AN ATTACHMENT PERSPECTIVE ON PERSONAL SECURITY

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In his exposition of attachment theory, Bowlby (1973, 1979, 1980, 1982, 1988) emphasized the contribution of mental representations of attachment security to healthy socio-emotional development during childhood and adolescence, and to psychological and social well-being in adulthood. These mental representations, which Bowlby called internal working models, include expectations that relationship partners will be available, sensitive, and supportive when support is needed. Working models of secure relationships allow a person to cope constructively with stressful events, maintain self-esteem and emotional stability, and contribute constructively to mutually satisfying social interactions. In this chapter we review the extensive research literature on security-sustaining working models and show that both chronic (i.e., dispositional) and momentary activation of mental representations of attachment security are inner resources that contribute to mental health and psychosocial adjustment. (In related chapters in this volume, Gillath and Karantzas review the effects of attachment security on prosocial behavior, and Hart highlights the interplay between attachment security, self-esteem, and cultural worldviews in coping with existential threats.)

We begin this chapter with a brief account of attachment theory and then explain our model of attachment processes in adulthood (Mikulincer & Shaver, 2007a). This model is an extension of Bowlby’s theory that is supported by 25 years of research by personality and social psychologists (see Gillath and Karantzas’s and Hart’s chapters in this volume for further applications of our model). Next, we focus on the anchoring of attachment security in expectations concerning relationship partners’ sensitivity and responsiveness (expectations organized within a secure-base script), and the effects of security-enhancing mental representations on a person’s ability to cope with threats and traumas. We then discuss evidence concerning the neural and psychological reality of the secure-base script.

**Attachment Theory: Basic Concepts**

Bowlby (1982) began with the observation that human infants are unusually vulnerable because of their prematurity, compared with other mammalian offspring, but are born with a repertoire of attachment behaviors that were selected during evolution to assure proximity to supportive others (attachment figures) as a means of protection from predation, starvation, and injuries. When
attachment behaviors repeatedly assure proximity to a responsive attachment figure, they contribute to a general sense of “felt security” (Sroufe & Waters, 1977), which makes exploration, learning, and participation in social relationships easier and more successful.

Security-promoting attachment behaviors are organized by an innate attachment behavioral system, which Bowlby (1982) viewed as a cybernetic program that includes detection of threats, the ability to signal a need for help from attachment figures, and actions that establish contact with those figures and reliance on them for reassurance and safety. Although the attachment system is most important early in life, Bowlby (1988) viewed it as active over the entire human life span, as indicated by emotional bonds with close friends and romantic partners and by intense grief reactions when an emotional bond is broken by separation, divorce, or the death of a close other.

Bowlby (1973) also described important individual differences in attachment-system functioning. In his view, these individual differences are rooted in the reactions of one’s relationship partners to bids for proximity and support in times of need, and in the incorporation of such reactions into working models of self and relationships. Interactions with attachment figures who are available, sensitive, and supportive in times of need facilitate the smooth, normative functioning of the attachment system, promote a sense of connectedness and security, and contribute to positive working models of self and others. When a person’s attachment figures are not reliably available and supportive, however, a pervasive, dispositional sense of security is not attained, worries about one’s social value and about others’ intentions are strengthened, and strategies of affect regulation other than normal proximity seeking are adopted (secondary attachment strategies, characterized by anxiety or defensive avoidance).

When studying individual differences in attachment-system functioning in adults, attachment researchers have focused on attachment orientations (or styles)—patterns of relational expectations, emotions, and behaviors that result from internalizing a particular history of attachment experiences (Shaver & Mikulincer, 2002). Research, beginning with Ainsworth, Blehar, Waters, and Wall (1978) and continuing through scores of recent studies by social and personality psychologists (reviewed by Mikulincer & Shaver, 2007a), indicates that attachment styles can be located in a two-dimensional space defined by roughly orthogonal factors that we call attachment-related anxiety and avoidance (Brennan, Clark, & Shaver, 1998). The avoidance dimension reflects the extent to which a person distrusts relationship partners’ goodwill and defensively strives to maintain behavioral independence and emotional distance. The anxiety dimension reflects the extent to which a person worries that a partner will not be available in times of need, partly because of the person’s self-doubts about his or her own worthiness. Whereas both dimensions reflect worries, doubts, and uncertainty about close relationships, they differ in terms of the perceived cause of uncertainty—the relationship partner, in the case of people scoring high on the avoidance dimension, or the self, in the case of people scoring high on the anxiety dimension.

In this two-dimensional space, people who score low on both dimensions are considered relatively secure with respect to attachment. They are likely to feel confident concerning their relationship partner’s good intentions, their own self-worth, and the value of the relationship. Their subjective confidence is a part of the security they feel when thinking about their own love-worthiness and their likelihood of receiving protection and support when confronting problems or threats. A person’s location in the two-dimensional space can be measured with reliable and valid self-report scales (e.g., Brennan et al., 1998) and is associated in theoretically predictable ways with a wide variety of measures of relationship quality and psychological adjustment (see Mikulincer & Shaver, 2007a, for an extensive review).

Although attachment orientations are initially formed during childhood, in relationships with parents and other early caregivers (Cassidy & Shaver, 2008), Bowlby (1988) thought that significant interactions with relationship partners beyond childhood can alter a person’s working models and move him or her from one region of the two-dimensional (anxiety-by-avoidance)
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space to another. Moreover, although a person’s attachment style is often conceptualized as a single global orientation toward relationships (and can be measured as such and is found to have reliable, predictable correlates and consequences), it is an emergent property of a complex network of cognitive and affective processes, which includes many episodic, context-relative, and relationship-specific memories and schemas (Mikulincer & Shaver, 2003). Many studies indicate that a person’s attachment orientation can change depending on context and recent experiences (Mikulincer & Shaver, 2007b), making it possible to study the effects of experimentally primed senses of security and insecurity within the confines of a social psychological laboratory or MRI scanner. In their chapter in this volume, Gillath and Karantzas review studies showing the benefits of situational security priming even for chronically insecure people.

We (Mikulincer & Shaver, 2007a) have proposed that a person’s location in the two-dimensional anxiety-by-avoidance space reflects both his or her sense of attachment security and the ways in which he or she deals with threats and stressors. People who score low on the two insecurity dimensions are generally secure, hold positive working models of self and others, and tend to employ constructive and effective affect-regulation strategies. Those who score high on either attachment anxiety or avoidance (or both) suffer from attachment insecurities, worries about self-worth, and distrust of others’ goodwill and responsiveness in times of need. Moreover, such people tend to use secondary attachment strategies that we, following Cassidy and Kobak (1988), characterize as attachment-system “hyperactivation” or “deactivation” when coping with threats, frustrations, rejections, and losses. People who score high on attachment anxiety rely on hyperactivating strategies—energetic attempts to achieve support and love combined with lack of confidence that these resources will be provided and feelings of anger and despair when they are not provided (Cassidy & Kobak, 1988). In contrast, people who score high on attachment-related avoidance tend to use deactivating strategies: trying not to seek proximity to others when threatened, denying vulnerability and needs for other people, and avoiding closeness and interdependence in relationships.

With these ideas in mind, we can provide an overview of the cognitive, affective, and relational outcomes associated with attachment-system functioning in adulthood. On the one hand, interactions with security-enhancing attachment figures contribute to a stable and solid sense of attachment security, which is an important aspect of healthy personality development, favorable psychological functioning, and good social and personal adjustment (see Mikulincer & Shaver, 2007a, for a review). On the other hand, adoption of hyperactivating or deactivating strategies influences the specific defenses used by insecure people to regulate distress and manage doubts about their self-worth and others’ availability and sensitivity. Adoption of a particular insecure strategy shapes the different emotional and relational problems that result from anxious and avoidant forms of attachment. In the next section, we summarize the positive effects that attachment security and related mental representations have on a person’s social motives, cognitions, and behaviors.

Mental Representations of Attachment Security

According to our model of attachment-system functioning in adulthood (Mikulincer & Shaver, 2003, 2007a), appraisal of the availability and supportiveness of an attachment figure in times of need automatically activates mental representations of attachment security. These representations include both declarative and procedural knowledge organized around a relational prototype or “secure-base script” (Waters & Waters, 2006) 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.” Having many
experiences that contribute to the construction of this script makes it easy for a person to confront stressful situations with optimistic expectations, which helps the person maintain relative calm and hope while coping with problems.

Attachment-figure availability also fosters what we, following Fredrickson (2001), call a “broaden and build” cycle of attachment security, which increases a person’s resilience and expands his or her perspectives, coping flexibility, and skills and capabilities. This cycle is a cascade of mental and behavioral events that enhances emotional stability, personal and social adjustment, satisfying close relationships, and personal growth. The most immediate psychological effect of attachment-figure availability is effective management of distress and restoration of emotional equanimity, which, in turn, contributes to an upward spiral of broadening and building one’s mental and behavioral resources. According to attachment theory, interactions with available and supportive attachment figures, by imparting a pervasive sense of safety, assuage distress and arouse positive emotions (relief, satisfaction, gratitude). Secure people can therefore remain relatively unperturbed during times of stress and experience longer periods of positive affectivity, which contribute to sustained emotional well-being and mental health.

Experiences of attachment-figure availability also contribute to a reservoir of cognitive representations that play a central role in maintaining emotional stability and personal adjustment. The first set of beliefs concerns the appraisal of life’s problems as manageable, which helps a person maintain an optimistic and hopeful stance regarding difficulties and stressors. These beliefs are a result of positive interactions with sensitive and available attachment figures, during which individuals learn that distress is manageable, that external obstacles can be overcome, and that the course and outcome of most threatening events are at least partially controllable.

Adult attachment studies provide extensive support for a connection between mental representations of attachment security and hopeful, optimistic beliefs. Specifically, secure individuals, as identified by self-report measures, are consistently found to appraise a wide variety of stressful events in less threatening terms than insecure people, either anxious or avoidant, and to hold more optimistic expectations about their ability to cope with sources of distress (e.g., Berant, Mikulincer, & Florian, 2001; Mikulincer & Florian, 1995; Radecki-Bush, Farrell, & Bush, 1993).

Another set of security-related beliefs concern positive representations of others’ intentions and traits. Again, these positive representations are a result of interactions with available attachment figures, during which individuals learn about the sensitivity, responsiveness, and goodwill of their primary relationship partners. Numerous studies have shown that individuals who score low on attachment anxiety and avoidance (i.e., relatively secure persons) maintain a positive view of human nature (e.g., Collins & Read, 1990; Hazan & Shaver, 1987), describe relationship partners using positive trait terms (e.g., Feeney & Noller, 1991; Levy, Blatt, & Shaver, 1998), perceive partners as supportive (e.g., Davis, Morris, & Kraus, 1998; Ognibene & Collins, 1998), and feel trusting toward partners (e.g., Collins & Read, 1990; Hazan & Shaver, 1987). In addition, secure individuals have positive expectations concerning their partners’ behavior (e.g., Baldwin, Fehr, Keedian, Seidel, & Thomson, 1993; Baldwin, Keelan, Fehr, Enns, & Koh Rangarajoo, 1996) and tend to explain a partner’s negative behavior in relatively positive terms (e.g., Collins, 1996).

Security-enhancing interactions with attachment figures can also sustain a background sense of personal worth, competence, and mastery. During these interactions, individuals learn to view themselves as active, strong, and competent, because they can effectively mobilize a partner’s support and overcome threats that activate attachment behavior. Moreover, they can easily perceive themselves as valuable, lovable, and special—thanks to being valued, loved, and regarded as special by a caring attachment figure. Research has consistently shown that such positive self-representations are characteristic of secure persons. Compared to those who score high on measures of attachment anxiety, secure people report higher self-esteem (e.g., Bartholomew & Horowitz, 1991; Mickelson,
Kessler, & Shaver, 1997), view themselves as competent and efficacious (e.g., Brennan & Morris, 1997; Cooper, Shaver, & Collins, 1998), describe themselves in positive terms, and exhibit small discrepancies between actual-self representations and self-standards (e.g., Mikulincer, 1995).

People with security-enhancing mental representations of attachment experiences generally feel safer and more protected, without having to rely on reality-distorting or socially destructive defensive strategies encouraged by a fragile or false self-concept. Moreover, they can devote mental resources that otherwise would be employed in preventive, defensive maneuvers to more prosocial and pro-relational behaviors that contribute to mental health and psychosocial adjustment.

The Neural and Psychological Reality of Representations of Attachment Security

There is evidence for the psychological reality of the secure-base script in young adults. For example, Mikulincer, Shaver, Sapir-Lavid, and Avihou-Kanza (2009) found that people who score lower on self-report scales tapping attachment anxiety or avoidance (i.e., the more secure participants) were more likely than those who scored higher 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. 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 benefiting 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. (These results were not explained by alternative predictor variables, such as neuroticism, extraversion, or verbal ability).

Adult attachment researchers have also designed experimental procedures to examine the neural and psychological reality of each of the components of the secure-base script. Specifically, they have examined the neuropsychological reality of three core if-then propositions: (1) If there is some threat or danger, then automatically activate mental representations of security-enhancing attachment figures; (2) if these security providers are mentally activated, then positive affects (e.g., safety, relaxation, comfort) will be activated and subjective well-being will be sustained despite actual or potential threats and dangers; and (3) if these security providers are mentally activated, then confidently return to other, attachment-unrelated activities (e.g., exploration, caring for needy others, etc.).

Threat Automatically Activates Mental Representations of Security Providers

During the last decade, several studies have examined the first component of the secure-base script—the automatic activation of mental representations of security providers following the encounter with threats and dangers. In a pioneering series of experiments, we (Mikulincer, Gil-lath, & Shaver, 2002) examined whether minimal (even unconscious) exposure to threatening stimuli can automatically activate mental representations of attachment figures (e.g., names of security-enhancing attachment figures). Our results indicated that when a threat-related word (e.g., “death”) was presented subliminally on a computer screen, participants were faster to detect the name of one of their attachment figures when it appeared on the screen and were slower to name the color in which such names were printed on the screen—an indication that the names had been automatically and unconsciously activated in memory (Mikulincer et al., 2002). In other words, threats, even when arising unconsciously, automatically activate mental representations of security providers.
It is important to note that threat-related words had no effect on the mental availability of names of people, even familiar ones, who were not viewed as attachment figures. That is, attachment figures are not just any relationship partners; they are special people to whom one turns, even unconsciously and automatically, when comfort or support is needed. Similar findings have been obtained in experiments examining the extent to which minimal exposure to threat-related words leads to faster recognition of attachment-related words, such as “love,” “hug,” and “closeness” (Mikulincer, Birnbaum, Woddis, & Nachmias, 2000), and of representations of symbolic sources of security, such as a person’s pet or God (Granqvist, Mikulincer, Gurwitz, & Shaver, 2012; Hart, this volume; Shepherd, Kay, & Eibach, this volume; Zilcha-Mano, Mikulincer, & Shaver, 2012).

In a conceptual replication and extension of these findings, Dewitte, De Houwer, Buyssse, and Koster (2008) examined the extent to which minimal exposure to threatening stimuli would increase symbolic approach movements toward names of attachment figures presented on a computer monitor (faster and stronger pull of a joy-stick following name presentation) and reduce symbolic avoidance movements from these names (slower and weaker push of a joy-stick). Results showed that automatic approach responses toward names of attachment figures were stronger, and avoidance responses were weaker, following a threat-related prime than following a neutral prime, regardless of whether the source of the threat was attachment relevant or irrelevant and regardless of a participant’s attachment orientation. Again, these effects of threat on pull-push movements were not significant when participants were presented with the names of acquaintances who were not viewed as attachment figures.

Based partially on these findings, Beckes, Simpson, and Erickson (2010) reasoned that the repeated automatic activation of representations of a comforting relationship partner following encounters with threats would be enough to transform this partner into a security-enhancing attachment figure. That is, this repeated joint activation of threat-related representations and representations of a comforting relationship partner would foster safety and relaxation in response to the mere presence of such a partner and imbue this partner with the power to serve as a secure base in times of need.

In their experiment, Beckes et al. (2010) used a classical conditioning procedure to test whether participants would be more likely to develop security-related associations with the faces of people who display genuine smiles if those faces have been repeatedly paired with subliminally presented threatening stimuli (e.g., a snake or mutilation photos) rather than with neutral stimuli. As compared to smiling faces paired with neutral stimuli, smiling faces paired with threatening stimuli did indeed decrease lexical decision response times for security-related words (e.g., “belong”) while lengthening lexical decision response times to insecurity-related words (e.g., “betray”). Importantly, the learning process did not have this effect when neutral, unresponsive faces were used. Thus, responsive faces preceded by potential threats promote implicit associations between those responsive faces and mental representations of security.

In a more recent experiment, Beckes, Coan, and Morris (2013) examined the neural processes underlying the transformation of a relationship partner into a security provider. They used the same procedure as Beckes et al. (2010), involving the repeated pairings of threatening stimuli with images of warm, smiling faces, and again found that this conditioning procedure results in faster lexical decision responses for security-related words following the priming of these faces. More important, measuring Event-Related Potentials to the smiling faces, Beckes et al. (2013) found that the conditioning procedure amplified P1 Event-Related Potentials responses to smiling faces paired with a threat stimulus (snake) relative to the same faces paired with a neutral stimulus (a kitchen rolling pin). This finding implies that the repeated activation of representations of a relationship partner during encounters with a threat produces early attentional biases toward this partner (elevated P1 responses), which facilitate early categorization of him or her as a potential social resource for dealing with threats and obstacles.
Activation of Attachment Security Increases Positive Affect and Sustains Well-Being

Several studies have examined the neuropsychological reality of the second component of the secure-base script: Temporarily activating mental representations of security by exposing people to security-related symbolic stimuli (which we call “security priming”), or to an actual security-enhancing relationship partner, can maintain a person’s emotional balance and adaptability, even under fairly stressful circumstances. In our experiments, for example, we have used well-validated social-cognition research techniques to activate mental representations of security and measure their emotional effects (e.g., Mikulincer, Gillath, et al., 2001, 2003; Mikulincer, Hirschberger, Nachmias, & Gillath, 2001; Mikulincer & Shaver, 2001). These research techniques include subliminal presentation of pictures suggesting attachment-figure availability (e.g., a Picasso drawing of a mother cradling an infant in her arms, a couple holding hands and gazing into each other’s eyes), subliminal presentation of the names of people who were designated by participants as security-enhancing attachment figures, guided imagery concerning the availability and supportiveness of an attachment figure, and visualization of the faces of security-enhancing attachment figures. We compared the effects of these primes with the effects of emotionally positive but attachment-unrelated stimuli (e.g., pictures of a large amount of money, the names or faces of acquaintances who are not attachment figures) or emotionally neutral stimuli (e.g., pictures of furniture, neutral words). Findings consistently indicated that portrayals of attachment-figure availability improved participants’ moods, and did so more reliably and powerfully than other positive stimuli. Conceptually similar findings are reported by Gillath and Karantzas (this volume) using situational primes of multiple internalized attachment figures.

Mikulincer, Hirschberger, et al. (2001) also found that priming representations of supportive attachment figures infused formerly neutral stimuli with positive affect, even when the priming was done subliminally. For example, subliminal presentation of the names of people who were designated by participants as security-enhancing attachment figures, compared with the names of close others or mere acquaintances who were not nominated as attachment figures, led to greater liking of previously unfamiliar Chinese ideographs. Moreover, subliminally priming mental representations of available attachment figures induced more positive evaluations of neutral stimuli, even in threatening contexts, and eliminated the detrimental effects that threats otherwise had on liking for neutral stimuli. Thus, temporary priming of mental representations of security-enhancing attachment figures appears to have a calming, soothing effect.

Given these findings, we (Mikulincer, Shaver, & Horesh, 2006) wondered whether the soothing effects of security priming might mitigate the emotional damage often caused by traumatic experiences, such as war, acts of terrorism, hurricanes, rape, and witnessing of violent domestic disputes. In this study, we focused on a well-known cognitive manifestation of post-traumatic responses—longer reaction times for naming the colors in which trauma-related words were printed (see Emilien et al., 2000, for a review). In the first session of the study, Israeli undergraduates filled out a self-report scale assessing the severity during the previous month of Post-Traumatic Stress Disorder (PTSD) symptoms related to Palestinian terrorist attacks. Two groups of participants were then selected: the PTSD group, consisting of those who scored above the 75th percentile on the PTSD scale, and the non-PTSD group, consisting of those who scored below the 25th percentile. Two to three weeks later, these participants were invited to an experimental session in which they performed a computerized Stroop task. The target words included 10 terror-related words, 10 negatively valued words that were not specifically related to terrorist attacks, and 10 neutral words printed in one of four different colors. On each trial, participants were subliminally primed with an attachment-security word (the Hebrew word for “being loved”), a positively valenced but attachment-unrelated word, or a neutral word.
The results replicated previous findings concerning the accessibility of trauma-related thoughts among people suffering from PTSD symptoms. Participants in the PTSD group produced longer color-naming latencies for terror words (indicating greater automatic accessibility of the words) than participants in the non-PTSD group. More important, this effect was qualified by security priming. The effect of PTSD status (many or few PTSD symptoms) was significant only when participants were primed with a neutral or positive word. The effect was not significant following the priming of an attachment-security representation. That is, symbolic mobilization of attachment-security representations (“being loved”) during the Stroop task had a soothing effect, lowering the accessibility of trauma-related thoughts and eliminating differences between PTSD and non-PTSD groups in color-naming latencies for terror-related words.

Carnelley and Rowe (2010) examined how security priming is experienced by individuals and how its effects differ from those produced by other positive affect and relationship-related primes. Specifically, they analyzed the written protocols produced by participants in different priming conditions and found that that security priming, as compared to other positive primes, led to more thoughts related to felt security, positive care, a sense of merging with another, positive emotion, and communion. In a further examination of the effects of security priming, Canterberry and Gillath (2013) scanned the brains of participants during fast exposure to security-related words. As compared to a neutral prime, security priming was associated with widespread activation in the medial-frontal and prefrontal cortical areas—areas that have been found in multiple studies to be associated with cognitive control and self-regulation. Additionally, security priming was uniquely associated with activation in the striatum (e.g., putamen, globus pallidus, caudate), insula, and the anterior cingulate cortex—areas that have been previously associated with positive affect and approach motivation.

There is also evidence that the actual or symbolic presence of a responsive attachment figure is a key modulator of emotional responses to distress-eliciting experiences. For example, Selcuk, Zayas, Günaydin, Hazan, and Kross (2012) found that both explicit and implicit priming of attachment-figure representations accelerated emotional recovery and reduced negative thoughts after recalling an upsetting experience. Coan, Schafer, and Davidson (2006) examined brain responses (using functional magnetic resonance imaging [fMRI]) of married women who underwent a laboratory stressor (threat of electric shock) while they were holding their husband's hand, holding the hand of an otherwise unfamiliar male experimenter, or holding no hand at all. Spousal handholding reduced activation in brain regions associated with stress and distress (right anterior insula, superior frontal gyrus, and hypothalamus). The researchers also found that the stress-reducing effects of handholding were greater in better-functioning marriages, probably because of the greater sense of security induced by physical contact with a responsive and supportive husband.

Following these findings, Conner et al. (2012) examined the effects of the mere presence of an attachment figure on brain responses of anxious children to physical threat words during an fMRI session. Findings indicated that activity in the hypothalamus and the ventromedial and ventrolateral prefrontal cortex—areas that have been consistently associated with emotional reactivity—was significantly reduced in anxious children who were accompanied by their caregiver in the scanner room compared to those without their caregiver. Moreover, Eisenberger and colleagues (Eisenberger et al., 2011; Master et al., 2009) found that holding the hand of a romantic partner or viewing his or her photograph (vs. a picture of a stranger or an object) reduced participants’ subjective experience and neural representation of pain in response to heat stimuli. Younger, Aron, Parke, Chatterjee, and Mackey (2010) replicated these findings in an fMRI study and found that greater analgesia while viewing pictures of a romantic partner was associated with increased activity in several reward-processing brain regions, such as the nucleus accumbens, lateral orbitofrontal cortex, and dorsolateral prefrontal cortex.
In a more recent experiment, Kane, McCall, Collins, and Blascovich (2012) asked young adults to complete a threatening cliff-walking task in an immersive virtual environment. In this virtual world, their romantic partner was, in three different experimental conditions, absent from the virtual world, present in the world and attentive to the participant during the task (waving, clapping at successes, nodding their heads, and actively orienting their bodies toward the participant), or present but inattentive (looking away from the participant). Participants in the attentive-partner condition experienced the task as less stressful than those who were alone; they also reported feeling more secure during the task and were less vigilant of their partner’s behavior compared to those in the inattentive-partner condition. These findings suggest that a romantic partner can reduce anxiety responses if he or she acts in an attentive and responsive manner, that is, as a security-enhancing attachment figure.

Conceptually similar findings were reported by Guichard and Collins (2008), who manipulated the quality of each participant’s romantic partner’s support by having the partner send messages (actually written by the researchers) before and after the focal person participated in a stressful speech-delivery task. Participants who received highly supportive messages were in a better mood after their speech, had higher state self-esteem, and felt more satisfied with their relationship compared to those who received low-support messages or no message at all from their partner. In a similar study, Collins, Jaremka, and Kane (2009) found that experimentally manipulated supportive messages from a romantic partner during a stressful speech task (as compared to low-support messages) yielded lower cortisol levels and more rapid emotional recovery from the stressful task.

Considering all such findings, there is strong support for the mental reality of the second component of the secure-base script: Mental activation of a sense of security or the actual presence of a security-enhancing attachment figure produces positive emotions (e.g., relief, satisfaction, gratitude, love), which facilitate effective coping and restore emotional equanimity.

**Activation of Attachment Security Facilitates Attachment-Unrelated Activities**

There is also accumulating evidence supporting the mental reality of the third component of the secure-base script: Temporarily activating mental representations of security by exposing people to security-related symbolic stimuli or to an actual security-enhancing relationship partner allows people to confidently engage in attachment-unrelated activities, such as exploring the environment, considering possible goals for the future, or caring for a needy other. For example, Mikulincer, Shaver, and Rom (2011) examined the effects of security priming on exploration and learning. In two experiments, participants were primed with security-related or neutral stimuli, and their creative problem solving was assessed in the Remote Associates Test. In the first experiment, implicit security priming (subliminal presentation of attachment figures’ names) led to more creative problem solving (compared with control conditions) regardless of dispositional attachment anxiety and avoidance. In the second study, the effects of explicit security priming (recalling experiences of being well cared for) were moderated by anxiety and avoidance. That is, explicit priming of attachment security led to better performance in the Remote Associates Test only among participants who scored lower on measures of dispositional attachment insecurity.

There is also evidence that security priming facilitates effective provision of care and support to needy others. In two experiments, Mikulincer, Gillath, et al. (2001) and Mikulincer, Gillath, et al. (2003) found that subliminal priming of names of security providers, as compared to neutral priming, increased empathic concern for a suffering stranger and the endorsement of prosocial values (concern for close others and concern for all humanity). In another experimental study, Mikulincer, Shaver, Gillath, and Nitzberg (2005, Study 1) examined the effects of security priming on the decision to help or not help a person in distress. Participants watched a confederate while she performed a series of aversive tasks. As the study progressed, the confederate became...
increasingly distressed, and the study participant was given an opportunity to take her place, in effect sacrificing self for the welfare of another. Shortly before being exposed to the person’s distress, participants were primed with either the name of a security provider (security priming) or a neutral name (neutral priming). We found that security priming, as compared with neutral priming, increased participants’ compassion and willingness to take the distressed person’s place. This effect of security priming was replicated in both Israel and the United States and also when the priming was done supraliminally by asking participants to think of a familiar security provider (Mikulincer et al., 2005, Study 2).

In two additional studies, Mikulincer et al. (2005, Studies 3–4) asked whether contextual activation of mental representations of attachment security could override egoistic motives for helping, such as mood-enhancement (Schaller & Cialdini, 1988) and empathic joy (Smith, Keating, & Stotland, 1989). Study participants were randomly assigned to one of two priming conditions (security priming, neutral priming), read a true newspaper article about a woman in dire personal and financial distress, and rated their emotional reactions to the article (compassion, personal distress). In one study, half of the participants anticipated mood-enhancement by means other than helping (e.g., expecting, immediately after this part of the experiment, to watch a comedy film). In the other study, half of the participants were told that the needy woman was chronically depressed and her mood might be beyond their ability to improve (no empathic joy condition). Schaller and Cialdini (1988) and Smith et al. (1989) had found that these two conditions, expecting to improve mood by other means or anticipating no sharing of joy with the needy person, reduced egoistic motivations for helping because a person gains no special mood-related benefit from helping the needy person. However, in our studies, these conditions failed to inhibit security-induced altruistic motives for helping, which arose even when the manipulated egoistic motives were absent (Batson, 1991).

The findings indicate that expecting to improve one’s mood by means other than helping or expecting not to be able to share a needy person’s joy following the provision of help reduced compassion and willingness to help in the neutral priming condition but not in the security priming condition. Instead, security priming led to greater compassion and willingness to help even when there was no egoistic reason (no empathic joy, no mood relief) for helping. It seems, therefore, that attachment security counteracts some of the egoistic motives underlying people’s failure to help.

The combined evidence from our experimental studies indicates that attachment security makes compassion and altruism more likely. Although there are other reasons for helping, the prosocial effects of attachment security do not depend on alternative egoistic motives, such as a person’s desire to improve his or her own mood or the desire to share a suffering person’s relief. In our view, the sense of attachment security reduces one’s need for defensive self-protection and allows one to direct attention to others’ needs, feel compassion toward a suffering person, and engage in altruistic behavior with the primary goal of benefitting other people rather than oneself.

This reasoning received further support in a recent experiment in which we (Mikulincer, Shaver, Sahdra, & Bar-On, 2013) tested two hypotheses: (a) Contextually augmented attachment security would foster effective care provision toward a romantic partner who disclosed a personal problem, and (b) increased security would overcome barriers to responsive caregiving induced by mental depletion. Dating couples came to the laboratory and provided names of people (other than their dating partner) who acted as security providers for them. The couples were informed that they would be video-recorded during an interaction in which one of them (whom we regarded as “the care-seeker”) disclosed a personal problem to the other (“the caregiver”). One member was randomly pre-assigned to the care-seeker role and the other to the caregiver role. Care-seekers chose and wrote about any personal problem they were willing to discuss (except ones that involved conflict with the partner). At the same time, caregivers were taken to another
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room, where they performed a Stroop color-naming task in which we manipulated mental deple-
tion and subliminally exposed them to either the names of security providers or the names of
unfamiliar persons. Following these manipulations, couple members were videotaped while they
talked (for 10 minutes) about the problem the care-seeker wished to discuss, and then independent
judges, viewing the video-recordings, coded participants’ responsiveness and supportiveness to
their disclosing partner.

We found that security priming was associated with greater responsiveness and supportiveness
toward a dating partner who was sharing a personal problem. Moreover, security priming overrode
the detrimental effects of mental depletion on responsiveness and supportiveness. These effects
were remarkably consistent across Israeli and American samples and were unexplained by rela-
tionship satisfaction. Overall, the findings emphasize that attachment security facilitates effective
caregiving and that an experimental enhancement of security can counteract dispositional and
situational barriers to compassion and helping.

Conclusions

A large body of research, which we have merely sampled here, indicates, once again (Lieberman,
2013), that the human mind/brain is a highly social device. Many human cognitive and affective
processes evolved to support extreme sociality, and humans’ ability to exist successfully in all
regions of the world is dependent on this sociality. At the heart of each person’s psychology is a
need for reliable social support, which contributes to the development of an adaptive state of secu-
rity; this need is extremely important during infancy but is never unimportant in any phase of the
life span. When the need is largely satisfied by supportive relationships with attachment figures, a
person can feel more secure in several respects—less vulnerable to all kinds of threats, more able to
meet life’s challenges, and better equipped to cope with disappointments, even with the prospect
death (Mikulincer, Florian, & Hirschberger, 2003).

When the need for security-providing attachment figures is not met, a person can become
anxiously vigilant and intrusive with respect to others’ support, which can ruin relationships and
sap a person’s attention and creative energy. Or a person can attempt to defend against reliance on
others, which is also damaging to relationships and harmful to the self, especially in times of stress.
A fundamental sense of security, forged in supportive relationships, makes it easier for a person
to be creative, physically and mentally healthy, and compassionate toward other human beings. In
other words, a history of security-supporting experiences is the bedrock of a fully functioning,
self-actualized person (Maslow, 1971; Rogers, 1961)—a person whose own sense of security, far
from being selfish or self-focused, supports concern for and generosity toward others.

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