Attachment Theory and Intergroup Bias: Evidence That Priming the Secure Base Schema Attenuates Negative Reactions to Out-Groups

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Five studies examined the effects of priming the secure base schema on intergroup bias. In addition, Studies 1–2 examined the effects of dispositional attachment style, Studies 2–5 examined a mood interpretation, Study 3 examined the mediating role of threat appraisal, and Studies 4–5 examined the effects of secure base priming while inducing a threat to self-esteem or cultural worldview. Secure base priming led to less negative evaluative reactions toward out-groups than positive affect and neutral control conditions. In addition, whereas the effects of secure base priming did not depend on attachment style and were not explained by mood induction, they were mediated by threat appraisal and occurred even when self-esteem or cultural worldview was threatened. The discussion emphasizes the relevance of attachment theory for understanding intergroup attitudes.

In recent years, researchers and theorists have attempted to conceptually integrate the literatures on interpersonal relations and intergroup relations (e.g., Devine, Evett, & Vasquez-Suson, 1996; Mackie & Smith, 1998; Smith, Murphy, & Coats, 1999). For example, Smith et al. (1999) delineated parallels between Bowlby's (1969, 1973) attachment theory, which deals with the sense of security in close relationships, and a person's feelings toward groups to which he or she belongs. In the series of studies reported here, we follow this integrative approach and examine the relevance of attachment theory for explaining intergroup attitudes. Specifically, we focus on some of Bowlby's (1973) important ideas about the connection between the attachment system and reactions to unknown and dissimilar people, and we examine the effects of activation of the sense of attachment security on a pervasive and morally troubling intergroup response—the tendency to derogate and reject people who are different from oneself (out-group members).

Theory and Research on the Sense of a Secure Base

One of the basic tenets of Bowlby's (1973) theory is that interactions with significant others who are available and supportive in times of stress facilitate the formation of a sense of a "secure base," or what Sroufe and Waters (1977) called *felt security*. This sense can be viewed as the cognitive–affective aspect of an interpersonal prototype or script (Waters, Rodrigues, & Ridgeway, 1998). Theoretically, the script includes something like the following if–then propositions: If I encounter an obstacle 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. In Bowlby's (1973) terms, the sense of having a secure base provides an individual with a framework for maintaining well-being, formulating effective emotion-regulation devices, developing positive models of the self and others, and engaging in exploration and risk-taking activities.

Although the sense of having a secure base may be formed during early interactions with primary caregivers, Bowlby (1988) contended that every meaningful interaction with significant others throughout life may affect a person's beliefs about others' availability and supportiveness. Moreover, although the sense of having a secure base may be quite general, it is also common for people to develop relationship-specific beliefs organized around actual experiences with a specific partner. These beliefs do not necessarily fit with the more general, chronic sense of having (or not having) a secure base (Collins & Read, 1994). In fact, like every cognitive–affective representation, the sense of having a secure base can be contextually activated by actual or imagined encounters with available and responsive others, even among persons who have chronic doubts about their secure base (Baldwin, 1992, 1997).

In the last 2 decades, a large number of studies have examined the sense of a secure base in adulthood. The most frequently used strategy is to examine associations between the chronic and global sense of a secure base and theoretically relevant constructs. Specifically, this line of research has focused on a person's attachment style and has compared persons who report a secure style with those who report more insecure styles (see J. A. Feeney, 1999; Shaver & Clark, 1994; Shaver & Hazan, 1993, for reviews). This relational construct seems to be organized around two underlying dimensions (Brennan, Clark, & Shaver, 1998). The first dimension, typically called avoidance, reflects the extent to which people distrust others' goodwill and strive to maintain emotional distance and remain independent from a relationship partner. The second dimension, typically called anxiety, reflects the degree to which

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people worry that a partner might not be available or supportive in times of need. Persons scoring low on these two dimensions exhibit the secure style and are characterized by a chronic sense of secure base.

Using self-report measures of attachment style, researchers' studies have extensively supported Bowlby's (1969) hypotheses about the psychological effects of the sense of a secure base. First, persons scoring low on attachment anxiety and avoidance react to stressful events with lower levels of distress and weaker physiological arousal than do persons who score high on these dimensions (e.g., B. C. Feeney & Kirkpatrick, 1996; Mikulincer & Florian, 1998). Second, persons who score low on both anxiety and avoidance are more likely to cope with stress by relying on support-seeking than are persons who score high on these dimensions (e.g., Fraley & Shaver, 1998; Simpson, Rholes, & Nelligan, 1992). Third, persons who score low on avoidance hold more positive expectations about relationship partners and explain partner behaviors in more positive terms than do persons who score high on this dimension (e.g., Collins, 1996; Collins & Read, 1990). Fourth, persons who score low on anxiety report higher self-esteem and hold more positive self-views than do persons who score high on this dimension (e.g., Bartholomew & Horowitz, 1991; Mikulincer, 1998). Fifth, persons who score low in attachment anxiety and avoidance are more likely to open their cognitive structures to new evidence and to integrate it into their judgments than are persons scoring high on these dimensions (e.g., Mikulincer, 1997).

Although the above-mentioned studies have contributed to the understanding of attachment-style differences, they are correlational in nature and have repeatedly aroused controversy concerning measurement issues (e.g., Brennan et al., 1998). In addition, these studies have not assessed or manipulated the cognitive accessibility of the sense of a secure base and have not provided any evidence that this sense was active before or during the assessment of the dependent variables. Hence, the observed effects can be explained by factors other than the sense of a secure base. Moreover, these studies have ignored the fact that most people possess multiple attachment schemas and that congruent and incongruent attachment-related thoughts and memories may coexist with a particular global attachment style within a person's cognitive structure (Baldwin, Keelan, Fehr, Enns, & Koh Rangarajoo, 1996). In fact, even people with an insecure attachment style can have memories of attachment security, and these memories can be contextually activated by a wide array of external and internal cues, regardless of variations in global attachment style (Baldwin et al., 1996).

Recently, a number of investigators have adopted an alternative research strategy that seems to be more appropriate for testing causal predictions about the effects of the sense of a secure base on theoretically relevant constructs. Using well-validated priming techniques, these researchers contextually activated what might be called the secure base schema and assessed its psychological effects. Overall, the contextual activation of the sense of a secure base leads people to respond similarly to people who have a chronic sense of security. For example, Baldwin (1994) found that exposing participants to the name of a supportive other led to more positive self-evaluation. Pierce and Lydon (1998) found that the priming of proximity-related words increased reliance on support seeking and decreased reliance on self-denigrating strategies when

people were coping with stress. Moreover, priming of memories of attachment security causes people to perceive others in more supportive terms (Cohen, Towbes, & Flocco, 1988) and to increase cognitive openness in response to belief-discrepant information (Mikulincer & Arad, 1999). It is important to mention in the present context that Pierce and Lydon (1998) and Mikulincer and Arad (1999) found no moderation of secure-base priming effects by attachment style. That is, chronic attachment style did not affect susceptibility to the contextual activation of the secure base schema. In fact, such activation produced similar responses in persons who had reported high or low attachment anxiety and avoidance in close relationships.

In the studies reported here, we use the experimental priming strategy to pursue Bowlby's (1969) suggestion that the sense of a secure base plays a role in regulating fear reactions to other people, especially those who are different from oneself or relatively unfamiliar. In elaborating his ideas about behavioral systems, Bowlby (1969) suggested that activation of the attachment system is closely related to activation of the fear system in general and to the innate fear of strangers in particular. On the basis of ethological research (e.g., Bronson, 1968; Collard, 1967), Bowlby (1969) noted that infants are frightened by strangers and that unfamiliar objects, places, and people are "natural clues to danger" (p. 124). Bowlby (1969) also proposed that these clues to danger lead infants to seek proximity to attachment figures and that the availability and supportiveness of these figures mitigates the innate fear reaction. This analysis suggests that the sense of having a secure base should reduce negative reactions to strangers and foster a more tolerant attitude toward unfamiliarity and novelty. The fact that an available caregiver reduces an infant's fear of strangers supports this view (e.g., Morgan & Ricciuti, 1969; Sorce & Emde, 1981). Moreover, secure children have more favorable attitudes toward novel stimuli and engage in more positive interactions with strangers than do insecure children (e.g., Arend, Gove, & Sroufe, 1979; Moss, Gosselin, Parent, Rousseau, & Dumont, 1997).

In applying and extending Bowlby's (1969) ideas to the study of adults, we examine the effects of contextual activation of the sense of a secure base on reactions toward people who are different from oneself or who do not belong to one's own social group. Following the infant's categorization of persons into familiar and unfamiliar classes, children, adolescents, and adults extend this categorization process to social groups that define "us" (the in-group) as different from the unknown, unfamiliar "them" (the out-group; Allport, 1954). This cognitive process is not emotionally neutral but rather seems to be related to basic motivational processes and to result in a biased perception of the in-group as better than the out-group (e.g., Devine, 1995). Social psychology has extensively documented biased perception in studies examining prejudice (e.g., Tajfel, 1982) and in-group favoritism (e.g., Devine, 1995). We hypothesize that this tendency can be moderated by contextual activation of the secure base schema, allowing people to be less negative toward out-group members.

Intergroup Bias and Reactions to Out-Groups

Intergroup bias—the tendency to perceive out-groups as different from oneself and as less desirable than one's compatriots—is a clear and pervasive bias (see Devine, 1995, for a review). Under most circumstances, people tend to perceive and recall members of

their own group as possessing more positive qualities and abilities than do members of other groups (e.g., Brewer & Kramer, 1985). Moreover, people tend to provide more self-serving causal explanations for the outcomes obtained by their group than for an out-group's outcomes (e.g., Hamilton & Trolier, 1986). Even the linguistic labels used to differentiate between in-groups and out-groups tend to facilitate and maintain intergroup bias (e.g., Dovidio & Gaertner, 1993).

According to social identity theory (Tajfel & Turner, 1986), negative reactions to out-groups serve a self-protective function. Individuals are motivated to maintain self-esteem, and group membership constitutes a fundamental source of self-esteem. Therefore, maintenance of the perceived value of one's group contributes to self-esteem. Of course, maintenance of the in-group's higher value entails comparisons with other groups in terms of characteristics that favor the in-group. Once the concept of "us" is formed, people may maintain self-esteem by searching for intergroup differences that favor their group, dismissing differences that favor the out-group, and viewing out-group members as inferior to in-group members (Tajfel & Turner, 1986).

Research has supported the claim that self-protective motives underlie intergroup biases. Fein and Spencer (1997) found that negative reactions to out-groups increased after failure feedback. In this case, self-esteem was threatened, and people might have been motivated to protect it by devaluating out-groups. It is interesting that Fein and Spencer (1997) also found that when participants are given the opportunity to affirm their self-identity, they are less likely to react negatively toward out-groups. In addition, some studies have found that persons with high self-esteem, who tend to be motivated to protect their self-esteem, showed more negative reactions to out-groups than did persons with low self-esteem, who tend to be less driven by self-protective motives (e.g., Crocker & Luhtanen, 1990; Hogg & Abrams, 1990).

An alternative explanation of intergroup bias was offered by Stephan and Stephan (1985), who emphasized the appraisal of out-groups as a source of potential threats. In their view, there are four types of threats that lead people to react negatively toward out-groups. First, out-group members may pose a realistic threat to one's physical and psychological well-being as well as to the political, economic, and cultural power of one's group (e.g., Quillian, 1995). Second, out-group members may symbolically threaten one's worldview, which is derived from intergroup differences in values and beliefs (e.g., Esses, Haddock, & Zanna, 1993). Third, the encounter with out-group members may arouse anxiety because of anticipation of negative outcomes such as disapproval and rejection (e.g., Stephan & Stephan, 1993). Fourth, stereotypes of out-group members may elicit negative expectations of conflict-laden interactions (e.g., Stephan, Ybarra, Martinez, Schwarzwald, & Tur-Caspa, 1998). Several studies have shown that such threats contribute to the development of negative reactions to out-groups (see Stephan & Stephan, 1993; Ybarra & Stephan, 1994, for reviews).

In a related vein, terror management theory (TMT; Greenberg, Pyszczynski, & Solomon, 1997) proposes that negative reactions to out-groups are derived from the symbolic threat these groups pose to faith in a cultural worldview. According to TMT, cultural worldviews provide people with order and meaning and may buffer the anxiety caused by awareness of one's eventual death and recognition that the world is a perilous place (e.g., Greenberg et al.,

1997). As a result, people are motivated to protect their worldview and to reject beliefs that threaten its validity. TMT also contends that death reminders exacerbate negative reactions to out-groups, which may reinforce faith in one's worldview and buffer the terror of death (e.g., Greenberg et al., 1997). In support of this view, Greenberg et al. (1990) found that death reminders led Christian students to react more positively toward a Christian student and more negatively toward a Jewish student. Accordingly, Harmon-Jones, Greenberg, Solomon, Simon, and Pyszczynski (1996) reported heightened in-group favoritism following death reminders even in the "minimal group" paradigm. These findings fit Greenberg et al.'s (1997) contention that negative reactions to out-groups allow people to reassert the validity of worldviews on which they rely to feel secure.

The Present Studies

In the series of studies reported here, we show that attachment theory sheds light on the processes underlying negative reactions to out-groups. We were encouraged to pursue this possibility by previous attempts to integrate the concepts of attachment theory with the research literature on intergroup relations (e.g., Smith et al., 1999). According to Smith et al. (1999), constructs developed within attachment theory can be used to explain ties to groups, and parallels can be drawn between attachment-related feelings toward a relationship partner and feelings toward a group. We were also encouraged by theoretical and empirical work showing that the establishment of attachment relationships with out-group members is an important step in attenuating negative reactions to them and their groups (e.g., Pettigrew, 1997; Wright, Aron, McLaughlin-Volpe, & Ropp, 1997).

Our main hypothesis is that contextual activation of the sense of a secure base attenuates negative reactions to out-groups. This hypothesis is based on past findings showing that attachment security is associated with self-esteem, less devastating appraisals of threatening events, and more constructive ways of coping with threats—three mechanisms that seem to be involved in reactions to out-groups. People with a strong sense of having a secure base tend to maintain high, stable self-esteem without relying on defensive self-enhancement or self-inflation biases (Mikulincer, 1998). Moreover, people with a strong sense of having a secure base tend to appraise threatening events optimistically and believe in their capacity to deal effectively with these events (see Mikulincer & Florian, 1998, for a review). Finally, attachment security has been related to constructive ways of coping with stress in general and with death awareness in particular (e.g., Mikulincer & Florian, 1998, 2000). That is, the sense of having a secure base seems to transform threats into more manageable events without activating self-enhancement needs or other attack-avoidance means. In a similar way, secure-base activation should attenuate negative reactions to out-groups. In other words, negative reactions to out-groups should be less necessary when people have a strong sense that their own psychological foundation is secure.

Our main hypothesis is also based on the theoretical link between attachment and exploration (Bowlby, 1988). As reviewed earlier, the sense of having a secure base allows people to open their schemas to belief-discrepant information (Mikulincer, 1997). Activation of the sense of a secure base may lead people to believe that the ambiguity created by belief-discrepant information is

resolvable and that they have the skills needed to process this information without succumbing to cognitive disorganization. This cognitive openness should be an asset in encounters with out-groups, attenuating negative reactions to people viewed as different.

Study 1

In Study 1 we examined the effects of priming the secure base schema on reactions to in-group and out-group members. Because of their availability, our participants were Israeli Jewish university students for whom Israeli Jews are an in-group and Israeli Arabs are an out-group. Although Jews and Arabs live together in the State of Israel, the two religious–ethnic groups are highly segregated and have a long history of political, cultural, and territorial conflict. Moreover, Israeli Jews tend to react to Israeli Arabs with hostility and prejudice (R. Ben-Ari & Amir, 1988).

In Study 1, the secure base schema was primed by subliminal presentation of words that exemplify this schema (e.g., *love*, *support*). This procedure was originally developed by Arndt, Greenberg, Pyszczynski, and Solomon (1997), who subliminally presented death-related words to prime death-related thoughts. Pierce and Lydon (1998) also used a similar version of this procedure, in which they subliminally presented attachment-related words to prime attachment schemas. We compared the effects of this priming procedure with the effects of two control conditions. In one control condition, participants were subliminally exposed to neutral words unrelated to attachment (e.g., *table*, *boat*). In another control condition, participants were subliminally exposed to words that have a positive affective connotation (e.g., *success*). This second control condition was included for two reasons. First, words that exemplify the secure base schema have a positive affective connotation (Mikulincer, Birnbaum, Woddis, & Nachmias, 2000). Second, there is evidence that positive affect can influence intergroup bias (e.g., Dovidio, Gaertner, Isen, & Lowrance, 1995). To delineate the unique effects of secure base priming on reactions to out-groups, we needed to compare these effects with the effects of priming affectively positive words that are not directly associated with attachment.

While activating the secure base schema experimentally, we also took into account the chronic accessibility of this schema— that is, a person's attachment style. Specifically, we wanted to examine whether the effect of priming the secure base schema would depend on a person's attachment style. On the basis of previous findings (e.g., Pierce & Lydon, 1998; Mikulincer & Arad, 1999), we suggest that the effects of priming the secure base schema do not depend on a person's attachment style. Because all human beings possess an attachment-behavioral system and are potentially responsive to an enhanced sense of security, all of them may be susceptible to the effects of secure base priming, regardless of variations in attachment style. Even for persons who hold a secure attachment style, secure base priming contextually activates specific representations of attachment security that spread over the semantic memory network and then compound these persons' chronic accessibility of the sense of secure base.

Study 1 consists of two sessions. In the first, all participants completed a self-report measure of attachment style. In the second, they completed a computerized word-relation task in which they were randomly divided into three subliminal priming conditions:

secure base priming, positive affect priming, and neutral priming. Following the priming procedure, participants were asked to evaluate two other students on a list of traits. One of these students was an Israeli Jew (an in-group member) and the other was an Israeli Arab (an out-group member). The predictions were as follows:

1. In line with previous research on intergroup bias, participants will evaluate the in-group member more positively than the out-group member.

2. Priming the secure base schema will attenuate intergroup bias. Participants in the secure base priming condition will show less negative reactions to an out-group target than will be exhibited by participants in the positive affect priming and neutral priming conditions.

Study 1 also explores the possible interplay of contextual and chronic accessibility of the sense of secure base. Specifically, we examine the unique and interactive effects of secure base priming and participants' attachment style on reactions to an out-group member.

Method

Participants. One hundred forty-eight Israeli Jewish undergraduate social sciences students (90 women and 58 men ranging in age from 19 to 29, *Mdn* = 23) from Bar-Ilan University, a religious-based Israeli University, participated in the study as part of their research requirements.[1]

Materials and procedure. The study was conducted in two sessions.[2] In the first session, which occurred during lecture time, participants completed a self-report measure of attachment style. This scale consisted of 10 items designed to assess the two major dimensions of attachment style: avoidance and anxiety (Brennan et al., 1998). The decision to use dimensional measures of attachment style was based on Fraley and Waller's (1998) demonstration that categorical measures of attachment style do not provide a complete picture of the variability in attachment organization. Furthermore, Brennan et al. (1998) have shown that a two-dimensional structure underlies most measures of adult attachment style.

To measure the two dimensions in Hebrew, we decomposed Hazan and Shaver's (1987) descriptions of avoidant and anxious–ambivalent styles and constructed 5 items for each style (for details, see Mikulincer, Florian, & Tolmacz, 1990). Participants were asked to read each item and rate the extent to which it described them on a 7-point scale ranging from *not at all*

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[1] Across all five experiments, there were no significant differences between priming conditions in gender distribution. Moreover, there were no significant interactions of gender as a factor with priming, target affiliation, or other independent variables in predicting any of the dependent variables.

[2] In all five experiments, all of the participants who were originally approached took part in an experimental session if they chose to. Before leaving this session, however, they completed a brief demographic sheet in which they reported, in the midst of filler items, their nationality (Jewish, Arab, Druze), level of religiosity, place of birth, and sexual orientation. The data were then used to determine participants' in-group identification in the statistical analyses. In Studies 1 and 5, all of the participants were Israeli Jews, so all of them were included in the analyses of reactions to Israeli Arabs. In Study 2, 33 members of the original sample (*N* = 153) defined themselves as religious Jews. Then, they were excluded from the analyses of reactions to ultraorthodox religious Jews. In Study 3, 20 members of the original sample (*N* = 100) were born in Russia; they were therefore excluded from the analysis of reactions to Russian immigrants. In Study 4, 8 participants defined themselves as having a homosexual orientation, and they were therefore excluded from the analysis of reactions to homosexuals.

(1) to *very much* (7). A detailed examination of these items revealed that the anxiety items corresponded to Brennan et al.'s (1998) anxiety items and the avoidance items corresponded to Brennan et al.'s (1998) avoidance items. Moreover, a factor analysis of the 10 items conducted on data from previous studies revealed that the items were indeed organized around the two dimensions of anxiety and avoidance (e.g., Mikulincer et al., 1990). In the present sample, Cronbach's alphas for the two scales were adequately high (.73, .82), so we computed two scores by averaging items that corresponded to each dimension. No significant association was found between these two scores, $r(138) = .07$. No significant gender difference was found in the two attachment scores.

The second session, conducted 1 week later on an individual basis by a different experimenter, was presented as a study of social perception and attitudes.[3] Following general instructions, we subliminally primed the secure base schema using a method developed by Arndt et al. (1997). Participants were told that they would take a computerized word-relation test that assessed the perceived relationship between social concepts. We explained that in each trial two words would be flashed sequentially on the computer screen and that the participant should indicate whether these words were positively related or opposed to each other by pressing either the right or the left shift key, respectively. The following example was provided: "If you see the words *democracy* and *religion* and you think they go together, you should press the right shift key. However, if you think they are opposites, you should press the left shift key."

We ran the word-relation task on a Pentium IBM personal computer with an SVGA color monitor. Brightness and contrast were set somewhat low, and the words were displayed in white lettering on a black background in the middle of the screen. Participants worked at their own pace. Each trial of the task consisted of a sequential presentation of three words. The first and third words were the social concepts between which participants were supposed to determine the type of relationship. Without the participant's knowledge, these words served as a forward mask (and fixation point) and as a backward mask, respectively, for the subliminal critical primes; the words were displayed for 500 ms. The critical primes—related to either a secure base, a positive affect, or a neutral theme, depending on the experimental condition—were presented between the two mask words for 20 ms. This temporal parameter was similar to those used in prior studies (e.g., Murphy & Zajonc, 1993). Even when a prime is presented for as little as 20 ms, the pattern may remain temporarily active in the early stages of visual processing. To avoid this problem, we masked the prime on each trial with the second social concept, which appeared immediately after the prime. A pretest indicated that participants ($N = 10$) were not able to detect the subliminal primes after repeated presentation (less than 1% of correct detection).

The word-relation task consisted of 60 trials (with a 2-s intertrial interval) in which different pairs of 12 concepts (e.g., *religion, army*) were sequentially presented. The critical subliminal primes consisted of four words (see below for details) that were randomly presented 15 times during the 60 trials. Trials were randomly ordered across participants.

Participants were randomly assigned to one of three conditions according to the critical subliminal primes they received. For participants in the secure base priming condition ($N = 48$), the primes were four Hebrew words (*kirva, ahava, hivuk, ezra*) that connote the attainment of proximity to others (i.e., *closeness, love, hug, support*, respectively). For participants in the positive affect priming condition ($N = 50$), the primes were four Hebrew words (*simha, hagun, mazal, hazlaha*) that have a positive connotation but no direct link to attachment (i.e., *happiness, honesty, luck, success*, respectively). For participants in the neutral priming condition ($N = 50$), the primes were four Hebrew words (*misrad, shulhan, sira, tmuna*) that have no positive or negative connotations and no link to attachment (i.e., *office, table, boat, picture*, respectively). As expected, we found no significant differences in the two attachment scores among the three experimental conditions.

At the end of the word-relation task, participants were told that the next part of the study would focus on the impressions people form of each other. They were told that they would be given personal information supplied by 2 other participants they would subsequently meet and that they would use the material to evaluate these targets. Then participants received a set of questionnaires completed by two people thought to be university students of the participant's own gender. They also received two sets of evaluation forms and an envelope. There were two versions of the questionnaires, one appearing to have been filled out by an in-group member (a Jewish student), and the other appearing to have been filled out by an out-group member (an Arab student). The procedure and the materials were similar to ones used by Greenberg et al. (1990). The presentation order of the two targets was counterbalanced. Participants evaluated the targets in a specific order and rated each one immediately after reading about the person.

The target material consisted of three questionnaires. First, participants received a background questionnaire in which the two supposed students provided demographic information, such as gender, age, and marital status. More important, this questionnaire also asked about parents' religion, which was used to manipulate the target's affiliation. For the in-group target, both parents were Jewish. For the out-group Arab target, both parents were Muslims. Second, participants received 10 "Who am I?" questions, in which the targets freely wrote about their academic careers, expectations, and life style. The two versions involved relatively similar responses to the 10 "Who am I?" questions, with the exception of the response to the third question, which asked about national identity. The in-group target defined him- or herself as an Israeli Jew. The out-group target defined him- or herself as a Palestinian Israeli citizen. Third, participants received a social issues survey, in which the targets indicated on 7-point scales their level of agreement with 10 statements. Two versions of this scale were constructed, one tending to have liberal responses, and the other tending to have more conservative responses. Different attitudes were presented so that the targets would seem to be different people. The endorsement of liberal–conservative attitudes was counterbalanced across in-group and out-group affiliation. For half of the participants, the in-group target answered the liberal version and the out-group target the conservative version. The remaining participants received reversed versions for each target.[4]

Each of the two evaluation assessments (one for each target) consisted of 15 items; participants were instructed to indicate on a 7-point scale ranging from *not at all* (1) to *very much* (7) how characteristic each of 15 traits was of the target. The 15 traits were similar to those used by Greenberg et al. (1990) and consisted of 9 positive traits (*honest, cheerful, reliable, trustworthy, intelligent, warm, patient, kind, stable*) and 6 negative traits (*argumentative, sleazy, spineless, impulsive, manipulative, lazy*). Alpha coefficients for the 15 items (after reversing the response scale for negative traits) indicated high internal consistency (.91 for the in-group target, .94 for the out-group target). We therefore computed a total evaluation score for each participant and each target. Higher scores reflected a more positive evaluation of the target.

When they had completed the evaluation forms, participants were asked to put them in an envelope, seal it, and drop it in a box to ensure anonymity.

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[3] In all five studies, the experimenter was unaware of the priming conditions and target affiliation manipulations. In Studies 1 and 2, the experimenter was also unaware of attachment scores. Because of the procedure in Study 4, the experimenter was not unaware of feedback manipulation.

[4] ANOVAs indicated that reactions to in-group and out-group targets were not significantly affected by the order of target presentation nor by the attitude endorsed by a target. In addition, these two factors did not interact significantly with priming condition, target affiliation, or attachment scores to affect target evaluations.

Then participants were given a brief questionnaire concerning the word-relation task. They were asked the following questions: "How many words did you see in each display?" "Did you see more than two words flashed at a time?" "If yes, was it the same word or a different word from the others you saw?" "If you think it was a different word, write what you think it may have been." All participants answered that they saw only two words in each display. That is, none of the participants was able to detect the subliminal primes.

Results and Discussion

To test Predictions 1 and 2, we conducted a two-way analysis of variance (ANOVA) for priming (secure base, positive affect, neutral) and target affiliation (in-group, out-group) on the evaluation scores.[5] The last factor was within-subject. This analysis yielded the typical significant main effect for target affiliation, $F(1, 145) = 48.83, p < .01, \eta^2 = .24$, with participants evaluating the in-group target more favorably than the out-group target ($M = 4.39$ vs. $M = 3.61$). However, this effect was qualified by a significant interaction with priming, $F(2, 145) = 6.79, p < .01, \eta^2 = .09$. In line with Prediction 2, simple main effect tests indicated that the more favorable evaluation of the in-group than of the out-group target was significant only in the neutral priming condition, $F(1, 145) = 21.51, p < .01$, and the positive affect priming condition, $F(1, 145) = 23.68, p < .01$, but not in the secure base priming condition (see means in Table 1). In the latter case, no notable difference was found between the evaluations of the two targets. The tests also revealed that secure base priming led to more positive evaluation of the out-group target than did positive affect priming and neutral priming, $F(2, 145) = 16.03, p < .01$ (see Table 1). No significant effect of priming was found on the evaluation of the in-group target.

In exploring the unique and interactive effects of secure base priming and attachment style, we conducted a multiple hierarchical regression on the evaluation of each target (in-group, out-group). In the first step, secure base priming (dummy variable for secure base priming vs. neutral priming and positive affect priming), attachment anxiety, and attachment avoidance were introduced as predictors, and ratings of the other target were also introduced to control for their variations. In the second step, the product (interactive) terms of Attachment Anxiety × Attachment Avoidance, Secure Base Priming × Attachment Anxiety, and Secure Base Priming × Attachment Avoidance were introduced. In the third

step, the product representing the three-way interaction of Secure Base Priming × Anxiety × Avoidance was introduced.

The regression conducted on the evaluation of the out-group target yielded the following results. In the first step, secure base priming had a significant unique main effect on evaluation of the out-group target, $\beta = .35, p < .01$, even after controlling for the contribution of attachment style and ratings of the in-group target. In addition, attachment anxiety was significantly related to evaluation of the out-group target, $r(146) = -.24, p < .05$, and had a significant unique main effect on this evaluation, $\beta = -.21, p < .05$. Avoidance did not significantly contribute to the evaluation of the out-group target. In the second and third steps, the regression yielded no significant interactions on evaluation of the out-group target. That is, the unique effect of secure base priming on out-group evaluation did not significantly depend on attachment style. The regression conducted on the evaluation of the in-group target revealed no significant main effects for secure base priming, anxiety, and avoidance nor any significant two-way or three-way interactions.

Overall, the findings support the prediction that secure base priming would attenuate negative reactions to out-group members. The findings also show that secure base priming had no significant effect on reactions to in-group members. The effects of secure base priming could not be attributed to the priming of positive affect. In fact, as compared with a neutral priming condition, positive affect priming had no significant effect on participants' reactions to an out-group target. In addition, secure base priming had a unique effect on reactions to out-group members beyond variations in attachment style. Independent of secure base priming, attachment anxiety made a significant negative contribution to evaluation of the out-group target.

For several reasons, these conclusions should be regarded cautiously. First, the findings are based on reactions to a single out-group and should be replicated with other out-groups. Second, Study 1 used a single priming technique. The findings should be replicated with other priming procedures. Third, the findings were obtained with a within-subject design, which might have raised awareness of and suspicions about the target affiliation manipulation. It is important to replicate the findings with a between-subjects design. Fourth, although secure base priming and positive affect priming produced different evaluative reactions, it is still possible that secure base priming improved participants' mood, which in turn might have been responsible for the observed effects. It would be informative to assess a person's mood after secure base priming. Study 2 is an attempt to deal with these limitations of Study 1.

Study 2

In Study 2 we assessed the reactions of secular Israeli Jews to another well-defined out-group, ultraorthodox religious Jews. In their extensive review, R. Ben-Ari and Amir (1988) pointed out that the cultural conflict between secular and ultraorthodox religious groups is one of the most important sources of intergroup

Table 1
*Means and Standard Deviations of Evaluative Reactions to
In-Group and Out-Group Targets According to
Priming Condition (Study 1)*

Target	Secure base priming	Positive affect priming	Neutral priming
In-group target			
M	4.43$_a$	4.30$_a$	4.44$_a$
SD	0.81	0.89	1.02
Out-group target			
M	4.23$_a$	3.34$_b$	3.28$_b$
SD	1.09	0.92	0.77

Note. Means with different subscripts within rows are significantly different at $\alpha = .01$. Higher scores indicate more positive evaluations.

tension in Israeli society and that each group reacts with hostility and prejudice to the other. In Study 2, these reactions were assessed in a between-subjects design in which one group of secular Jewish participants rated their willingness to interact with an ultraorthodox religious Jew (out-group target) and another group of secular Jewish participants rated their willingness to interact with a secular Jew (in-group target).

Because we wanted to use a different priming technique, we had participants perform a guided imagination task in which they visualized an interpersonal episode containing the prototypical if–then sequence of the secure base schema (Mikulincer & Arad, 1999). This priming procedure was aimed at activating the secure base script. In an attempt to control for mood variations, we had participants report on their moods immediately after the priming procedure. Moreover, as in Study 1, secure base priming was compared with neutral priming and positive affect priming.

Study 2 consisted of two sessions. In the first session, all participants rated their attachment styles. In the second session, they completed a guided imagination task in which they were randomly divided into three conditions according to the script they were asked to imagine: secure base priming, positive affect priming, and neutral priming. Next, all participants reported on their mood and rated their willingness to interact with a hypothetical target. In this task, they were randomly divided into two subgroups according to the religiosity of the target (secular Israeli Jew, ultraorthodox religious Israeli Jew). The predictions were the same as in Study 1.

Method

Participants. The sample consisted of 120 Israeli Jewish participants who did not identify themselves as ultraorthodox Jews. All were undergraduate social science students from Bar-Ilan University (74 women and 46 men ranging in age from 18 to 32, *Mdn* = 23) who participated in the study as part of their research requirements. They were randomly divided into six conditions according to a between-subjects 3 × 2 design, with 20 participants in each group.

Materials and procedure. In the first of two sessions, conducted during class time, participants completed the 10-item attachment style scale described in Study 1. Cronbach's alpha for the 5 avoidance items was .78; for the 5 anxiety items it was .83. As in Study 1, no significant association was found between these two scores, $r(118) = .04$, and they did not differ significantly as a function of gender, priming condition, or target affiliation condition.

The second session, conducted 1 week later in small groups of 4–5 people by a different experimenter, was presented as a study of social cognition. Before the priming procedure, participants were told that this part of the study examined how people visualize social situations and what kinds of thoughts and emotions these visualizations evoke. They then received written instructions for the guided imagination task and were randomly divided into three priming conditions. The procedure was similar to that used by Mikulincer and Arad (1999).

In the secure base priming condition, participants received the following instructions: "Imagine yourself in a problematic situation that you cannot solve on your own, and imagine that you are surrounded by people who are sensitive and responsive to your distress, want to help you only because they love you, and set aside other activities in order to assist you." In the neutral priming condition, the instructions were as follows: "Imagine yourself going to a grocery store and buying products you need for your house, and imagine other persons who are also buying products, talking among themselves about daily issues, examining new brands, and comparing different products." In the positive affect priming condition, the in-

structions were as follows: "Imagine yourself receiving a notice that you win a large amount of money in the national lottery, and imagine other students in your class hearing about this notice, approaching you, congratulating you, and telling others about your good fortune." In all three conditions, participants were instructed to close their eyes and picture the faces of the persons they imagined in the described situation. They were given around 2 min to do this.

Following the guided imagination task, participants rated the vividness and clarity of their visualization—on 7-point scales ranging from 1 (*not at all*) to 7 (*very much*)—and wrote on a blank sheet of paper the thoughts elicited by the exercise. This writing task was intended to give a plausible justification for the imagination task (Baldwin et al., 1996). Statistical analyses showed that there were no significant differences in the vividness and clarity of the visualizations across the three priming conditions. Responses in the free writing task were brief (one or two sentences describing the script of the imagined situation) without much cognitive or emotional elaboration. We therefore could not usefully code or analyze these responses.

Next, all participants rated their current mood to provide a check on the affective consequences of the priming procedure. On a 6-point scale ranging from *not at all* (1) to *very much* (6), participants rated the extent to which they felt good, happy, calm, sad, depressed, and anxious. Coefficient alpha for the six items (after reversing the response scales of the negative affect items) was .92, indicating high internal consistency. We therefore computed a mood score by averaging the six items. Higher scores indicated a more positive mood.

Following the mood assessment, all participants received the questionnaires described in Study 1 (the background questionnaire, the 10 "Who I am?" questions, and the social survey scale), supposedly filled out by another student (of the same gender as the participant) whom they would subsequently meet. They were then randomly divided into two subgroups according to the religiosity of the target. In the in-group condition, the target was described in the background questionnaire and in one of the "Who I am?" questions as a secular Jew. In the out-group condition, the target was described as an ultraorthodox religious Jew. With the exception of this information, participants in the two conditions received identical versions of the questionnaire. As in Study 1, the endorsement of liberal–conservative attitudes was counterbalanced across in-group and out-group affiliation. For half of the participants, the in-group target answered the liberal version and the out-group target the conservative version. The remaining participants received reversed versions for each target. Statistical analyses revealed that the main effect for the attitude endorsed by a target on willingness to interact was not significant and that this factor did not significantly interact with priming condition, target affiliation, or attachment scores.

When they had read the target's responses, participants in each condition were asked to complete a 10-item scale. This scale was based on similar scales used in studies of social attraction (e.g., Winer, Bonner, Blaney, & Murray, 1981) and consisted of six items tapping participants' willingness to interact with the described target (e.g., "Would you like to invite him to your home?" and "Would you like him to join you when you go out with your friends?") and four filler items. Participants rated the extent to which they were willing to interact with the target on a 6-point scale ranging from *not at all* (1) to *very much* (6). Cronbach's alpha for the six relevant items was .77, indicating adequate internal consistency. We therefore computed a total score by averaging the six items. Higher scores indicate greater willingness to interact with the target. At the end of the experimental session, participants were debriefed.

Results and Discussion

To examine the effects of secure base priming, we conducted a two-way ANOVA for priming (secure base, positive affect, neutral) and target affiliation (in-group, out-group) on the willingness-

to-interact score. This analysis yielded the expected significant main effect for target affiliation, $F(1, 114) = 18.91, p < .01, \eta^2 = .12$, with participants reporting more willingness to interact with the in-group target than with the out-group target ($M = 4.54$ vs. $M = 3.55$). As predicted, however, this effect was qualified by a significant interaction with priming, $F(2, 114) = 4.54, p < .05, \eta^2 = .07$. Replicating Study 1, simple main effect tests showed that the higher willingness to interact with the in-group than with the out-group target was significant only in the neutral priming condition, $F(1, 114) = 10.99, p < .01$, and in the positive affect priming condition, $F(1, 114) = 17.48, p < .01$, but not in the secure base priming condition (see the means in Table 2). In the latter condition, no notable difference was found in the willingness to interact with the in-group and the out-group targets. The tests also revealed that secure base priming led to higher willingness to interact with the out-group target than did the positive affect priming and neutral priming conditions, $F(2, 114) = 9.47, p < .01$ (see Table 2). There was no significant priming effect on reactions to the in-group target. These results replicate the results of Study 1, this time with a between-subjects design, a different out-group, and a different priming method.

In exploring the effects of attachment style, we conducted a four-step hierarchical regression analysis examining the main and interactive effects of priming, target affiliation, attachment avoidance, and attachment anxiety. The findings replicated those of Study 1. First, the interaction between secure base priming and target affiliation was still significant, $\beta = -.64, p < .01$, even after controlling for attachment style scores. Second, a significant interaction was found between attachment anxiety and target affiliation, $\beta = -.59, p < .05$. Partial correlations (controlling for attachment avoidance) indicated that whereas attachment anxiety was significantly associated with lower willingness to interact with the out-group target, $r(57) = -.48, p < .01$, no significant association, $r(57) = -.06$, was found between attachment anxiety and willingness to interact with the in-group target. No other effects were significant. The lack of additional interactions between priming, target affiliation, and attachment scores emphasizes the independence of the effects of secure base priming and attachment anxiety on willingness to interact with an out-group target.

With regard to the possible role of mood as a mediator, a two-way ANOVA testing the effects of priming and target affiliation on the mood score revealed a significant main effect for

Table 2

Means and Standard Deviations of Willingness to Interact According to Priming Condition and Target Affiliation (Study 2)

Target	Secure base priming	Positive affect priming	Neutral priming
In-group target			
M	4.55$_a$	4.57$_a$	4.49$_a$
SD	1.19	1.23	1.36
Out-group target			
M	4.52$_a$	2.98$_b$	3.16$_b$
SD	1.31	1.19	1.16

Note. Means with different subscripts within rows are significantly different at $\alpha = .01$. Higher scores indicate more willingness to interact with the target.

priming condition $F(2, 114) = 6.16, p < .01, \eta^2 = .09$. No other effects were significant. Scheffé tests indicated that secure base priming and positive affect priming led to more positive mood ($M = 3.73, M = 3.81$, respectively) than did neutral priming ($M = 3.27$). No significant difference was found between the secure base priming and the positive affect priming conditions. In addition, Pearson correlations revealed a significant association between attachment anxiety and mood, $r(118) = -.39, p < .01$. However, Pearson correlations revealed no significant association between reported mood and willingness to interact with either an out-group or an in-group target ($rs = .04$ and $.03$, respectively). Moreover, an analysis of covariance (ANCOVA) testing the effects of priming and target affiliation on willingness to interact, with mood included as a covariate, replicated the original ANOVA's significant interaction between priming and target affiliation, $F(2, 113) = 4.53, p < .05, \eta^2 = .07$. The simple main effects and mean differences tests also remained significant after partialing out mood. That is, even after controlling for mood, secure base priming led to greater willingness to interact with an out-group target than did other conditions.

Overall, the findings were in line with those of Study 1, supporting the prediction that secure base priming would attenuate negative reactions to out-group targets. In addition, although secure base priming improved mood, its effect on reactions to an out-group member cannot be explained by mood improvement. Replicating Study 1, the findings indicated that secure base priming and anxious attachment style had unique and independent effects on reactions to an out-group target. In fact, a meta-analysis of the interactive effects for secure base priming and attachment style scores across Studies 1 and 2 revealed that the overall size of these effects was small ($z_r = .06$), implying that if there was an interaction, it was a small one and not of much importance. On this basis, Studies 3–5 exclusively focus on the effects of secure base priming without assessing participants' attachment styles.

Study 3

The main purpose of Study 3 was to examine the potential role of threat appraisal in mediating the effects of secure base priming on reactions to out-groups. Secure attachment has been found to attenuate the threat appraisal of potentially distressing events (Mikulincer & Florian, 1998), and Stephan and Stephan (1985) have argued that the appraisal of out-groups in threatening terms may lead to negative reactions to these groups. We can thus expect that secure base priming will attenuate the appraisal of the threats posed by out-group members and that this attenuated threat appraisal will be related to less negative reactions to these people.

The second purpose of Study 3 is to replicate the effect of secure base priming on reactions to out-group members (Studies 1 and 2) using a different priming procedure and a different out-group. In Study 3, the priming technique was Baldwin et al.'s (1996) visualization task, in which participants visualized a real person who served as a secure base for them. This time, Russian immigrants were chosen as the out-group. Prior studies have found that Israelis have a strong prejudice against this immigrant group and tend to perceive them as a source of anxiety (e.g., Stephan et al., 1998). Thus, participants visualized a loving and supportive person (secure base priming), a happy person (positive affect priming), or a casual acquaintance (neutral priming). They then reported on their

mood, evaluated Russian immigrants, and rated the extent to which this out-group posed real and symbolic threats and elicited intergroup anxiety.

Method

Participants. Eighty undergraduate Israeli Jewish students from Bar-Ilan University (46 women and 34 men ranging in age from 19 to 28, $Mdn = 23$) participated in the study without monetary reward. All were born in Israel.

Materials and procedure. Participants were invited to participate individually in a study that examined how people visualize other persons. They then filled out the Interpersonal Information Questionnaire (Baldwin et al., 1996), which asked them to generate names of 10 people who fit a given description (including the priming targets and a Russian immigrant). Then participants received written instructions in which they were asked to visualize one of the persons they had identified, bring this person to mind, and think about him or her for 2 min. At this stage, participants were randomly divided into three conditions. In the secure base priming condition ($N = 30$), they visualized a person "who accepts and loves you and helps you in times of need." In the positive affect condition ($N = 25$), participants visualized a person "who is always happy and loves fun and jokes." In the neutral condition ($N = 25$), participants visualized a person "who lives in your neighborhood, but you do not know well."

After the visualization task, participants rated the vividness and clarity of their visualization—on 7-point scales ranging from 1 (*not at all*) to 7 (*very much*)—and freely wrote about the thoughts the visualization elicited. As in Study 2, no significant differences were found between priming conditions in vividness or clarity ratings, and the brevity of the responses in the free writing task (one or two sentences describing physical aspects of the visualized person) did not enable us to code or analyze them. At this time, participants rated their mood using the scale described in Study 2. Alpha for the six mood items was adequate (.85), so we computed a mood score by averaging the six items.

Following the mood assessment, all participants were asked to visualize the person they identified as "a Russian immigrant student whom you do not know well," and they then received two scales concerning reactions to Russian immigrants in general. The order of the scales was counterbalanced. ANOVAs indicated that the order of the scales did not significantly affect participants' responses and that this factor did not interact significantly with priming condition.

One scale tapped the evaluation of Russian immigrants and was identical to that used in Study 1. Participants rated on a 7-point scale how applicable each of 15 traits (9 positive and 6 negative) was to Russian immigrants. The alpha coefficient for the 15 items (after reversing the scale of negative traits) was high (.92), so we computed a total evaluation score for each participant. Higher scores reflected more positive evaluations of Russian immigrants.

Another scale consisted of 21 randomly ordered items tapping the extent to which Russian immigrants were appraised as a source of realistic threat, symbolic threat, and intergroup anxiety (Stephan & Stephan, 1985). All of the items were rated on a 6-point agreement scale ranging from *I do not agree at all with the item* (1) to *I totally agree with the item* (6). The items were taken from the Hebrew version of Stephan et al.'s (1998) measure of Israelis' reactions to Russian immigrants.

Seven items tapped realistic threats posed by Russian immigrants and included such threats as crime, job loss, and economic costs for social services. Another seven items assessed symbolic threats posed by perceived differences in values and beliefs between Israeli participants and Russian immigrants. Finally, a third set of seven items tapped anxiety-related feelings (e.g., apprehension, worry, anxiety) related to interactions with Russian immigrants. The Cronbach's alphas were .85, .79, and .81 for the realistic threat, symbolic threat, and intergroup anxiety items, respectively. We computed three scores by averaging the seven items in each subscale. Higher scores reflected a higher appraisal of Russian immigrants as a source of realistic threat, symbolic threat, and intergroup anxiety. In line with prior findings (e.g., Stephan et al., 1998), these three scores were highly intercorrelated (correlations ranged from .69 to .76).

Results and Discussion

Replicating the results of Studies 1 and 2, a one-way ANOVA performed on the evaluation of the out-group yielded a significant effect for priming condition, $F(2, 77) = 3.81, p < .05, \eta^2 = .10$. As expected, Scheffé tests showed that participants in the secure base priming condition evaluated Russian immigrants more favorably than did participants in the positive affect priming or neutral priming condition (see means in Table 3). No significant difference was found between the two control conditions.

When we examined the mediating role of threat appraisal, a one-way multivariate ANOVA revealed a significant effect of

Table 3

Means and Standard Deviations of Evaluation, Perceived Threat, and Anxiety Scores With Regard to Russian Immigrants According to Priming Condition (Study 3)

Dependent variable	Secure base priming	Positive affect priming	Neutral priming	$F(2, 77)$	η^2
Evaluation score				3.81*	.10
M	5.05_a	4.53_b	4.51_b		
SD	0.72	0.93	0.84		
Realistic threat score				4.37*	.10
M	2.15_a	2.74_b	2.69_b		
SD	0.76	0.79	0.92		
Symbolic threat score				4.55*	.11
M	2.38_a	2.74_{ab}	3.02_b		
SD	0.70	0.93	0.74		
Intergroup anxiety score				7.82**	.17
M	2.01_a	2.85_b	2.57_b		
SD	0.82	0.89	0.72		

Note. Means with different subscripts within rows are significantly different at $\alpha = .01$. Higher evaluation scores reflect more positive evaluations.
$* p < .05.$ $** p < .01.$

priming condition on the set of threat scores, $F(6, 150) = 4.08$, $p < .01$, $\eta^2 = .18$. Univariate ANOVAs revealed that this effect was significant for all three threat scores (see Fs in Table 3). Scheffé tests indicated that participants in the secure base priming condition appraised Russian immigrants as posing less realistic threat and eliciting less anxiety than did participants in the positive affect priming and neutral priming conditions (see means in Table 3). These tests also showed that participants in the secure base priming condition appraised Russian immigrants as posing less symbolic threat than did participants in the neutral priming condition (see Table 3). No significant difference was found between the two control conditions.

In line with Stephan and Stephan's (1985) model, Pearson correlations revealed that the higher the appraisal of Russian immigrants as a source of threat, the more negative was the evaluation of this group, $r(78) = .25$, $p < .05$, for realistic threat; $r(78) = .21$, $p < .05$, for symbolic threat; and $r(78) = .34$, $p < .05$, for anxiety. The most important finding was that the control of threat scores as covariates in an ANCOVA weakened the effect of secure base priming on the evaluation score and rendered this effect no longer significant ($F < 1$). This technique reduced the contribution of secure base priming to the explanation of the evaluation score from 10% of the variance to 2%. Sobel's (1982) test for mediation revealed that this difference in the effect of secure base priming before and after the control of threat scores was statistically significant, $Z = -2.56$, $p < .05$. This pattern of findings indicated that threat appraisal was an important mediator of the effects of secure base priming on evaluation of Russian immigrants.

Once again, the predicted effect could not be explained by variations in reported mood. A one-way ANOVA revealed that secure base priming and neutral priming conditions did not significantly differ in reports of mood ($M = 3.71$ vs. $M = 3.59$). In fact, only positive affect priming led to a more positive mood ($M = 4.20$) than did neutral priming, $F(2, 77) = 5.36$, $p < .05$, $\eta^2 = .11$. Moreover, mood was not significantly associated with the evaluation and threat scores (correlations ranged from $-.01$ to $-.13$), and the statistical control of mood did not change the observed effect of priming on the evaluation score, $F(2, 76) = 3.09$, $p < .05$, $\eta^2 = .09$. The reported mean differences also remained significant after partialing out mood.

The results replicated those of Studies 1 and 2, showing again that secure base priming attenuates negative reactions to out-groups and that this effect cannot be explained by mood. It is interesting to note that this effect was mediated by threat appraisal of the out-group. Secure base priming led to lower threat appraisal of the out-group, which was reflected in less out-group devaluation.

Study 4

Studies 1–3 indicated that priming the secure base schema attenuated negative responses to out-groups. However, although the out-group targets in these studies might have constituted a symbolic threat to participants' group identity, they did not actually threaten any aspect of a participant's personal identity (e.g., his or her self-esteem). Moreover, participants' motivational state was fairly neutral, which may not have favored derogation or rejection of out-group targets. The main question in Study 4 was

whether priming the secure base schema would still attenuate negative reactions to out-group targets when contextual conditions threatened participants' personal identity and motivated them to react negatively to out-groups.

Study 4 examines the effects of secure base priming on negative reactions to another specific out-group—homosexuals. Previous studies have found that Israelis have negative attitudes toward homosexuals (e.g., A. T. Ben-Ari, 1998), In addition, Study 4 examines the effects of secure base priming under neutral and self-esteem threat conditions. According to Tajfel and Turner (1986), negative reactions to out-groups serve a self-protective function and may be exacerbated by any threat to self-esteem. Indeed, Fein and Spencer (1997, Study 2) found that stereotypic negative reactions to a homosexual target were stronger under self-esteem threat than under neutral conditions. It seems important, therefore, to examine whether secure base priming affects reactions to out-groups among people who are experiencing a threat to self-esteem.

According to attachment theory, secure base priming should attenuate negative reactions to out-group targets after a self-esteem threat and might even be expected to eliminate the effects of such a threat. This hypothesis is based on prior findings showing that the sense of a secure base and the consequent activation of proximity seeking serve as cognitive–affective shields against self-esteem threats and render the activation of additional self-protective mechanisms unnecessary (e.g., Mikulincer, 1998). In fact, securely attached people were found to react to self-esteem threats without any defensive attempt to inflate their positive self-image or distort their appraisals of other people (Mikulincer, 1998; Mikulincer, Orbach, & Iavnieli, 1998). Theoretically speaking, secure base priming should shield a person against potential threats to self-esteem and thereby reduce the defensive need to devalue or reject out-group members.

To test this hypothesis, we exposed participants to either secure base priming or neutral priming conditions. In Study 4 we used the priming technique described in Study 1 (presentation of subliminal primes within a word relation task). Half of the participants in each priming condition received self-esteem threat information in the form of bogus failure feedback on a cognitive task. The other half received no such feedback. Later, all participants received personal information about a hypothetical same-sex person and rated their willingness to interact with him or her. The information about the target was manipulated so as to suggest to half of the participants that the target had a homosexual orientation and to the other half that he or she had a heterosexual orientation. Because only participants who reported a heterosexual orientation were included in the statistical analyses, the homosexual target was treated as the out-group target and the heterosexual target as the in-group target. Study 4 therefore followed a 2 × 2 × 2 between-subjects factorial design for prime (secure base, neutral), feedback (failure, no), and target affiliation (in-group, out-group).

We predicted a significant interaction between priming, feedback, and target affiliation. In the neutral priming condition, we expected to replicate Fein and Spencer's (1997) findings. Participants would be less willing to interact with an out-group target if they had received failure feedback than if they had not. In the secure base priming condition, this effect of feedback would be attenuated. Moreover, secure base priming would make partici-

pants more prone to interact with an out-group target than would neutral priming after the receipt of either failure or no feedback.

Method

Participants. The sample consisted of 120 Israeli students from Bar-Ilan University (74 women and 46 men ranging in age from 18 to 32, $Mdn = 23$), who volunteered to participate in the study without monetary reward. Participants were randomly divided into eight conditions according to a $2 \times 2 \times 2$ between-subjects design, with 15 participants in each condition.

Materials and procedure. Participants were run individually. The general instructions and the word relation task were identical to those described in Study 1. Participants were divided into two priming conditions according to the subliminal primes presented (secure base priming, neutral priming). The materials and procedure for this manipulation were identical to those used in Study 1. Following the priming procedure, participants performed a 15-trial computerized concept formation task. On each trial, two different geometrical configurations, each composed of two concentric figures and a line crossing them, appeared on each side of a standard personal computer monitor screen. Each of the figures could vary along 4 two-value dimensions: external figure, internal figure, color of the figures, and the orientation of the line crossing the figures. Each trial was presented for 5 s, and the intertrial interval was around 3 s.

Participants in each priming condition were randomly divided into two subgroups according to the feedback they received during the concept formation problem. In the failure feedback condition, the task was presented as a cognitive task, and participants were told that the experimenter had selected a particular combination of values of the various dimensions and that the participants' assignment was to discover the selected combination. They were also told that this combination could range from one value (i.e., a green figure) to four values (i.e., a green external circle with an internal triangle and a horizontal line crossing them). For each of the trials, participants were asked to indicate which of the two figures included the selected configuration. At the end of the task, they were asked to indicate what they thought the selected configuration was. Actually, the experimenter did not select any combination. For each trial, the experimenter provided 7 "correct" and 8 "incorrect" feedback messages in random order. At the end of the problem, participants were told "That's the wrong answer."

In the no-feedback condition, the task was presented as an aesthetic preference task. For each trial, participants indicated which of the two presented configurations they preferred. The experimenter provided no feedback after a trial or at the end of the task.

When they had completed the concept formation problems, all participants rated their current mood on the six-item scale described in Study 2. Cronbach's alpha for the six items was high (.90). Immediately following the mood assessment, all participants were told that they would be given personal information supplied by another person whom they would subsequently meet and that they would be asked to rate their willingness to interact with him or her. Participants received the set of questionnaires described in Study 1 (the background questionnaire, the 10 "Who I am?" questions, and the social survey scale), supposedly filled out by the target person (of the same gender as the participant). They were then randomly divided into two subgroups according to the target's sexual orientation. In the in-group condition, the target described him- or herself as having a heterosexual orientation in one of the "Who am I?" questions. In the out-group condition, the target described him- or herself as having a homosexual orientation. With the exception of this information, participants in the two conditions received identical versions of the target's questionnaires. As in Study 2, the endorsement of liberal–conservative attitudes was counterbalanced across in-group and out-group affiliation. Analyses revealed that the main effect for the attitude endorsed by a target on willingness to interact was not significant and that this factor did not significantly interact with priming condition, target affiliation, or feedback.

After reading the target's responses, participants in each condition were asked to complete the 10-item willingness-to-interact scale described in Study 2. The alpha coefficient for the 6 relevant items was .92, indicating high internal consistency. We therefore computed a total score by averaging the 6 items. At the end of the experiment, participants were debriefed. Participants in the failure condition were told that the experimenter randomly selected the feedback and that the problem was actually unsolvable.

Results and Discussion

We conducted a three-way ANOVA for priming (secure base, neutral), feedback (failure, no), and target affiliation (in-group, out-group) on the willingness-to-interact score. This analysis yielded the expected significant main effect for target affiliation, $F(1, 112) = 17.16, p < .01, \eta^2 = .11$, with participants reporting greater willingness to interact with the in-group target than with the out-group target ($M = 4.35$ vs. $M = 3.72$). As predicted, however, this effect was qualified by a significant interaction between priming and target affiliation, $F(1, 112) = 14.84, p < .01, \eta^2 = .10$, as well as a significant three-way interaction, $F(1, 112) = 3.86, p < .05, \eta^2 = .03$.

Simple main effect tests examining the interaction between priming and target affiliation replicated findings of Studies 1 and 2. Specifically, these analyses showed that the higher willingness to interact with the in-group than with the out-group target was significant only in the neutral priming condition, $F(1, 112) = 30.51, p < .01$, but not in the secure base priming condition, $F < 1$ (see means in Table 4). In the latter condition, no notable difference was found in the willingness to interact with the in-group and out-group targets.

Simple main effect tests examining the three-way interaction revealed the following pattern of differences. In the neutral priming condition, the analyses for Feedback $\times$ Target Affiliation replicated Fein and Spence's (1997) findings. In this condition, participants in the failure feedback condition reported less willingness to interact with the out-group target than did participants in the no feedback condition, $F(1, 112) = 5.37, p < .05$ (see Table 4). This difference was not significant with regard to the in-group target. That is, with neutral priming, failure feedback exacerbated the negative reactions to an out-group target but not to an in-group target.

Table 4

Means and Standard Deviations of Willingness to Interact According to Priming, Feedback, and Target Affiliation (Study 4)

Target	Secure base priming		Neutral priming	
	Failure	No feedback	Failure	No feedback
In-group target				
M	4.60ₐ	4.21ₐ	4.54ₐ	4.07ₐ
SD	0.93	0.74	0.86	0.74
Out-group target				
M	4.56ₐ	4.14ₐ	2.73c	3.43b
SD	0.94	0.79	0.85	0.80

Note. Means with different subscripts within rows are significantly different at $\alpha = .01$. Higher scores indicate more willingness to interact with the target.

In contrast, in the secure base priming condition, simple main effects tests revealed no significant difference in willingness to interact with the in-group target or with the out-group target in either the failure or the no feedback condition (see Table 4). Moreover, in the secure base priming condition, the effects of failure on willingness to interact with either the out-group target or the in-group target were not significant (see Table 4). That is, priming the secure base schema attenuated negative reactions to out-group targets and reduced the effect of failure.

Additional simple main effect tests revealed that secure base priming led to greater willingness to interact with the out-group target compared with neutral priming in both the failure feedback condition, $F(1, 112) = 31.40$, $p < .01$, and the no feedback condition, $F(1, 112) = 5.94$, $p < .01$ (see Table 4). No significant priming effect was found on reactions to the in-group target in either the failure or the no feedback condition (see Table 4).

With regard to mood as a possible mediator, a three-way ANOVA conducted on the mood score revealed significant main effects for priming condition, $F(1, 112) = 7.66$, $p < .01$, $\eta^2 = .06$, and feedback condition, $F(1, 112) = 28.86$, $p < .01$, $\eta^2 = .19$. No other effects were significant. Secure base priming led to a more positive mood ($M = 3.66$) than did neutral priming ($M = 3.24$), and failure feedback led to a less positive mood ($M = 3.04$) than did no feedback ($M = 3.86$). However, Pearson correlations revealed no significant association between reported mood and willingness to interact with out-group or in-group targets ($rs = .05$ and .01, respectively). Moreover, an ANCOVA examining the effects of priming, feedback, and target affiliation on willingness to interact, with mood included as a covariate, replicated the original significant interaction between priming and target affiliation, $F(1, 111) = 14.65$, $p < .01$, $\eta^2 = .10$, as well as the significant three-way interaction, $F(1, 111) = 3.95$, $p < .05$, $\eta^2 = .03$. The reported simple main effects and mean differences tests also remained significant after partialing out mood. Therefore, mood cannot explain the effects of secure base priming on reactions to out-group targets.

Overall, the results were in line with predictions. Under a neutral priming condition, the findings replicated Fein and Spencer's (1997) results and supported the hypothesis that out-group rejection may serve a self-protective function. The findings also showed that secure base priming eliminated the effects of self-esteem threat and made participants more willing to interact with an out-group target regardless of the task feedback they received. That is, secure base priming seemed to attenuate negative reactions to out-group members even under a self-esteem threat.

It is important to note that there were some procedure differences in the presentation of the task between failure and no-feedback conditions, which might have affected participants' level of involvement, evaluation apprehension, or cognitive effort. This problem is compounded by the fact that we did not check for the effectiveness of failure feedback as a self-esteem threat, which means that the psychological processes affected by the procedural differences may explain the findings. It should be noted, however, that failure feedback has long served as a means to threaten self-esteem, and there is robust evidence that the concrete feedback induction used in Study 4 indeed threatens self-esteem (see Mikulincer, 1994, for an extensive review).

Study 5

Study 5 also examines the effects of secure base priming on negative reactions to out-group targets under contextual conditions that favor these reactions. Specifically, Study 5 examines these effects when the out-group target actually threatened an important aspect of participants' collective identity or worldview (i.e., their national identity). According to Stephan and Stephan (1985), negative reactions to out-groups act as a defense against symbolic threats to a person's collective identity and worldview. Therefore, these reactions may be exacerbated by actual threats to worldviews. In our terms, secure base priming should attenuate negative reactions to out-group targets even when they threaten participants' worldviews. This hypothesis is based on previous findings showing that a sense of secure base serves as a cognitive–affective shield that reduces threat appraisal and the activation of attack-avoidance defenses (Mikulincer & Florian, 1998). In the present context, secure base priming should shield a person against threats to his or her worldview and therefore reduce the need to attack out-group members.

To examine this hypothesis, we exposed Israeli Jewish students to either secure base priming or neutral priming conditions. In Study 5, we used the guided imagination task described in Study 2, after which all participants read an essay about Israel supposedly written by a same-sex student and rated this student on a series of positive and negative traits. In the essays they were assigned to read, half of the participants received information that the writer was an Israeli Jewish student (in-group), the other half that the writer was an Israeli Arab student (out-group). Moreover, in each writer condition, half of the participants received an essay that presented a negative view of Israeli society and culture (anti-Israeli essay), and the other half received a more neutrally toned essay (neutral essay). Thus, Study 5 was a 2 × 2 × 2 between-subjects factorial design with the factors being priming (secure base, neutral), target affiliation (in-group, out-group), and type of essay (anti-Israeli, neutral).

We predicted a significant interaction between priming, target affiliation, and essay type. In the neutral priming condition, participants were expected to rate an out-group target more negatively if the target wrote an anti-Israeli essay than if he or she wrote a neutral essay. In the secure base priming condition, this effect of essay type would be diminished. Moreover, secure base priming would lead to a more positive evaluation of the out-group target than would neutral priming, regardless of the type of essay.

Method

Participants. One-hundred twenty Israeli Jewish students from Bar-Ilan University (77 women and 43 men ranging in age from 19 to 34, *Mdn* = 23) volunteered to participate in the study without monetary reward. Participants were randomly divided into eight conditions according to a 2 × 2 × 2 between-subjects design, with 15 participants in each condition.

Materials and procedure. Participants were run individually. The general instructions, the guided imagination task, the two priming conditions (secure base priming, neutral priming), and the assessment of current mood were identical to those described in Study 2. The alpha coefficient for the six mood items was adequate (.75). Immediately following the mood assessment, participants were told that the next part of the study was a survey of attitudes toward Israel. They were also told that they would

receive a randomly selected essay written by a student attending the university (14 sentences). Participants then read a copy of a handwritten essay and were asked to complete an evaluation form about the essay.

Participants were randomly divided into four conditions according to target affiliation (in-group, out-group) and the attitude toward Israel expressed in the essay (positive, neutral). For the target affiliation manipulation, the name of the writer (of the same gender as the participant) together with details about his or her major were presented at the top of the essay. Half of the participants read an essay that was supposedly written by a student with a typical Israeli Jewish first and last name (in-group condition). The other half of the participants read an essay that was supposedly written by a student with a typical Israeli Arab first and last name (out-group condition). Within each target affiliation condition, half of the participants received an anti-Israeli essay, and the other half a neutral essay. In the anti-Israeli essay, 11 statements were highly critical of Israel, focusing on economic and ethnic inequities, fundamentalism, militarism, and lack of sympathy for foreigners. The essay also included 3 positive statements about Israel. In the neutral essay, 7 of the sentences expressed a positive attitude toward Israel, and 7 sentences expressed a negative attitude. The sentences were presented in random order.

The evaluation form consisted of 10 items that were rated on a 7-point scale ranging from *not at all* (1) to *very much* (7). Participants rated the applicability of 5 positive traits (*honest, likable, intelligent, tolerant, reliable*) and 5 negative traits (*arrogant, insensitive, argumentative, rigid, snobbish*) to the writer of the essay. The traits were presented in random order. The alpha coefficient indicated adequate internal consistency for the 10 items after we reversed the response scales of negative traits (.88). Hence, we computed a total evaluation score for each participant by averaging the 10 items. Higher scores reflected a more positive evaluation of the writer.

Results and Discussion

We conducted a three-way ANOVA for priming condition (secure base, neutral), target affiliation (in-group, out-group), and essay type (anti-Israeli, neutral) on writer evaluation. This ANOVA yielded significant main effects for target affiliation, $F(1, 112) = 5.35, p < .05, \eta^2 = .04$, and essay type, $F(1, 112) = 6.49, p < .05, \eta^2 = .05$. Participants reported a more positive evaluation of the in-group writer than of the out-group writer ($M = 4.99$ vs. $M = 4.64$). They also reported a more positive evaluation of the neutral writer ($M = 5.01$) than of the anti-Israeli writer ($M = 4.62$). The ANOVA also yielded significant two-way interactions for priming and target affiliation, $F(1, 112) = 5.64, p < .05, \eta^2 = .04$, and for priming and essay type, $F(1, 112) = 7.97, p < .01, \eta^2 = .06$. It is important to note that the predicted three-way interaction was not significant.

Simple main effect tests examining the source of the Priming × Target Affiliation interaction replicated the findings of Studies 1 through 4. Whereas participants in the neutral priming condition evaluated the in-group writer more favorably than the out-group writer, $F(1, 112) = 10.63, p < .01$, participants in the secure base priming condition did not show any significant difference in the evaluation of the two kinds of writers (see means in Table 5). These tests also revealed that secure base priming led to a more positive evaluation of the out-group writer than did neutral priming, $F(1, 112) = 14.39, p < .01$ (see Table 5). There was no significant priming effect on the evaluation of the in-group writer.

Simple main effect tests examining the source of the Priming × Essay Type interaction revealed that the more favorable evaluation of the neutral than of the anti-Israeli writer was significant only in the neutral priming condition, $F(1, 112) = 10.63, p < .01$ (see

Table 5

Means and Standard Deviations of Evaluative Reactions According to Priming, Essay Type, and Target Affiliation (Study 5)

Target	Secure base priming		Neutral priming	
	Anti-Israeli	Neutral	Anti-Israeli	Neutral
In-group target				
M	5.06$_a$	5.08$_a$	4.53$_b$	5.25$_a$
SD	0.67	0.72	0.97	0.60
Out-group target				
M	5.13$_a$	5.04$_a$	3.75$_c$	4.63$_b$
SD	0.92	0.86	0.88	0.84

Note. Means with different subscripts within rows are significantly different at $\alpha = .01$. Higher scores indicate more positive evaluations.

Table 5). In the secure base priming condition, no significant effect of essay type was found. These tests also indicated that secure base priming led to a more positive evaluation of the anti-Israeli writer than did neutral priming, $F(1, 112) = 16.48, p < .01$ (see Table 5). No significant priming effect was found on the evaluation of the neutral writer.

With regard to the possible role of mood as a mediator, a three-way ANOVA revealed a significant main effect of priming on the mood score, $F(1, 112) = 11.02, p < .01, \eta^2 = .09$, with secure base priming leading to a more positive mood ($M = 4.49$) than did neutral priming ($M = 3.82$). No other effects were statistically significant. However, reported mood was not significantly associated with writer evaluation (.06). Moreover, ANCOVAs testing the effects of priming, target affiliation, and essay type on writer evaluation, with mood as a covariate, still revealed the significant interactions for Priming × Target Affiliation, $F(1, 111) = 6.06, p < .05, \eta^2 = .04$, and Priming × Essay Type, $F(1, 111) = 8.83, p < .01, \eta^2 = .06$. The reported simple main effects and mean differences tests also remained significant after partialing out mood. That is, once again mood could not explain the effects of secure base priming on reactions to out-group targets.

Although the predicted three-way interaction was not significant, two significant two-way interactions emerged, implying that secure base priming attenuated derogating reactions to out-group members or to targets that threatened the participants' worldview. That is, secure base priming weakened the effects of either target affiliation or worldview threat. Beyond the effects of secure base priming, it is important to note that an in-group member who criticized the participant's country was evaluated just as negatively as was a neutral out-grouper, suggesting that worldview threat was a critical feature of these negative reactions.

The results of Study 5 imply that secure base priming reduces negative responses to people who threaten cultural worldviews, even if they are in-group members. Therefore, one may wonder whether the observed effects of secure base priming on out-group evaluation is unique to out-groups or would occur with regard to any target that threatens a person's identity. It is lamentable that our studies cannot provide a definitive answer to this question because they mainly focus on the effects of secure base priming on out-group evaluation. Only the findings of Study 5 extend these

effects to worldview threats, suggesting a more global effect of secure base priming. Further studies should explore this issue and examine the effects of secure base priming on the evaluation of threatening or negative others beyond simple in-group/out-group distinctions.

General Discussion

Overall, the findings of these five studies contribute to the ongoing integration of the interpersonal relations area and the intergroup relations area while emphasizing the relevance of attachment theory for explaining reactions to out-groups. Our findings indicate that the contextual activation of the sense of a secure base attenuates negative reactions to out-group targets as well as negative reactions to people who express negative or critical opinions about certain aspects of a person's worldview (e.g., national identity). Having a sense of being loved and surrounded by supporting others seems to allow people to open themselves to alternative worldviews and be more accepting of people who do not belong to their own group.

It is important to note that in all five studies, secure base priming virtually eliminated any differential evaluation of in-group and out-group targets. This result was replicated using different priming procedures and different out-groups. Moreover, it was obtained by combining the results of the five studies through meta-analytic procedures (Rosenthal, 1984). Whereas the comparison between in-group and out-group evaluations in neutral conditions yielded a relatively large effect size (Cohen's $d = 1.34$, 95% confidence interval from 0.93 to 1.89), the same comparison in secure base priming conditions revealed that the size of this effect was around zero (Cohen's $d = 0.06$, 95% confidence interval from -0.07 to 0.11).

It is important to note that the findings cannot be attributed to mood variations produced by priming the secure base schema. First, the priming of positive affect, as compared with neutral priming, failed to attenuate negative reactions to out-groups. Second, although priming the secure base schema sometimes led to mood improvement, this affective variation failed to explain the effects of the priming procedure on reactions to out-group members. As a whole, the replicability of the findings across priming techniques and out-groups as well as the rejection of an alternative mood explanation greatly strengthens the internal validity of the observed association between the secure base schema and reactions to out-groups. The effect under study is quite real and robust.

The findings of Studies 1 and 2 indicate that a person's chronic sense of security also contributes to reactions to out-groups. Although attachment avoidance was not significantly related to these reactions, the higher the attachment anxiety, the more negative were the reactions toward out-group members. That is, people who did not chronically worry about the availability and supportiveness of significant others in times of need (those who were low on anxiety) showed attenuated negative reactions to out-group members. This finding parallels the effects of secure base priming on reactions to out-groups.

The question, then, is why just attachment anxiety was related to out-group derogation. Smith et al.'s (1999) conceptualization of attachment anxiety in terms of prevention motivation (Higgins, 1998) may provide a tentative answer to this question. Prevention motivation involves concern with security needs, fear of negative

outcomes, a hypervigilant stance aimed at preventing these outcomes, and agitation-related feelings (anxiety, tension) following negative outcomes (e.g., Crowe & Higgins, 1997; Higgins, Shah, & Friedman, 1997). Moreover, prevention motivation was found to induce strong negative reactions in response to the threats induced by stereotype disconfirmation (Forster, Higgins, & Strack, 2000). According to Smith et al. (1999), this motivation seems to be characteristic of people scoring high on attachment anxiety because they are chronically concerned with negative outcomes that may come from close relationships (e.g., rejection, disapproval) and therefore adopt a hypervigilant attitude to prevent these outcomes. Therefore, the threat implied by the encounter with an out-group member should elicit distress and activate intergroup defenses mainly among persons scoring high in attachment anxiety, because they are already focused on preventing such threats.

Attachment avoidance may be less relevant for explaining reactions to out-groups, because this dimension seems to correspond to Higgins' (1998) promotion motivation, which has to do with the attainment of positive outcomes rather than with the prevention of negative outcomes (Smith et al., 1999). Moreover, persons scoring high on this dimension tend to distance themselves from sources of distress rather than adopting a hypervigilant attitude toward threats (Fraley, Garner, & Shaver, 2000; Fraley & Shaver, 1997). Further studies should examine the association between attachment dimensions, motivational orientations, and intergroup biases.

Studies 1 and 2 also indicate that the effects of secure base priming on reactions to out-groups did not significantly depend on a participant's attachment style. In other words, contextual activation of the secure base schema attenuated negative reactions to out-groups without regard to attachment style, suggesting that the effect is quite general, perhaps because it affects a universal aspect of the attachment-behavioral system. This finding implies that a situational, temporary activation of the secure base schema leads even chronically insecure persons to react to out-groups in a more accepting and tolerant manner. The generality of this effect might make it useful in clinical or educational settings, where increased openness is sought. To date, no one knows whether repeated applications of secure base priming lead to a lasting change in attachment security, but this is a topic well worth exploring.

The cognitive processes set in motion by secure base priming may explain the independence of the observed effects of secure base priming and attachment anxiety. Take, for example, the activation of a particular memory of attachment security (e.g., asking a person to think about a relational episode in which he or she felt secure). This memory may remind the person of similar episodic memories, inhibit incongruent memories of attachment insecurity, bring to mind relationship-specific and generic schemas that are congruent with the sense of a secure base, and inhibit incongruent relationship-specific and generic orientations of attachment anxiety and avoidance. In this way, the contextual activation of a particular memory may spread over the entire semantic memory network, which may become temporarily dominated by a sense of security. As a result, a person's responses would be temporarily biased in accordance with the activated memory even if this memory is inconsistent with his or her chronic attachment orientation. This reasoning can also be applied for persons who are already secure chronically. The activated memory of attachment security would contextually compound their chronic accessibility of the sense of secure base. It is important to note, however, that

our findings suggest that the temporary effects of activating the secure base schema coexist with the effects of chronic attachment anxiety. That is, a person's responses to out-groups can be concurrently affected in opposite directions by priming the secure base schema, on the one hand, and by chronically accessible memories and schemas related to attachment anxiety, on the other.

While attempting to explain the observed effects of secure base priming, we should mention some alternative mechanisms that may underlie these effects. Borrowing Bartholomew and Horowitz's (1991) terminology, we note that secure base priming might have activated positive models of others, which in turn might have affectively colored reactions toward out-groups. In fact, secure attachment has been found to be related to positive perceptions of relationship partners (e.g., Collins, 1996; Hazan & Shaver, 1987). However, this mechanism cannot explain the entire pattern of results. First, the effects of secure base priming were restricted to out-group members or people whose opinions threatened participants' worldviews. Secure base priming had no effect on reactions to in-group members. Thus, the attenuated negative reaction to out-group members following secure base priming seems to reflect increased tolerance toward these persons rather than a nonspecific change in the model of other people. Second, the dimension of attachment avoidance, which differentiates people who have positive versus negative models of others (Bartholomew & Horowitz, 1991), was irrelevant for explaining reactions to out-groups. Similar reactions to out-groups were found in persons scoring high or low in avoidance, regardless of corresponding variations in what Bartholomew and Horowitz (1991) called the model of others.

Thinking along these lines, one may wonder why secure base priming did not significantly affect reactions to in-group members given that secure attachment is generally associated with a positive model of others (Collins & Read, 1994) as well as with a generally positive social orientation (Shaver & Hazan, 1993). It is possible that Bartholomew and Horowitz's (1991) model of others, which refers to representations of close relationship partners, is not relevant to reactions to in-group members who are not viewed as potential close relationship partners. Accordingly, the main interaction goal of securely attached persons—the attainment of closeness and intimacy (Shaver & Hazan, 1993)—may be irrelevant to responses to an unfamiliar member of a large in-group. Reasoning along these lines, we can speculate that the inclusion of relationship partners among the targeted in-group members or the inclusion of more intimate interactions with target persons would allow us to observe positive effects of secure base priming on responses to in-group members. Another factor that may have affected the results is that in all of the studies, participants were from a Western cultural setting and the in-group targets were Israeli Jews. Future studies should attempt to replicate our findings in other cultural contexts using different in-group targets.

The attenuating effect of secure base priming on reactions to out-group members might also be explained in part by Bartholomew and Horowitz's (1991) model-of-self construct. Specifically, secure base priming might have activated more positive self-representations, which in turn might have encouraged more positive reactions toward out-groups. In fact, a core component of the sense of secure base is the representation of the self as worthy and competent to deal with threatening events (Bartholomew & Horowitz, 1991). Moreover, secure attachment has been associated with higher expectations of self-efficacy in coping with stress

(Mikulincer & Florian, 1998). In the studies reported here, these positive models of self may have heightened self-confidence about dealing effectively with the threats implied by the encounter with an out-group member, reducing the appraisal of out-group members as a source of anxiety and attenuating out-group derogation and rejection. This explanation is supported by the finding that attachment anxiety, which differentiates persons who have negative versus positive models of self (Bartholomew & Horowitz, 1991), was significantly associated with reactions to out-group members. Studies 1 and 2 clearly indicate that persons scoring low in attachment anxiety, who have been found to hold high expectations of self-efficacy (Mikulincer & Florian, 1998), had less negative reactions to out-group targets than did persons scoring high on this attachment dimension.

This explanation is further supported by the findings of Study 3, which indicate that threat appraisal mediates the effects of secure base priming on reactions to out-groups. Secure base priming reduced the appraisal of an out-group as a source of realistic and symbolic threats, and the attenuated threat appraisal was related to less negative reactions to the targeted out-group. In fact, statistical control of threat appraisal notably weakened the link between secure base priming and reactions to out-groups. It is possible, therefore, that the activation of positive models of self produced by secure base priming was directly manifested in a more positive appraisal of out-groups and the consequent attenuation of out-group derogation. This is, of course, a post hoc explanation; no data were collected concerning beliefs about self-efficacy in dealing with out-groups. Future studies should examine in greater depth the association between self-efficacy expectations and the appraisal of out-groups as a source of threat.

The findings of Studies 4 and 5 also seem indirectly to support the underlying contribution of positive models of self to reactions toward out-groups. These studies suggest that secure base priming provides a cognitive–affective shield against potential threats, thus making the activation of out-group derogation unnecessary. Specifically, secure base priming attenuates negative reactions to out-groups even when people experience threats to self-esteem or worldview, which usually favor these negative responses. Moreover, secure base priming weakens the effects of these contextual threats on out-group derogation. It is possible that having the sense of a secure base heightens a person's confidence in his or her coping skills for dealing with threats to self-esteem or worldview, which in turn reduces the need to defensively derogate or reject members of out-groups.

Following the above line of interpretation, one might be tempted to argue that our results can be explained by fluctuations in global self-esteem rather than by the activation of models of self related to the sense of having a secure base. Although we cannot completely discount this possibility given that no data were collected on self-esteem, previous findings seem to favor its rejection. First, despite a positive association between self-esteem and secure attachment, Mikulincer and Florian (2000) found that variations in self-esteem did not account for the effects of secure attachment on defensive reactions to existential threats. Second, Crocker and Luhtanen (1990) and Hogg and Abrams (1990) have found that self-esteem is associated with more, not less, negative reactions to out-groups—a direct manifestation of a motive on the part of individuals with high self-esteem to maintain and enhance self-worth. In contrast, securely attached persons do not seem to be

motivated to maintain self-esteem by distorting self-views or perceptions of others under stressful contexts (e.g., Mikulincer, 1998; Mikulincer et al., 1998). Rather, they tend to seek the support of significant others who seem to function as pillars of their positive models of self.

We make no claim that secure base priming reduces psychological defenses in general or causes people to be less defensive per se. Rather, secure base priming may allow or encourage people to activate coping devices other than intergroup defenses. It is lamentable that although the studies reported here support the idea that secure base priming renders reliance on intergroup defenses less necessary, they do not reveal the alternative coping paths opened up by secure base priming. This is another important topic for future research. Activation of the secure base schema may not only reduce out-group derogation but also cause people to seek proximity to and support from others. This coping response is the primary affect-regulation strategy of the attachment system and a core component of the secure base script (Bowlby, 1988; Mikulincer & Florian, 1998). Further research should explore these alternative defenses and their associations with intergroup biases.

The possible association between secure base priming and models of self might result in a change in motivational orientation. Specifically, the contextual activation of the sense of a secure base might deactivate prevention motivation (Higgins, 1998), which deals with security needs and the avoidance of negative outcomes, and, hence, attenuate negative reactions to the threats implied by out-groups. This speculative reasoning is supported by findings showing that the activation of prevention motivation leads to increases in stereotyping and prejudice (Forster et al., 2000). It also fits with Smith et al.'s (1999) proposal that anxiously attached individuals' negative models of self correspond to prevention motivation. It seems that an overall conceptual picture is emerging of the ways security-oriented (prevention) motivation, if activated by threat, leads to out-group derogation and the ways the sense of a secure base can help to weaken or deactivate this motivation and eliminate the negative effects of threat.

The emerging conceptualization is consistent with the view of intergroup bias as a defensive reaction (Tajfel & Turner, 1986). However, there is more to intergroup bias than defensive reactions. For example, one may claim that secure base priming increases the accessibility of kindness and compassion or values otherwise inconsistent with derogating others, which may attenuate negative reactions to out-groups without increasing the favorability of in-group evaluations. Although this is also a post hoc explanation and no data were collected on feelings of compassion toward out-group members, it fits Bowlby's (1973) claim that the sense of a secure base promotes caregiving and a genuine concern for others' wellbeing. (See also Kunce & Shaver, 1994, concerning caregiving in adult couple relationships.) This explanation also fits with the positive association observed between secure attachment style and a compassionate attitude toward others' suffering (Florian, Mikulincer, & Hirschberger, 2000). This compassionate attitude may be relevant in our studies, because all of the targeted out-groups were relatively low-status minorities. Further research should examine this explanation while using majority, high-status out-groups.

In a related vein, the contextual activation of the sense of a secure base may increase the accessibility of a social norm of supportive, friendly, and caring interactions with others, which in turn may lead to more positive reactions to out-group members.

There is considerable research on the effects of social norms on intergroup attitudes (see Mackie & Smith, 1998, for a review). Accordingly, the sense of a secure base seems to promote a more prosocial orientation (Shaver & Hazan, 1993). Future research should examine the effects of secure base priming on a person's values as well as on subtle measures of prejudice that might be less affected by social norms.

Yet another possibility is that secure base priming enhances motivation to explore, opening cognitive structures and reducing negative reactions to out-group members or to persons who hold a different worldview. The observed effects of secure base priming may reflect cognitive openness and a reduction in dogmatism and authoritarianism. Despite the post hoc nature of this explanation, it follows from Bowlby's (1988) claim that the sense of a secure base promotes exploration and risk-taking. Moreover, it fits with the documented positive association between the sense of a secure base and cognitive openness (Mikulincer & Arad, 1999).

An integration of the above-mentioned alternative mechanisms of secure base priming reveals that they correspond to Mackie and Smith's (1998) three fundamental motivational principles of social behavior—the desire to maintain and enhance a positive view of the self, the motive for connectedness, and the desire for mastery and understanding of the world. First, the sense of having a secure base may promote a positive view of the self and therefore reduce prevention-oriented needs. Second, it may promote prosocial feelings and values, thereby heightening the motive for connectedness to others. Third, it may facilitate exploration, thereby strengthening the desire for mastery and understanding of the world. It is possible that this particular motivational constellation may underlie the attenuation of negative reactions to out-groups produced by the sense of having a secure base.

Given the important role that the sense of having a secure base plays in both close relationships and intergroup relations, it could contribute to the understanding of the effects of cross-group friendship on reactions to out-groups. Pettigrew (1997) showed that individuals who had out-group friends had lower levels of prejudice toward a variety of out-groups than did those who did not. Furthermore, Wright et al. (1997) reported that both participants who formed cross-group friendships and participants who were aware that other in-group members had such friendships showed a dramatic decrease in intergroup hostility. It is possible that the formation of cross-group friendships may activate representations of attachment security, which, in turn, may reduce prevention-oriented needs, strengthen prosocial and exploration motives, and, hence, attenuate negative reactions to out-groups. Further research should examine the attachment-related implications of the formation of cross-group relationships and the role that the sense of having a secure base may play in explaining the beneficial effect of intergroup contact on intergroup relations.

Our findings have important implications for understanding the psychological meaning and functions of the sense of a secure base. At first, one may be tempted to interpret the findings as suggesting that the sense of a secure base inhibits in-group identification and encourages an individualistic ideology. But this simplistic view contradicts Bowlby's (1988) concept of the secure base as promoting warm and friendly relationships and genuine concern for others. Moreover, this view is based on the faulty assumption that lack of out-group hatred implies lack of in-group love. In fact, Brewer (1999) recently broke the equation between in-group love

and out-group hatred and concluded that attachment to one's in-group does not necessarily imply hostility toward out-groups. Hence, the fact that secure base priming attenuated negative reactions to out-groups does not necessarily imply a lack of identification with the in-group. One agenda for future research is to examine the psychological mechanisms that allow secure individuals to maintain in-group identifications without necessarily harboring out-group hostility.

Beyond documenting the effects of secure base priming, the current studies reveal no significant effects of positive affect on reactions to out-groups. This lack of effect is somewhat surprising, because previous studies have found some effect of mood on intergroup bias (Abele, Gendolla, & Petzold, 1998; Dovidio et al., 1995; Forgas & Fiedler, 1996). This inconsistency may be explained as follows. First, whereas the out-groups in most previous studies had low relevance for participants' identity, the out-groups in our studies had high personal and collective relevance. Second, some of the manipulations of positive affect in previous studies may have incidentally activated secure base representations. Both the experimenter's gift in Dovidio et al.'s (1995) study and the retrieval of happy memories in Forgas and Fiedler's (1996) study may have reactivated memories of loving and supportive others. In our studies, we attempted to eliminate this confusion by separately priming positive affect and the sense of a secure base. Future research should examine the effects of positive affect on intergroup biases while exploring the role that the sense of a secure base may play in explaining these effects.

Before ending this discussion, it is important to mention that our studies focused on only two kinds of reactions to out-groups. Whereas the dependent variable used in Studies 1, 3, and 5 is a general negative evaluation of the out-group—a prejudice measure unrelated to stereotypes of the out-group—the willingness to interact (Studies 2 and 4) is a behavioral intention measure. Further research should include other conceptually important dependent variables to obtain a fuller picture of the effects of secure base priming on intergroup relations. For example, researchers could assess discriminatory treatment of the out-group (Tajfel & Turner, 1986) and emotional reactions to out-groups (Mackie, Devos, & Smith, 2000).

In our studies, we conceptualized the sense of a secure base as involving individual-level relationships. However, one cannot ignore the possibility that the concrete manipulations used in the studies also involved group-level representations of secure attachment (Smith et al., 1999). For example, words like closeness, love, and support can be used to refer to people's ties to groups as well as to relationship partners. In future research, attempts should be made to separately manipulate feelings of individual versus group support and closeness to examine their separate effects. This enterprise would fill the gap between the individual-level constructs of attachment theory and the group-level constructs of intergroup relations.

Our findings do not imply that intergroup bias is exclusively determined by the sense of a secure base. In fact, other sociocultural and motivational factors may play a critical role in shaping reactions to out-groups. Another limitation of our studies is the exclusive focus on the secure base schema and the lack of information about the possible effects of insecure schemas. Future research should examine whether chronic or contextual accessibility of insecure schemas may exacerbate negative reactions to

out-groups. A third limitation is the use of laboratory settings and hypothetical targets. Our findings should be replicated in field studies that assess behavioral reactions to actual persons. Nevertheless, the current studies show convincingly that contextual activation of the secure base schema has unique and reliable effects on intergroup biases. The studies constitute an important step in demonstrating the utility of attachment theory for explaining group processes as well as in extending the theory to the study of broad social–cultural phenomena. These studies may even provide useful leads for parents, clinicians, and educators who wish to encourage kindness and tolerance by enhancing attachment security.

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