitofrontal cortex, an area associated with emotional control. That is, anxious people seemed unable to control the reactivation of separation memories. This conclusion is reinforced by findings from H. N. Bailey, Paret, Battista, and Xue (2012), who used a Stroop task and found that attachment anxiety was associated with greater interference in naming the color in which separation-related words were printed, a cognitive sign of lack of control over intrusion of separation-related thoughts.

De Wall et al. (2012) have reported signs of distress hyperactivation in the brains of anxious people. They found that in response to a simulated experience of social exclusion within an MRI scanner, self-reports of anxious attachment were related to heightened activity in regions involved in distress activation: the dorsal anterior cingulate cortex (dACC) and anterior insula. Of special interest, these brain reactions to social exclusion were attenuated by asking people to reflect on their security-providing attachment figure—that is, by security priming (Karremans et al., 2011).

In a series of three studies, Mikulincer, Florian, Birnbaum, and Malishkevich (2002) examined another reaction to separation. Participants were asked to imagine being separated from a loved partner and then to perform a word completion task that measured the accessibility of death-related thoughts. Participants who scored higher on attachment anxiety reacted to separation reminders with more death-related thoughts. In other words, for anxious individuals, separation evoked thoughts of death, which might partially explain why attachment-anxious people tend to experience intense distress and despair following separation.

This mental equation of separation and death was also noted by Hart et al. (2005), who examined defensive reactions to separation and reminders of death. Undergraduates were asked to think about their own death, separation from a close relationship partner, or a control theme, and then to report their attitudes toward the writer of a pro-American essay. People who scored relatively high on attachment anxiety or avoidance rated the pro-American writer more favorably in the death than in the control condition—the typical defensive reaction to mortality salience (discussed later in this chapter). However, anxious individuals, but not avoidant ones, also reacted more favorably to the pro-American writer in the separation condition. In other words, anxious people showed the same defensive reaction to reminders of death and separation.

For avoidant people, the main method of dealing with separation-related thoughts is to suppress them. In a pair of experimental studies, Fraley and Shaver (1997) asked participants to write about whatever thoughts and feelings they experienced while being asked to suppress thoughts about a romantic partner leaving them for someone else. The ability to suppress these thoughts was assessed by the number of times they appeared in participants' stream of consciousness following the suppression period and by the level of physiological arousal (skin conductance) during the suppression task. As expected, more avoidant people were more able to suppress separation-related thoughts, as indicated by less frequent thoughts of loss following the suppression task and lower skin conductance

during the task. In accord with this finding, Edelestein and Gillath (2008) used a Stroop task and found that avoidance was associated with reduced interference (faster RTs) in naming the color in which separation-related words were printed, reflecting avoidant people's tendency to block access to separation-related thoughts.

Mikulincer et al. (2004) replicated and extended Fraley and Shaver's (1997) findings while assessing, in a Stroop task, the cognitive activation of previously suppressed thoughts about a painful separation. Avoidant individuals were able to suppress thoughts related to the breakup; for them, such thoughts were relatively inaccessible, and their own positive self-traits became even more accessible than usual (presumably for defensive reasons). However, their ability to maintain this defensive stance was disrupted when a cognitive load—remembering a seven-digit number—was added to the experimental task. Under high cognitive load, avoidant individuals suddenly evinced high availability of thoughts of separation and *negative* self-traits. That is, the suppressed material resurfaced in experience and behavior when a high cognitive demand was imposed. This fragility of avoidant defenses has been further documented in more recent studies. Kohn, Rholes, and Schmeichel (2012) found that whereas avoidant attachment was associated with less access to early memories of negative attachment experiences in a neutral condition, a cognitive-depletion induction led to heightened access to these memories among more avoidant people. Similarly, Chun et al. (2015) found that avoidant participants' ability to disengage attention from contempt faces was impaired when they were asked to rehearse a seven-digit number while performing the attention task.

The fragility of avoidant defenses can also be manifested in physiological signs of distress. For example, Ehrenthal, Friederich, and Schauenburg (2011) found that self-reports of avoidant attachment were associated with impaired blood pressure recovery following the recall of a painful separation. And Rifkin-Graboi (2008) found that dismissingly avoidant people (assessed with the AAI), as compared with secure people, showed greater cortisol reactivity during and after tasks that involved thinking about separation and loss experiences. Using the AAI in a sample of women with eating disorders, Dias, Soares, Klein, Cunha, and Roisman (2011) found that dismissing avoidants showed increased electrodermal reactivity during the interview while recalling and reflecting on painful experiences with attachment figures.

While probing further into the regulatory mechanisms underlying avoidant defenses, Fraley, Garner, and Shaver (2000) asked whether they function in a *preemptive* manner (directing attention away from the information or encoding it in a shallow way) or in a *postemptive manner* (repressing material that has already been encoded). Participants listened to an interview about the loss of a relationship partner and were asked later to recall details of the interview, either soon after hearing them (Study 1) or at various delays ranging from half an hour to 21 days (Study 2). An analysis of forgetting curves revealed that (1) avoidant people initially encoded less information about the interview and (2) people differing in attachment styles forgot encoded information at the same rate. Thus avoidant defenses sometimes act preemptively, by blocking threatening material from being encoded. In a subsequent study, Fraley and Brumbaugh (2007) found that more avoidant individuals performed worse on tasks assessing both explicit and implicit memories of information about the loss of a sister. Interestingly, this memory deficiency was found even when participants' motivation was increased via a monetary reward for recalling the loss-related information.

These findings imply that avoidant people are likely to be vigilant to attachment-related information so that its encoding can be blocked. In support of this idea, Maier et al. (2005) found that avoidant attachment (assessed with the AAI) was associated

with lower identification thresholds (less exposure time needed to identify a picture) for pictures depicting affect-laden human faces and social interactions. In a more direct test of avoidant people's preemptive vigilance, Zheng, Zhang, and Zheng (2015) found that avoidant people (assessed with the ECR) tended to allocate more cognitive resources when encoding emotional faces at an early stage (170 miliseconds) during an old/new Evoked Related Potentials task. Similarly, Chun et al. (2015) found that more avoidant people (in the ECR) were more vigilant toward contempt faces when the faces were presented for 100 miliseconds but quickly disengaged from them when the faces were presented for 750 miliseconds. Thus avoidant defenses seem to demand perceptual vigilance to emotional stimuli at an early stage of information processing, in order to keep them from being processed further. We suspect that this is the default avoidant defense. Postemptive strategies are likely to be called upon only if the preemptive approach fails or when a threatening memory is aroused by association.

Reactions to the Death of a Close Relationship Partner

Attachment strategies are also seen in emotional reactions to the death of a close partner. On the one hand, secure attachment allows a person to work through a loss experience and return to normal functioning (Mikulincer & Shaver, 2012a). Secure people can recall and think about a lost partner without extreme difficulty and can discuss the loss coherently in the same way they are able, in the AAI, to discuss memories of their early interactions with parents (Hesse, 2008; Shaver & Tancredy, 2001). Moreover, their constructive coping strategies allow them to experience and express grief and distress without feeling overwhelmed by emotion and without total disruption of normal functioning (Stroebe et al., 2005). On the other hand, attachment insecurities may increase the risk for more atypical forms of mourning: chronic mourning and prolonged absence of conscious grieving (Bowlby, 1980). Whereas anxiously attached people's tendency to intensify distress and ruminate about losses encourages chronic mourning, avoidant people's tendency to suppress negative emotions encourages an absence of conscious grieving (Mikulincer & Shaver, 2008b, 2012a ; Shaver & Fraley, 2008).

Several studies support the idea that secure attachment facilitates emotional adjustment during bereavement (Field, Tzadikario, Pel, & Ret, 2014; Fraley & Bonanno, 2004; Scheidt et al., 2012; Van Doorn, Kasl, Beery, Jacobs, & Prigerson, 1998; Waskowic & Chartier, 2003; Wayment & Vierthaler, 2002). In a longitudinal study of 59 adults who had recently lost a loved one, Fraley and Bonanno (2004) found that people classified as secure with respect to attachment 4 months after the loss reported relatively low levels of bereavement-related anxiety, grief, depression, and posttraumatic distress 4 and 18 months after the loss. There is extensive evidence concerning the link between anxious attachment and heightened grief reactions (Boelen & Klugkist, 2011; Currier, Irish, Neymeyer, & Foster, 2015; Field, Orsini, Gavish, & Packman, 2009; Field & Sundin, 2001; Fraley & Bonanno, 2004; Ho, Chan, Ma, & Field, 2013; King & Werner, 2011; Meier, Carr, Currier, & Neimeyer, 2013; Meij et al., 2007a, 2007b; Scheidt et al., 2012; Shevlin, Boyda, Elklit, & Murphy, 2014; Wayment & Vierthaler, 2002). For example, focusing on a sample of 74 bereaved spouses, Field and Sundin (2001) found that higher levels of anxious attachment 10 months after the loss predicted higher levels of distress 4, 15, and 50 months later.

With respect to avoidance, some studies have found no significant association between this dimension and grief severity (Field & Sundin, 2001; Fraley & Bonanno, 2004; Wayment & Vierthaler, 2002). However, other studies have yielded significant

associations between avoidance and more severe grief symptoms (Boelen & Klugkist, 2011; Currier et al., 2015; Jerga et al., 2011; King & Werner, 2011; Meier et al., 2013; Meij et al., 2007b; Shevlin et al., 2014). For example, Jerga et al. (2011) found that avoidant attachment was positively associated with prolonged grief symptoms but not with typical grief symptoms. That is, avoidant people experienced long-term difficulties adjusting to the death of a relationship partner, even though they did not necessarily experience more intense typical symptoms earlier on. In addition, Jerga et al. (2011) found that relationship-specific avoidance was negatively associated with both typical and prolonged grief symptoms. However, other findings indicated that this association disappeared when measures of relationship closeness and strength were controlled, suggesting that avoidant individuals may maintain relatively weak and emotionally distant relationships with the deceased, which in turn leaves them with less to grieve about. In other words, it may not be avoidant attachment per se that protects avoidant individuals from grief symptoms; it may be the weakness of the emotional bonds they have to contend with when a relationship partner dies.

Wayment and Vierthaler (2002) reported that avoidance was associated with heightened levels of somatic symptoms following the loss of a spouse, implying that avoidant defenses might block conscious access to pain and distress but without preventing the subtler and less conscious somatic reactions to loss (see findings reviewed earlier in this chapter concerning avoidant people's heightened physiological reactivity to stress). Parkes (2003) found that avoidant attachment was associated with more severe problems in expressing affection and grief during bereavement, and Gassin and Lengel (2011) found that avoidant attachment predicted difficulties in forgiving the deceased person.

In two studies, Fraley and Bonanno (2004) and Parkes (2003) found that high levels of both avoidance and attachment anxiety (a combination called fearful avoidance; see Chapter 4) produced the most severe mourning complications. These findings were replicated and extended by Mancini, Robinaugh, Shear, and Bonanno (2009) who assessed complicated grief symptoms 4 and 18 months after the loss of a spouse. More anxious and fearful avoidant participants showed a marked increase in complicated grief from 4 to 18 months regardless of the quality of the relationship with the deceased. Dismissing avoidant participants also showed an increase in complicated grief during the study period, but this increase was found only when participants reported lack of satisfaction during the relationship.

There is also some evidence concerning individual differences in continuing attachment to a lost partner. For example, Mancini and Bonanno (2012) assessed the accessibility of the deceased's mental representation in a Stroop task in a sample of complicated and asymptomatic grievers. In these two groups, attachment anxiety and avoidance uniquely predicted increased accessibility of the deceased's name following subliminal exposure to a threat-inducing word. The data suggest that attachment insecurities are associated with heightened access in a threatening context of mental representations of the deceased, thereby contributing to maladaptive reliance on the deceased as an attachment figure.

Using the Continuing Bond Scale, several studies have found that attachment anxiety is associated with more positive and persistent thoughts about the deceased (Currier et al., 2015; Field et al., 2009; Field & Sundin, 2001; Ho et al., 2013; Sochos & Bone, 2012; Waskowic & Chartier, 2003). Similarly, Nager and de Vries (2004) content analyzed memorial Web sites created by adult daughters for their deceased mothers and found that more anxiously attached daughters were more likely to write idealized descriptions of their mothers (e.g., "You were the most beautiful, strongest, determined, smartest, fascinating woman in the world").

Experiencing and Managing Death Anxiety

Adult attachment studies have explored whether attachment strategies are manifested in the experience and management of death anxiety. For example, a number of studies conducted in Mikulincer's laboratory focused on attachment-style differences in the strength of death anxiety, assessed in terms of overt fear of death (Florian & Mikulincer, 1998; Mikulincer et al., 1990), unconscious expressions of this fear (responses to projective TAT cards; Mikulincer et al., 1990), or the accessibility of death-related thoughts (the number of death-related words produced in a word completion task; Mikulincer & Florian, 2000; Mikulincer, Florian, Cowan, & Cowan, 2002).

Anxious individuals intensify death concerns and keep death-related thoughts active in working memory. That is, attachment anxiety is associated with heightened fear of death at both conscious and unconscious levels, as well as heightened accessibility of death-related thoughts, even when no death reminder is present. Avoidant individuals suppress overt death concerns and exhibit dissociation between their conscious claims and unconscious dynamics. Avoidance is related to both low levels of self-reported fear of death and heightened death-related anxiety assessed with a projective measure.

Attachment-related differences have also been found in people's construal of death anxiety (Florian & Mikulincer, 1998; Mikulincer et al., 1990). Anxiously attached people tend to attribute this fear to the loss of social identity after death (e.g., "People will forget me"), whereas avoidant people tend to attribute it to the unknown nature of the hereafter (e.g., "uncertainty about what to expect"). These findings are compatible with secondary attachment strategies. Anxious people hyperactivate worries about rejection and abandonment, viewing death as yet another relational setting in which they can be abandoned or forgotten. Avoidant people work to sustain self-reliance and strong personal control, which leads to fear of the uncertain and unknown aspects of death—threats to perceived control.

A related line of research examined attachment-related differences in the way people manage anxiety aroused by death reminders. According to terror management theory (Pyszczynski et al., 2015), human beings' knowledge that they are destined to die, coexisting with strong wishes to perceive themselves as special, important, and immortal, makes it necessary for them to engage in self-promotion, defend their cultural worldviews, and deny their animal nature. Many studies have shown that experimentally induced death reminders lead to more negative reactions to the human body, moral (i.e., worldview) transgressors, and members of outgroups (see Pyszczynski et al., 2015, for a review).

Although worldview validation has been assumed to be a normative defense against universal existential threats (Pyszczynski et al., 2015), this response is more characteristic of insecure than of secure people. For example, experimentally induced death reminders produced more severe judgments and punishments of moral transgressors, greater willingness to die for a cause, and more support for a conservative president candidate only among insecurely attached people, either anxious or avoidant (Caspi-Berkowitz, 2003; Mikulincer & Florian, 2000; Weise et al., 2008). Securely attached people were less affected by death reminders. Moreover, the experimental priming of attachment security buffered the effects of mortality salience on increased support for violent measures against terrorists (Weise et al., 2008) and increased support for the war in Iraq and harsh foreign policy toward North Korea (Gillath & Hart, 2010).

Other studies also found that insecurely attached people reacted to mortality salience with increased adherence to culturally consensual beliefs about romantic bonds (R. Smith & Massey, 2012) and a heightened self-enhancing tendency of naming their children

after themselves (Vicary, 2011). Recently, Anglin (2014) reported that fearful avoidant participants reacted to death reminders with an exacerbation of their habitual relational ambivalence—heightened strivings to repair troubled relationships and lowered expectations for improving such relationships.

Some of the studies reveal ways in which secure people react to death reminders. Mikulincer and Florian (2000) found that secure people reacted to mortality salience with an increased sense of symbolic immortality—a constructive, transformational strategy that, while not solving the unsolvable problem of death, leads people to invest in their children's care and to engage in creative, growth-oriented activities whose products live on after death. Secure people also reacted to mortality salience with heightened attachment needs—a more intense desire for intimacy in close relationships (Mikulincer & Florian, 2000; R. Smith & Massey, 2012), heightened reliance on a romantic partner in times of need (Cox et al., 2008), and greater willingness to engage in social interactions (Taubman-Ben-Ari, Findler, & Mikulincer, 2002). In addition, Yaakobi, Mikulincer, and Shaver (2014) found that parenthood can serve as a buffer against mortality salience mainly among more secure people (those scoring relatively low on the avoidance dimension). Mortality salience led to more vivid and accessible parenthood-related cognitions, parenthood-related thoughts buffered the effects of mortality salience on death-thought accessibility, and thinking about infertility led to heightened death-thought accessibility mainly among participants who scored relatively low on attachment-related avoidance but not among highly avoidant people.

Caspi-Berkowitz (2003) also found that secure people reacted to death reminders by strengthening their desire to care for others. In her study, people read hypothetical scenarios in which a relationship partner was in danger of death; the participants were then asked about their willingness to endanger their own life to save their partner's life. Securely attached people reacted to death reminders with heightened willingness to sacrifice themselves. Insecure people were generally averse to self-sacrifice and reacted to death reminders with less willingness to save others' lives. It's notable that insecure individuals, who seem more ready than secure ones to die for their self-enhancing cultural worldviews, are more reluctant to sacrifice themselves for a particular other person. (See our related discussion of attachment and altruism in Chapter 11.)

These studies imply that, even when faced with their biological finitude, secure people maintain felt security. They pursue the primary attachment strategy (seeking proximity to others); they heighten their sense of social connectedness and symbolically transform the threat of death into an opportunity to contribute to others and grow personally. This makes it seem that being part of a loving, accepting human world—having strong emotional and caring bonds with others—is a vehicle for self-transcendence (being part of a larger entity that transcends one's biological self). It promotes a sense of symbolic immortality, making it less necessary to validate one's worldview and promote oneself and one's own group. This suggests to us that fostering attachment security might contribute to world peace, whereas making people feel insecure, either dispositionally (in families) or contextually (in political speeches), may contribute to perpetual conflict and premature death. (See Chapter 16 for further thoughts on this important matter.)

Experiencing and Managing Anger

Adult attachment researchers have also studied the experience and management of anger. In Bowlby's (1973) analysis of emotional reactions to separation, he viewed anger as a

functional response to separation from an attachment figure, if it succeeded in gaining an unreliable figure's attention or caused him or her to become more reliably available. Anger is functional to the degree that it is not intended to hurt or destroy the attachment figure but only to discourage his or her frustrating or frightening behavior and to reestablish a warm and satisfying relationship (what Bowlby, 1973, called "anger of hope.") However, Bowlby (1973) also noted that anger can become so intense that it alienates the partner or becomes vengeful rather than corrective (what he called "anger of despair.) In these cases, anger has the potential to destroy the partner and the relationship that one fears losing.

Functional experiences and expressions of anger are typical of secure individuals. Mikulincer (1998b) found that, when confronted with anger-eliciting events, secure people held more optimistic expectations about their partner's subsequent behavior (e.g., "He/she will accept me") and made more reality-attuned appraisals of his or her intentions than insecure people. Only when there were clear indications (provided by the experimenter) that a partner actually had acted with hostile intent did secure people attribute hostility to the partner and react with anger. Moreover, secure people's accounts of anger-eliciting events were characterized by attempts to repair the relationship, engaging in adaptive problem solving, and experiencing positive affect following the temporary period of discord (Mikulincer, 1998b). Barret and Holmes (2001) also found that greater attachment security was associated with more constructive and less aggressive responses to hypothetical anger-eliciting provocations.

The constructive nature of secure people's anger was also demonstrated in a study by Zimmermann, Maier, Winter, and Grossmann (2001). Adolescents performed a frustrating task with the help of a friend, and the researchers assessed disappointment and anger during the task as well as negative behaviors toward the friend (e.g., rejecting the friend's suggestions without discussion). Disappointment and anger were associated with more frequent disruptive behavior only among insecure adolescents (identified with the AAI). Among secure adolescents, these emotions were associated with less rather than more disruptive behavior. Therefore, secure people's anger seemed to be well regulated and channeled in useful directions.

Attachment insecurities, of either the anxious or the avoidant kind, are associated with more intense bouts of anger, hostility and aggression in response to frustration or other anger-eliciting events (Aloia & Solomon, 2015; Brassard, Darveau, Péloquin, Lussier, & Shaver, 2014; Brenning & Braet, 2013; Buunk, 1997; Calamari & Pini, 2003; Consendine, Fiori, & Magai, 2012; L. M. Diamond & Hicks, 2005; D. G. Dutton, Saunders, Starzomski, & Bartholomew, 1994; Fossati et al., 2009; Magai, Hunziker, Mesias, & Culver, 2000; Meesters & Muris, 2002; Mikulincer, 1998b, Troisi & D'Argenio, 2004; Zimmermann, 2004). In addition, insecure people are perceived by their partners to be more hostile and aggressive (Kerns & Stevens, 1996; Kobak & Sceery, 1988). These hostile responses are evident both behaviorally and cognitively. Kobak et al. (1993) found that avoidant teens (identified with the AAI) displayed more dysfunctional anger than secure teens toward their mothers and engaged in less cooperative dialogue during a problem-solving interaction. Kirsh (1996) found that more avoidant people had better memory for figural depictions of anger, and Woike, Osier, and Candela (1996) found that more anxious people wrote more violent projective stories in response to TAT pictures. Attachment insecurities are also associated with relationship violence, as explained and documented in Chapter 10.

The dysfunctional nature of insecure people's anger has been observed in dyadic interactions. Attachment anxiety is associated with displaying and reporting more anger

and hostility while discussing an unresolved problem with a dating partner (Simpson et al., 1996) or after being angered by their partner (Nisenbaum & Lopez, 2015). And Rholes, Simpson, and Oriña (1999) found that women's avoidance was associated with more intense (and observable) anger toward their male partner while waiting for an anxiety-provoking task, and this was especially so when women were more distressed and received less support from their partner. It therefore seems that avoidant women's lack of confidence in their partner's support might have caused them to become angry when they were seeking support. Rholes et al. (1999) also found that, although women's attachment anxiety did not predict anger intensity during the waiting period, after they were told they would not really have to perform the task, more anxious women evinced more intense bouts of anger toward their partner. This was particularly true for women who had been more upset during the waiting period and had sought more support from their partner. Thus it seems that anxious women's strong need for reassurance encouraged suppression of anger during support seeking, but their anger surfaced when support was no longer necessary.

Anxious people's problems in managing anger have also been studied with physiological measures. L. M. Diamond and Hicks (2005) exposed young men to two anger-provoking inductions (math tasks accompanied by discouraging feedback from the experimenter; recollection of a recent anger-eliciting event) and recorded participants' vagal tone (indexed by resting levels of respiration-related variability in heart rate), a common index of parasympathetic down-regulation of negative emotion. Diamond and Hicks found that attachment anxiety was associated with lower vagal tone, a sign that the parasympathetic nervous system responded less quickly and flexibly to the stressful tasks and that attachment-anxious individuals recovered poorly from frustration and anger. This emotional hyperactivation was also evident in brain responses (as indexed with fMRI). Vrtička, Andersson, Sander, and Vuilleumier (2008) exposed participants to angry or neutral faces and found that those higher in attachment anxiety displayed greater activity in the amygdala in response to the angry faces, a neural region known to underlie emotional reactivity to threats.

Avoidant people's management of anger is characterized by attempts to sidestep negative emotions and suppress anger. As a result, although sometimes one cannot record any overt expression of anger, their anger is still expressed in unconscious or unattended ways or takes the form of otherwise unexplained hostility or hatred for a partner (which Mikulincer, 1998b, labeled "dissociated anger"). In support of this view, Mikulincer (1998b) found that avoidant people did not *report* intense anger in response to a partner's negative behavior, but they displayed intense physiological arousal nevertheless. They also tended to attribute hostility to a partner even when there were clear indications (provided by the experimenter) of the partner's nonhostile intent (Mikulincer, 1998b) and to rely on distancing strategies and emotional suppression to cope with anger-eliciting events (Brassard et al., 2014; Hudson & Ward, 1997; McKee, Roring, Winterowd, & Porras, 2012; Nisenbaum & Lopez, 2015). This dissociation was also noted in Dan and Raz's (2012) study of early attentional responses (indexed by amplitude of event-related potentials in the brain) to angry faces. Participants scoring higher on avoidant attachment revealed higher amplitudes to angry faces (compared to neutral faces) in the early components of the response (50–120 milliseconds poststimulus) but not in later components (200–400 milliseconds). This might reflect avoidant people's automatic tendency to first attend to the valence of faces in order to quickly identify angry ones, and then to dismiss or emotionally withdraw from them.

Cognitive Access and the Architecture of Emotional Experiences

Theoretically, attachment strategies should influence the access a person has to emotion-related information; the way he or she attends, encodes, retrieves, understand, and react to this information; and the extent he or she is aware to emotional states and fluctuations. In this section, we review relevant studies that have examined attachment-related variations in the cognitive access and architecture of emotional experiences.

Access to Emotional Memories

In a pioneering study of emotional memories, Mikulincer and Orbach (1995) examined attachment-related differences in the way people retrieve early memories of specific emotions. Participants were asked to recall early experiences of anger, sadness, anxiety, or happiness, and their memory retrieval latencies were recorded as indicators of cognitive accessibility. Participants also rated the intensity of emotions in each recalled event.

Avoidant people exhibited the poorest access (longest latencies) to sad and anxious memories; anxious people had the quickest access to such memories, and secure people fell in between. Secure people took less time to retrieve positive than negative emotional memories, whereas anxious people had better access to negative than positive memories. Moreover, avoidant people rated focal emotions (e.g., sadness when instructed to retrieve a sad memory) and nonfocal emotions (e.g., anger when instructed to retrieve a sad memory) as less intense than secure people. Anxious people reported experiencing very intense focal *and* nonfocal emotions when asked to remember instances of anxiety, sadness, and anger. In contrast, secure people rated focal emotions as much more intense than nonfocal emotions.

The findings support the idea that secure people rely on constructive and effective emotion regulation strategies. They acknowledge distress, retain access to negative memories, and process these experiences fully. However, they also have better access to positive memories and tend not to suffer from a spread of activation from one negative memory to another. Van Emmichoven, van IJzendoorn, de Ruiter, and Brosschot (2003) noted this open attitude toward distress-eliciting information even in a sample of patients with anxiety disorders. It is possible that this open and adaptive pattern of emotional regulation explains Behringer et al.'s (2011) finding that securely attached new mothers (as assessed by the AAI and CRI during pregnancy) showed heightened sadness and anxiety 2 weeks postpartum and a subsequent return to baseline (as assessed during pregnancy) of these emotions following 2, 4, and 6 months. Insecure mothers showed a stable increase in sadness and emotions after delivery that did not return to baseline even after 6 months. That is, attachment security seems to help new mothers express and recover from negative emotions.

Mikulincer and Orbach's (1995) finding regarding avoidant people's reduced access to negative emotional memories is another indication of their attempts to inhibit the cognitive processing of distress-eliciting outer or inner stimuli. This finding was replicated by Dykas et al. (2014) using the AAI to assess adolescents' state of mind with respect to attachment. Edelstein et al. (2005) also found evidence for avoidant people's poor access to negative memories in a study they conducted of a sample of child sexual abuse (CSA) survivors. More avoidant people were less accurate in recalling specific, well-documented, severe CSA incidents that had occurred approximately 14 years earlier. Interestingly, these memory problems were reduced among avoidant people who reported

relatively high levels of maternal support after the abuse, highlighting the buffering effect of security-enhancing interactions.

In a related study, Haggerty, Siefert, and Weinberger (2010) instructed adults to freely recall childhood experiences before the age of 14 years without explicitly asking them to remember a particular emotionally laden memory. Whereas both attachment anxiety and avoidance were linked to remembering a greater number of negative childhood memories, only avoidance was associated with reduced emotional intensity of these memories, a finding similar to that reported by Mikulincer and Orbach (1995). Further studies have shown that avoidance is associated with less coherent memories of interactions with romantic partners (Sutin & Gillath, 2009) and lower levels of narrative elaboration of both childhood and adolescent memories (McCabe & Peterson, 2011). Interestingly, Sutin and Gillath (2009) found that exposure to insecurity primes (i.e., thinking about a nonresponsive partner) led to less coherent memories. However, Qin, Ogle, and Goodman (2008) reported that attachment orientations were not linked to the accuracy of memories for childhood experiences, as assessed with parents' reports of childhood events that these adults had (or had not) recalled.

Mikulincer and Orbach's (1995) finding that attachment anxiety was linked to easy access to negative emotional memories and impaired control of the spread of activation from focal emotions to nonfocal ones fit with the theoretical portrayal of anxious people as having an undifferentiated, chaotic emotional architecture. They also fit with Roisman et al.'s (2004) findings concerning people's facial expressions during the AAI. Whereas secure people's facial expressions were highly congruent with the valence of the childhood events they were describing, anxious people exhibited angry or anxious facial expressions while speaking about neutral or positive childhood experiences. According to Roisman et al. (2004), these discrepancies reflect anxious individuals' confusion and emotional dysregulation when being asked to talk about emotionally charged experiences.

Pereg and Mikulincer's (2004) studies of the cognitive effects of induced negative mood provide further evidence of insecure people's problems in processing emotional experiences. In two studies, participants were assigned to a negative mood or control condition, and then incidental recall of positive and negative information (Study 1) or causal attributions of a negative event (Study 2) were assessed. Negative mood (as compared to the control condition) led secure participants to recall more positive information and less negative information and to attribute a negative event to less global and stable causes. This is a mood-incongruent pattern of cognition, which is likely to inhibit the spread of negative affect and activate competing positive cognitions (positive recalled information, attributions that maintain a positive view of a partner). As a result, secure people are able to work against the pervasive effects of the negative mood induction and maintain or restore emotional equanimity. In contrast, more anxious participants reacted to the induced negative mood with heightened recall of negative information and an increased tendency to attribute a negative event to more global and stable causes. This is a mood-congruent pattern of cognition, which favors the spread of negative affect in memory and heightens access to distress-eliciting thoughts. These negative cognitions can exacerbate anxious people's chronic distress and negative views of others, and thus contribute to continued activation of the attachment system.

Pereg and Mikulincer's (2004) studies also indicated that the memories and causal attribution patterns of avoidant people were not significantly affected by induced negative mood. Avoidant people seemed to exclude negative affect from awareness and were therefore less likely to use it in cognitive processing. This is similar to the preemptive

exclusion of negative information we discussed earlier in connection with Fraley, Garner, et al.'s (2000) memory studies.

Cognitive and Brain Reactions to Emotional Stimuli

There is accumulating evidence that attachment strategies are manifested in the way people react to emotional stimuli. Atkinson et al. (2009) examined mothers' attention to emotional information using a Stroop task and reported that insecure mothers (in the AAI) showed greater Stroop interference for negative emotional words, reflecting heightened difficulty in disengaging attention from these emotions. Similarly, using data from participants who completed a Stroop task during fMRI, Warren et al. (2010) found that attachment insecurities are associated with heightened color-naming interference for negative emotional words and increased activity in prefrontal cortical regions associated with emotion regulation (e.g., right orbitofrontal cortex) and cognitive control (e.g., left dorsolateral prefrontal cortex) during exposure to these words. Again, it seems that attachment insecurities involve vulnerability to distraction by negative emotional clues and that greater cognitive control is required to attend to task-relevant, nonemotional information.

However, the kind of insecurity—anxious or avoidant—seems to determine the specific ways in which people react to this vulnerability. Whereas avoidant individuals attempt to control the expression of emotion and distance from it, anxious ones' physiological and behavioral reactions can further exacerbate difficulties in disentangling attention from the emotional experience. For example, Rognoni, Galati, Costa, and Crini (2008) assessed EEG frontal asymmetry while participants watched video clips inducing happiness, fear, or sadness. Whereas more avoidant people showed no fluctuation in frontal asymmetry in response to negative emotions, more anxious people showed wider frontal right activation in response to these emotions, a sign of threat-related activation in the brain. Similarly, Zilber, Goldstein, and Mikulincer (2007) found that more anxious participants (assessed with the ECR) showed greater late positive brain-related potential (LPP) amplitudes to distress-eliciting pictures, another sign of persistent attention. This response was not observed for positive or neutral pictures.

Avoidant people's tendency to control attention has been observed in a series of studies conducted by Gillath, Giesbrecht, and Shaver (2009). They examined associations between ECR scores and performance on attachment-unrelated attention tasks, a psychological refractory period (PRP) task assessing ability to switch attention rapidly from one stimulus to another and a flanker task assessing ability to resist distracters. As expected, avoidant attachment predicted better performance on both tasks, and the effects remained significant even after controlling for other personality traits. However, findings also revealed that thinking about a past attachment-related injury eliminated avoidant participants' superior attentional performance. In summary, avoidant people are generally skilled at regulating their attention, but their performance can be hampered by reminders of episodes of rejection, separation, or loss.

There is also evidence that avoidant people's attentional control includes the ability to inhibit brain and cognitive responses to distress-eliciting stimuli. For example, Suslow et al. (2009) used fMRI to examine differences in automatic brain reactivity to sad and happy faces as a function of attachment-related avoidance (assessed with the RSQ). As expected, avoidance was inversely associated with activity in the amygdala, the insula, and the primary somatosensory cortex (BA 3) to sad faces. Subsequently, Suslow, Dannlowski, Arolt, and Ohrmann (2010) found that avoidant attachment (assessed with the

RSQ) was associated with inhibition of affective priming effects of subliminal presentations of sad faces on liking of neutral faces. That is, avoidant defenses seemed to block access to sadness-inducing information and then prevent the transfer of negative affect to a neutral stimulus.

Avoidant Attachment and Lack of Psychobiological Coherence

Avoidant people's reduced access to emotions is also evident in studies examining the coherence between self-reports of emotional experience and less conscious, more automatic indicators of these experiences. (We assume that higher concordance between these measures implies greater access to emotional experience.) As already mentioned, avoidant people score relatively low on self-reports of death anxiety or anger, but implicitly revealed these emotions in TAT stories or heart rate (Mikulincer, 1998b; Mikulincer et al., 1990). Three related studies examined access to emotions during the AAI, and all found that avoidant people verbally expressed few negative feelings during the interview but at the same time exhibited higher levels of physiological arousal (heightened electrodermal activity; Dozier & Kobak, 1992; Roisman et al., 2004) and more intense facial expressions of negative emotions (Zimmermann, Wulf, & Grossmann, 1997).

Spangler and Zimmermann (1999) examined attachment-related differences (based on the AAI) in the coherence of facial muscle reactions (measured with electromyography of the smile and frown muscles) and subjective reactions (pleasantness ratings) to 24 film fragments. For each study participant, they computed the correlation between muscular and subjective reactions across the 24 scenes, with higher positive correlations reflecting higher psychobiological coherence. Attachment security was positively associated with psychobiological coherence, but avoidance was associated with less accurate awareness of physiological states. Zimmermann et al. (2001) extended these findings to the experience of emotions during a problem-solving task: Avoidant people (identified with the AAI) were characterized by a greater discrepancy between self-reported anger and sadness and congruent facial expressions. Similar findings were reported by White et al. (2012), who found that avoidant adolescents (in the Child Attachment Interview) reported relatively low levels of distress during a rejection episode although their brains showed a strong negative reaction to this episode (stronger negative left frontal slow wave).

Sonnby-Borgström and Jonsson (2004) provided further evidence of avoidant individuals' lack of psychobiological coherence when undergoing negative emotions. In their study, people were exposed to pictures of happy and angry faces at three different exposure times (17, 56, and 2,350 milliseconds), and their facial muscle reactions were continuously assessed. When the pictures were presented subliminally and participants could not recognize the faces (at exposure times of 17 or 53 milliseconds), both avoidant and secure individuals activated muscles involved in negative emotional displays (corrugator or "frowning" muscles) when they were presented with angry faces. However, when participants were able to recognize the faces (at an exposure time of 2,350 milliseconds), avoidant participants evinced lower levels of corrugator activity and increased zygomaticus muscle responses (a "smiling" reaction) when exposed to angry faces. In contrast, secure people reacted to these pictures by mimicking them (heightened corrugator activity). Avoidant people's heightened corrugator reaction to subliminal exposure to angry faces seems to indicate that these pictures had automatically elicited negative emotions. Therefore, the avoidant participants' tendency to smile when they consciously saw the angry faces suggests a defensive attempt to block cognitive access to and visible expression of negative emotions.

A subsequent study extended these findings to interpersonal interactions. Seedall and Wampler (2012) videotaped couples during a semi-natural conversation and an interaction with a therapist, and assessed physiological signs of distress (skin conductance) and the type of affect they expressed to their partner during the interactions. More secure participants showed signs of adequate psychobiological coherence: They expressed more negative feelings toward their partners mainly when they showed increased levels of skin conductance. However, those higher in avoidance expressed more positive feelings toward their partner mainly when they showed increased skin conductance, another sign of lack of psychobiological coherence.

Insecure People's Problems in Identifying and Differentiating Emotions

Pursuing the hypothesis that avoidant people tend to exclude emotions from consciousness, several studies have found positive associations between avoidant attachment and scores on the Toronto Alexithymia Scale, indicating difficulties in identifying and describing emotions (Barbasio & Granieri, 2013; Besharat, 2010; Besharat & Khajavi, 2013; Craparo, Gori, Petruccelli, Cannella, & Simonelli, 2014; Gilbert, McEwan, Catarino, Baião, & Palmeira, 2014; C. Hesse & Floyd, 2011; Hexel, 2003; Keating, Tasca, & Hill, 2013; Mallinckrodt & Wei, 2005; Meins, Harris-Waller, & Lloyd, 2008; Montebarocci, Codispoti, Baldaro, & Rossi, 2004; Oskis et al., 2013; Picardi, Toni, & Caroppo, 2005; Picardi et al., 2007, 2013; Sonnby-Borgström, 2009; Troisi, D'Argenio, Peracchio, & Petty, 2001; Wearden, Lamberton, Crook, & Walsh, 2005). Avoidant attachment (assessed with either self-report scales or the AAI) is also related to inattention to feelings (Y. Kim, 2005; Searle & Meara, 1999), less emotional awareness (DeOliveira, Moran, & Pederson, 2005; Monti & Rudolph, 2014; Stevens, 2014), and less recall and more dismissal of dreams (Contelmo, Hart, & Levine, 2013; McNamara, Andresen, Clark, Zborowski, & Duffy, 2001). More avoidant people are also less likely to use emotion words and reflect on emotional themes while speaking about their childhood experiences in the AAI (Borelli, David, et al., 2013; Buchheim & Mergenthaler, 2000). In addition, they score lower on tests of emotional intelligence (Cherry, Fletcher, & O'Sullivan, 2013; Delhaye, Kempenaers, Stroobants, Goossens, & Linkowski, 2013; Lanciano et al., 2012; but see Kafetsios, 2004, for an unexpected positive association between avoidant attachment and emotion understanding).

Interestingly, most of the studies cited above that have examined attachment-related differences in alexithymia also reveal that attachment-anxious people can also have difficulty identifying and describing their feelings. According to Mallinckrodt and Wei (2005), higher alexithymia scores reflect not only lack of emotional awareness but also difficulties in differentiating between specific emotions and communicating the specific feelings to others. It seems possible, therefore, that anxious strategies, which create an undifferentiated, chaotic emotional architecture also create difficulties in differentiating and identifying specific feelings. In support of this view, Stevens (2014) found that, although anxiously attached people reported having increased emotional awareness, they struggled in identifying their feelings and managing emotion-related responses. Moreover, E. M. Hill et al. (2013) found that more anxious people (based on the ECR) were less likely to report dreams during psychodynamic psychotherapy.

Attachment-anxious individuals' problems in differentiating and identifying specific feelings may also be a result of the intensity of their reactions to threatening events. Several studies have found that people who score high on attachment anxiety also score high on measures of emotional reactivity or intensity (e.g., J. Feeney, 1999a; Gratz et

al., 2015; Kerr, Melley, Travea, & Pole, 2003; Pietromonaco & Barrett, 1997; Searle & Meara, 1999; Wei, Vogel, Ku, & Zakalik, 2005; Wei et al., 2007). Some of these studies also found that avoidant attachment was associated with lower emotional intensity and expression of both positive emotions, such as love, pride, and negative emotions, such as anger and sadness. This fits with our idea that even positive emotions play a role in strengthening attachment bonds—something that avoidant people wish not to do.

This conclusion was recently supported by Goodall (2015), who found that avoidant people have difficulties in regulating positive emotions. Specifically, self-reports of avoidant attachment were associated with lower levels of savoring strategies (enhancing or prolonging the positive emotion in order to maximize its effect) and higher levels of dampening strategies (limiting or reducing the effect of a positive emotion through a variety of means such as suppression, or changing focus away from the positive emotion). Gentzler, Ramsey, Yi, Palmer, and Morey (2014) also found that adolescents who were more insecurely attached to parents reported less savoring of their most intense positive event across a 4-day period.

Anxious and avoidant individuals' problems in identifying their feelings are also evident in studies examining individual differences in mindfulness—the capacity to maintain mindful attention and awareness to "here and now" stimuli, sensations, feelings, and thoughts without any judgmental attitude. In all of these studies, self-reports of attachment anxiety and avoidance have been inversely associated with self-reports of mindfulness (Bourne, Berry, & Jones, 2014; Cordon & Finney, 2008; Goodall, Trejnowska, & Darling, 2012; Jones, Welton, Oliver, & Thoburn, 2011; Pepping, Davis, & O'Donovan, 2013; Pepping, O'Donovan, & Davis, 2014; Pepping, O'Donovan, Zimmer-Gembeck, & Hanisch, 2015; Shaver, Lavy, Saron, & Mikulincer, 2007; Walsh, Balint, Smolira, Frederickson, & Madsen, 2009). Pepping et al. (2013) also found that difficulties in emotion regulation fully mediated the association between attachment insecurities and mindfulness.

CONCLUDING REMARKS

Because emotion regulation is so important in so many different areas of psychological research, including clinical, developmental, and social psychology as well as affective neuroscience, attachment researchers have conducted many studies on the topic. These studies clearly indicate that attachment style is an important construct for researchers and clinicians interested in individual differences in emotion regulation. Secure adults, most of whom have enjoyed favorable treatment by attachment figures, are able to experience, express, and acknowledge emotions with minimal distortion and without becoming overwhelmed by feelings. They are able to regulate emotions autonomously but are also able to seek emotional and social support when desired. They can remember emotional experiences, including ones that occurred years ago, without defensive distortion and without being knocked off their secure foundation by a flood of negative memories. Attachment-anxious people are vigilant with respect to possible injuries, slights, and threats, and tend to amplify their negative reactions to threats. They have trouble remaining mentally organized when encountering threats or recalling psychological injuries, and they are ambivalent about seeking support. They want to be loved, soothed, and attended to, but they fear being rejected. Avoidant individuals, in contrast, downplay threats and vulnerabilities, deny negative emotions, and suppress or repress negative memories. But

there are many indications that they cannot always maintain this defensive, cut-off stance in the face of major or prolonged stressors. Their defenses collapse under strain.

The same differences can be seen in people's reactions to breakups and losses, with secure individuals maintaining emotional bonds with lost loved ones while effectively pursuing new relationships. They can reorganize their attachment hierarchies without defensively quarantining past experiences. Anxious individuals overreact to breakups and losses and seem unable to get beyond them. Avoidant individuals seem relatively unperturbed by breakups and losses, but the cost of maintaining psychological distance may be high for both them and their subsequent relationship partners.

The research literature on attachment styles and emotion regulation should prove useful to both clinicians and lay people. It touches on many of the classic issues in psychodynamic psychology, but does so in terms that most people can understand and with a degree of clarity and empirical support never achieved by clinical writers who lacked today's probing research methods. In Chapter 14, we will review studies applying research on attachment and emotion regulation within clinical and psychotherapeutic settings.

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