

# Desire under attack: Attachment orientations and the effects of relationship threat on sexual motivations

Journal of Social and  
Personal Relationships  
28(4) 448–468

© The Author(s) 2010

Reprints and permissions:

sagepub.co.uk/journalsPermissions.nav

DOI: 10.1177/0265407510381932

spr.sagepub.com



Gurit E. Birnbaum<sup>1</sup>, Yanna J. Weisberg<sup>2</sup>, and  
Jeffrey A. Simpson<sup>2</sup>

## Abstract

The authors examined the effects of relationship threat on sexual motivations. In two studies, participants imagined relationship or non-relationship threat scenes and then rated their desire to have sex (Study 1) and the reasons for doing so (Study 2). The results indicated that relationship threat prompted both enhancement and relationship-based motives, suggesting that people use sex to both feel better and repair the threatened relationship. Avoidantly attached individuals were least likely to desire their partner, implying that they use distancing strategies when confronted with relational threat. Anxiously attached individuals were least likely to be motivated by hedonistic reasons, possibly reflecting their difficulties in enjoying sex when flooded with relationship worries. Implications for understanding the functional meaning of sex in romantic relationships are discussed.

## Keywords

attachment, threat, romantic relationships, sexual desire, motivation

<sup>1</sup> Interdisciplinary Center (IDC) Herzliya, Israel

<sup>2</sup> University of Minnesota, Twin Cities Campus, USA

## Corresponding author:

Gurit E. Birnbaum, PhD, School of Psychology, Interdisciplinary Center (IDC) Herzliya, P.O. Box 167, Herzliya 46150, Israel

Email: birnbag@gmail.com

Relationship threats (e.g., insecurity regarding the love of one's partner, possible mate poaching, prospective separation) automatically activate the attachment system (Mikulincer, Gillath, & Shaver, 2002; Simpson & Rholes, 1994). When confronted with such threats, most people typically try to resolve the resulting insecurities by seeking greater proximity to their attachment figures (e.g., relationship partners), who may provide comfort and support (Bowlby, 1969/1982). Given that sex is one route for seeking proximity, relationship insecurities should also enhance sexual motivation. Indeed, recent survey studies have found that perceived relationship threat is associated with more frequent sexual fantasizing about one's partner and heightened interest in sex (Davis, Shaver, & Vernon, 2003, 2004). The elicitation of sexual motivations, however, should also depend on an individual's specific interpersonal goals, which underlie his or her attachment orientation. Supporting this view, studies by Davis et al. (2003, 2004) have revealed that attachment orientations moderate the relation between relationship threat and sexual motivation.

The correlational and retrospective nature of these initial survey studies, however, precludes conclusions about the possible causal connections between relationship insecurities and sexual motivation. Furthermore, sexual motivation involves varied components, including partner's perceived attractiveness, the desire to engage in sex, and the specific reasons for doing so. As such, questions still remain as to whether and how personal and interpersonal goals elicited by threat are uniquely reflected in specific motives for engaging in sex. For example, do perceived relational threats enhance relationship-based motives (e.g., promoting intimacy), or do they facilitate pursuing self-gratification? What differentiates individuals who use sex to pursue attachment-related goals (e.g., reassurance of the partner's love and availability) when experiencing relationship insecurity from those who pursue personal goals (e.g., self-enhancement)? To address these questions, we conducted two experimental studies that investigated how relationship threat impacts the desire to have sex and the specific motivations for doing so. We also examined whether individual differences in attachment orientations moderated these effects.

### *Attachment and relationship threat*

Bowlby's (1969/1982, 1973) attachment theory has proven useful for understanding both normative and individual difference components of reactions to relationship threats. According to Bowlby, the attachment behavioral system evolved because it increased the chances of survival and future reproductive success through maintaining close proximity to significant others. Whenever the relationship with an attachment figure is threatened, the attachment system is automatically activated, and individuals become motivated to seek and reestablish actual or symbolic proximity to their external (present) or internalized (imagined) attachment figures. Adult attachment research has supported Bowlby's major hypotheses about the normative activation of the attachment system by showing that perceived relationship threats heighten proximity-seeking behaviors (Fraley & Shaver, 1998) or thoughts about achieving proximity to attachment figures when physical proximity is not possible (Mikulincer, Birnbaum, Woddis, & Nachmias, 2000; Mikulincer et al., 2002).

Although the attachment system is normatively activated during times of relationship distress (Simpson & Rholes, 1994), reactions to relationship-threatening events may also be affected by the quality of interactions with attachment figures, particularly during times of need. Optimal functioning of the attachment system depends on interacting with available and responsive attachment figures. Positive interactions usually promote a sense of attachment security that encourages individuals to effectively use proximity seeking as a distress-regulation strategy when faced with threats (Mikulincer & Shaver, 2003, 2007). Recurrent failures to attain the primary goal of “felt security” result in one of two alternative strategies: hyperactivation or deactivation (Cassidy & Kobak, 1988; Mikulincer & Shaver, 2003, 2007). Hyperactivation strategies, which characterize highly anxious individuals, are intended to get an attachment figure, perceived as insufficiently available, to pay attention and provide relief from stress. Deactivation strategies, which characterize highly avoidant individuals, are intended to maintain and promote distance, self-reliance, and control in close relationships and, thus, are expressed as inhibited proximity-seeking behaviors in threatening situations (Main, 1990; Mikulincer & Shaver, 2003, 2007).

Growing empirical evidence has supported the view that these different interpersonal goals and strategies explain attachment-related variations in responses to relationship threats. In line with their tendency to trust others' goodwill (Simpson, 1990), securely attached individuals are more likely than insecure individuals to seek comfort and reassurance from significant others following attachment-relevant threats (Fraley & Shaver, 1998; Simpson, Rholes, & Nelligan, 1992). More avoidant individuals, in contrast, adopt distancing strategies to cope with attachment-related threats (e.g., suppression of threat-related thoughts, avoidance of support seeking; Fraley, Davis, & Shaver, 1998; Simpson et al., 1992), consistent with the goal of deactivating their attachment systems. These defensive strategies may help highly avoidant people keep attachment worries out of awareness (Fraley, Gardner, & Shaver, 2000; Mikulincer et al., 2000).

To fulfill their unmet needs for security and love, highly anxious individuals evince heightened accessibility to proximity themes and worries, regardless of the “objective” level of threat (Mikulincer et al., 2000, 2002). As a result, they attempt to minimize physical distance from their partners by employing a “coercive strategy” that includes a mix of angry demands, helplessness, clingy behavior, and flirtatious manipulations (Crittenden, 1997). Highly anxious individuals are therefore particularly likely to experience jealousy, and they express it by engaging in relationship-maintaining behaviors (e.g., doing special favors for their partners) and surveillance behaviors (Guerrero, 1998). Because highly anxious individuals rely heavily on sex to achieve their attachment goals (Birnbaum, 2010; Birnbaum, Reis, Mikulincer, Gillath, & Orpaz, 2006; Davis et al., 2004), they are particularly prone to experiencing frequent sexual fantasizing involving attachment-related themes when faced with relational threats (Birnbaum, Svitelman, Bar-Shalom, & Porat, 2008; Davis et al., 2003).

### *The present research*

As reviewed above, recent studies have indicated that one major manifestation of relationship threat is heightened sexual desire (Davis et al., 2003, 2004). These studies,

however, have focused on overall sexual motivation and have not examined whether or how relationship threats might affect the *specific* motives behind the desire to engage in sex. Sex may have a variety of meanings for different people in different contexts. Hence, people sometimes use sex strategically to serve various global goals captured by differences in approach versus avoidance motivation (e.g., having sex to express love versus having sex to avoid rejection) or self versus interpersonal focus (e.g., having sex to enhance pleasure versus having sex to achieve intimacy; Cooper, Shapiro, & Powers, 1998). These different sexual goals or needs, however, should be triggered by unique antecedents and distinguished by qualitatively different styles of behavioral and emotional experiences (Cooper et al., 2006). Indeed, past research has found that more avoidant people typically downplay sexual motives associated with the promotion of emotional closeness and emphasize relationship-irrelevant or extraneous sexual motivations (e.g., self-enhancement or impressing peers), whereas more anxiously attached people report engaging in sex for a variety of attachment-related reasons (e.g., promoting one's own sense of closeness, intimacy, and security; Cooper et al., 2006; Davis et al., 2004; Schachner & Shaver, 2004). These findings raise important questions concerning whether and how attachment-related strategies and goals are reflected in the *specific* reasons for having sex when individuals are confronted with relationship threat.

The present research tested how relationship threat affects the desire to have sex, the reasons (motives) for engaging in it, and the role of attachment orientations in moderating these effects. Specifically, we hypothesized that the manipulation of relationship threat would enhance attachment-relevant sexual motivations, given that having sex might provide reassurance of partner love and availability. Relationship threat, however, can not only endanger relationships, but it can also threaten one's self-image (Andersen & Chen, 2002; Berman & Frazier, 2005). Accordingly, we also hypothesized that the manipulation of relationship threat would elicit self-enhancement motives that encourage individuals to feel better about themselves. In addition, we predicted that the elicitation of specific sexual motives would depend on an individual's specific interpersonal goals, which underlie his or her attachment orientation. That is, threat would magnify highly anxious people's tendencies to have sex for a variety of attachment-related reasons, because they covet reassurance and reestablishing contact under relationship-threatening conditions (Mikulincer & Shaver, 2007). In contrast, threat would magnify highly avoidant people's tendencies to have sex for self-enhancing reasons, because they tend to discount their attachment needs, yearn to be self-reliant and, therefore, should be more threatened by potential personal losses rather than relational losses.

Two studies tested whether and how attachment-related strategies and goals are reflected in the desire to have sex and the specific reasons for doing so following relationship threat. In each study, participants imagined either relationship-threatening or non-relationship-threatening scenes and then rated their desire to have sex (Study 1) and the specific motives behind the desire to have sex (Study 2). The main and interactive effects of gender were examined in both studies. No predictions were made regarding the possible moderating role of gender, because even though attachment insecurities have sex-differentiated effects in the domain of sexuality (Birnbau, 2007b; Cooper et al., 2006), the attachment literature has revealed few interaction effects between gender and attachment orientations predicting reactions to threats.

## Study 1

In Study 1, we examined the effects of threats on perceived partner's sexual attractiveness, the desire to have sex, and the possible role of attachment orientations in moderating these effects. Participants thought of a committed relationship that they had had in the past or that they currently had, and then imagined a relationship threat (a partner considering a break-up), a non-relationship threat (failing an exam), or a non-threatening scene (a partner going to the grocery store). They then rated the sexual attractiveness of the partner in the scenario, their desire to have sex with him or her, and their desire to have sex with a stranger. We asked about sex with a current partner and a stranger to determine whether effects were not specific to close intimate partners. We hypothesized that the effect of relationship threat on sexual desire would be moderated by attachment orientation. Specifically, we predicted that relationship threat would decrease the desire to have sex with one's partner and increase the desire to have sex with a stranger among more avoidant individuals, given their tendency to distance themselves from their partners when faced with relationship threats (Mikulincer & Shaver, 2007). No predictions were made a priori about the moderating role of attachment-related anxiety, because one could reason that attachment-related anxiety could be associated with either enhanced or decreased sexual motivation following relationship threat. On the one hand, relationship threat may fuel the desire to have sex with one's partner among more anxiously attached individuals, whose propensity to use sex to serve attachment-related goals may be amplified under relationship-threatening conditions (Davis et al., 2003, 2004). On the other hand, more anxiously attached individuals are more likely than their less anxiously attached counterparts to conflate sex and other relationship qualities (e.g., affection, intimacy), such that sex-related feelings and cognitions are more likely to be transferred onto the broader functioning of romantic relationships and vice versa (e.g., Birnbaum et al., 2006). Accordingly, their negative reactions to relationship threat might spill over into the sexual domain.

## Method

**Participants.** One hundred and ninety-nine Israeli participants (99 women, 100 men), ranging from 19 to 33 years of age ( $M = 24.91$ ,  $SD = 2.42$ ), volunteered for the study without compensation. A research assistant recruited participants from universities and community centers in central Israel. All participants had experienced heterosexual intercourse, either in a current or past relationship. Approximately 77% of the participants were currently involved in a romantic relationship and 10.6% were married. Of the participants who were currently involved in a romantic relationship, length of relationship ranged from 1 to 204 months ( $M = 21.46$ ,  $SD = 22.96$ ). No significant differences were found between the experimental conditions for any of the socio-demographic variables.

**Measures and procedure.** Participants were approached individually by a research assistant and were asked whether they would take part in a study on personality and sexuality in close relationships. Participants were asked to complete a packet of questionnaires at their own pace (all questionnaires were in Hebrew). Following the

instructions, participants began the relationship visualization task, which was adapted from a procedure developed by Birnbaum et al. (2008). Specifically, they were randomly assigned to one of three visualization conditions: (a) a relationship threat scene in which they were asked to imagine that their romantic partner was considering breaking up with them; (b) a non-relationship threat scene in which participants were asked to imagine that they had just failed in an important exam (this condition was included to test whether sexual motivation is affected by global aversive feelings versus specific threats to the relationship); and (c) a non-threatening scene in which participants were asked to imagine that their partner was going to the grocery store. After imagining one of these three scenes, participants answered an open-ended probe: "Please describe this event in detail and the emotions and thoughts that it arouses in you". Answers to this question served as manipulation checks to ensure that each participant had the proper scene in mind before indicating his or her desire to have sex. Participants also rated the degree of both overall threat and relationship threat posed by the scene they imagined on a seven-point scale, ranging from "not at all" (1) to "very much" (7).

Following these procedures, participants were asked to think about how they felt right then, while having the proper scene in mind (e.g., being with a person they knew was thinking of breaking up with them), and to rate the sexual attractiveness of the partner in the scenario on five adjectives: sexually desirable, sensual, "hot", attractive, and sexually exciting (e.g., "To what extent do you think the partner in the scenario is attractive?"). These items were intermixed with five fillers (e.g., "To what extent do you think the partner in the scenario helps others in need?") to mask the nature of this questionnaire. Ratings were made on a five-point scale ranging from "not at all" (1) to "very much so" (5). The five items were internally consistent ( $\alpha = .92$ ) and were thus averaged to form a global sexual attractiveness index. Participants also rated their desire to have sex with the partner in the scenario ("To what extent would you be interested in having sex with the partner in the scenario?"), as well as their desire to have sex with a stranger ("To what extent would you be interested in having sex with a stranger?"), using the same five-point scale. These items were used in a similar manner by Birnbaum, Hirschberger, and Goldenberg (in press). Finally, participants were asked to provide demographic and relationship information, including age, current romantic relationship status, and length of current relationship.

Participants also completed the Experiences in Close Relationships Scale (ECR; Brennan, Clark, & Shaver, 1998), which assesses romantic attachment orientations. This self-report scale consists of 36 items tapping the dimensions of attachment anxiety and avoidance. Participants rated the extent to which each item was descriptive of their feelings in close relationships on a seven-point scale ranging from "strongly disagree" (1) to "strongly agree" (7). Eighteen items tapped attachment anxiety (e.g., "I worry about being abandoned"), and 18 items tapped attachment-related avoidance (e.g., "I get uncomfortable when a romantic partner wants to be very close"). The ECR was translated into Hebrew by Mikulincer and Florian (2000), who also validated its two-factor structure on an Israeli sample. In the current sample, Cronbach alphas were high for the 18 anxiety items (.90) and for the 18 avoidance items (.81). Higher scores indicated greater attachment-related avoidance or anxiety. Placement of the ECR was counterbalanced: half of the participants completed the ECR before reading the scenarios, and the

other half completed it afterward. Regression analyses indicated that the point at which participants completed the ECR during the study did not affect the findings. Accordingly, data from the two counterbalanced conditions were combined.

## Results and discussion

**Manipulation check.** A one-way analysis of variance (ANOVA) on the first manipulation check question, “Please rate the degree of threat posed by the scene you described”, yielded the expected effect of threat,  $F(2,196) = 48.29, p < .001, \eta^2 = .33$ . Both the relationship threat ( $M = 4.59, SD = 1.77$ ) and the non-relationship threat conditions ( $M = 4.56, SD = 1.92$ ) led to higher levels of perceived threat than did the no-threat condition ( $M = 1.97, SD = 1.49$ ). A one-way ANOVA on the second manipulation check question, “Please rate the extent to which your relationship would be threatened by the scene you described”, also yielded the expected effect of threat,  $F(2,196) = 56.63, p < .001, \eta^2 = .37$ . Relationship threat led to higher levels of perceived relational threat ( $M = 3.89, SD = 2.01$ ) than did both the non-relationship threat ( $M = 1.87, SD = 1.28$ ) and the no-threat conditions ( $M = 1.37, SD = .75$ ).

**Threat, attachment, and the desire to have sex.** The data were analyzed in a series of three-step hierarchical regressions testing the unique and interactive effects of threat conditions, attachment-related anxiety, attachment-related avoidance, and gender on partner’s perceived sexual attractiveness and the desire to have sex (with a stranger and with one’s partner). In the first step, we tested the main effects for threat conditions. In particular, we created two effects-coded variables – one contrasting the relationship threat condition to the no-threat condition and the other contrasting the non-relationship threat condition to the no-threat condition; gender – a contrast code variable comparing women (1) to men (–1); and the attachment scores of anxiety and avoidance (entered as standardized scores). The two-way interactions (e.g., relationship threat  $\times$  attachment, non-relationship threat  $\times$  attachment) were entered in the second step, and the three-way interactions (e.g., relational threat  $\times$  attachment  $\times$  gender, non-relational threat  $\times$  attachment  $\times$  gender) were added in the third step. Table 1 presents the standardized regression coefficients ( $\beta$ s) for each effect at the step in which it was entered into the regression equation. These analyses revealed no meaningful interactions between attachment-related avoidance and attachment-related anxiety; hence, they are not reported. Regression analyses also indicated that current relationship status did not significantly affect the results in this study. For simplicity, only the significant effects involving threat are described.

The main effect of non-relational threat significantly predicted the desire to have sex with one’s partner, with non-relational threat lessening the desire to have sex (see Table 1). The main effect of relational threat significantly predicted the perceived partner’s attractiveness. However, this effect was qualified by a significant relationship threat  $\times$  avoidance  $\times$  gender interaction for perceived partner’s attractiveness. Using Aiken and West’s (1991) procedure, we found that relationship threat decreased partner’s attractiveness when attachment-related avoidance was high (1 SD above the mean) among men,  $\beta = -.62, p < .001$ , but not among

**Table 1.** Beta coefficients for predicting perceived partner's sexual attractiveness and the desire to have sex from threat, attachment orientations, and gender (Study 1;  $N = 199$ ).

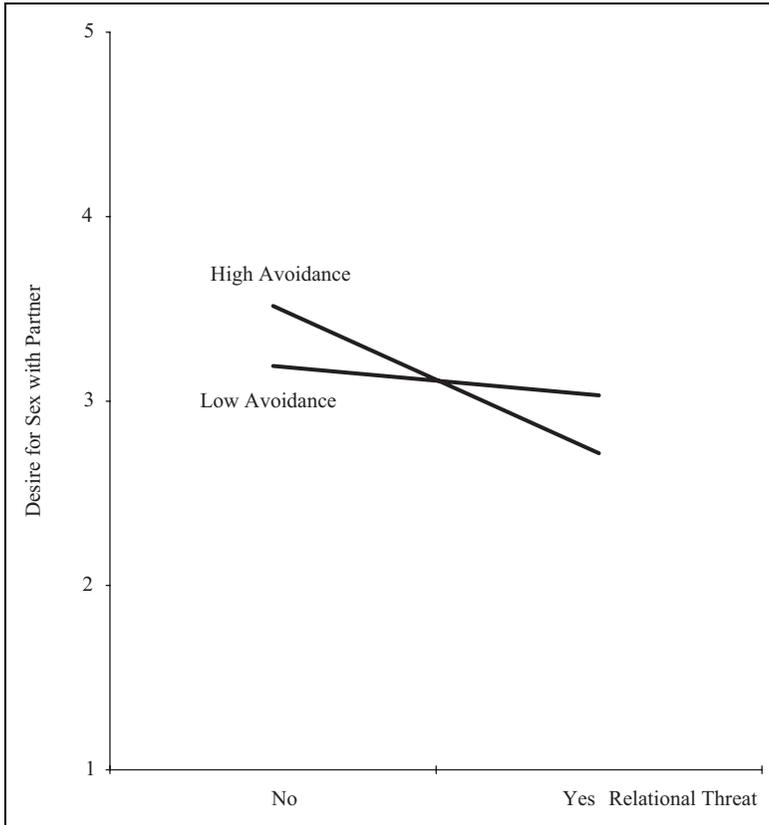
|  | Desire for sex  |                    |                                    |
|--|-----------------|--------------------|------------------------------------|
|  | With a stranger | With one's partner | Partner's perceived attractiveness |
| <i>Step 1:</i>   |                 |                    |                                    |
| Relational threat                                      | -.01            | -.13               | -.29***                            |
| Non-relational threat                                  | -.06            | -.22**             | .14                                |
| Anxiety  | .24***          | .07                | .04                                |
| Avoidance  | -.04            | -.04               | -.06                               |
| Gender <sup>a</sup>                                    | -.51***         | -.38***            | -.03                               |
| <i>Step 2:</i>   |                 |                    |                                    |
| Relational threat $\times$ anxiety                     | -.25***         | .02                | -.14                               |
| Relational threat $\times$ avoidance                   | .04             | -.17*              | -.12                               |
| Relational threat $\times$ gender                      | .01             | .09                | .09                                |
| Non-relational threat $\times$ anxiety                 | -.02            | -.05               | .11                                |
| Non-relational threat $\times$ avoidance               | .01             | .02                | .07                                |
| Non-relational threat $\times$ gender                  | .04             | -.01               | .06                                |
| Anxiety $\times$ gender                                | -.17**          | -.08               | -.01                               |
| Avoidance $\times$ gender                              | .03             | .05                | .23**                              |
| <i>Step 3:</i>   |                 |                    |                                    |
| Relational threat $\times$ anxiety $\times$ gender     | .15*            | -.02               | .13                                |
| Relational threat $\times$ avoidance $\times$ gender   | .03             | .06                | .21*                               |
| Non-relational threat $\times$ anxiety $\times$ gender | .01             | -.06               | -.08                               |
| Non-relational threat $\times$ avoid $\times$ gender   | -.11            | -.06               | -.05                               |

<sup>a</sup>A contrast code variable comparing women (1) to men (-1).

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

women,  $\beta = -.03$ , *ns*. Relationship threat did not significantly affect partner's attractiveness when attachment-related avoidance was low (1 SD below the mean), either among men or women,  $\beta_s = .08$  and  $-.12$ , respectively, *ns*. In addition, the interaction between relationship threat and attachment-related avoidance was significant for the desire to have sex with one's partner. The regression coefficients indicated that relational threat lessened the desire to have sex with one's partner when attachment-related avoidance was high,  $\beta = -.30$ ,  $p < .05$ , but not when it was low,  $\beta = .04$ , *ns* (see Figure 1).

Finally, the interaction between relationship threat and attachment-related anxiety was significant for the desire to have sex with a stranger. This interaction was qualified by a significant relationship threat  $\times$  anxiety  $\times$  gender interaction. The regression coefficients showed that relationship threat lessened the desire to have sex with a stranger when attachment-related anxiety was high among men,  $\beta = -.41$ ,  $p < .001$ , but not among women,  $\beta = -.11$ , *ns*, whereas it increased the desire to have sex with a stranger when attachment-related anxiety was low among men,  $\beta = .35$ ,  $p < .001$ , but not among women,  $\beta = .18$ , *ns*.



**Figure 1.** Interaction of relationship threat and attachment-related avoidance predicting the desire to have sex with one's partner (Study 1). Low and high refer to values  $-1$  and  $+1$  standard deviations from the mean, respectively.

Overall, the findings indicate that relationship and non-relationship threats had distinctive effects on the desire to have sex. Specifically, non-relational threat lessened the urge to have sex with one's partner, perhaps due to the increase in perceived stress (e.g., Laumann, Paik, & Rosen, 1999). Relationship threat did not lead to an increased desire for sex with one's partner, but did decrease the partner's perceived attractiveness. The effect of relationship threat on the partner's perceived attractiveness was moderated by attachment orientation and gender, such that relationship threat decreased perceived partner's attractiveness among more avoidant men. This finding is consistent with empirical evidence showing that the avoidant effect is less marked in women's sexuality than in men's (e.g., Cooper et al., 2006), possibly reflecting the amplification of women's habitual nurturing tendencies under relationship threat conditions. These nurturing tendencies may mitigate the destructive effects of attachment avoidance on sexual expressions. Furthermore, as expected, more avoidant individuals were least likely to desire to have sex with their partners following relationship threat. This pattern suggests

that threats to the future of the relationship imposed by partners may reaffirm highly avoidant individuals' negative beliefs about others, which could be channeled into feelings of detachment and sexual disengagement.

Relationship threat did not increase highly anxious people's desire to have sex with their partner. This suggests that highly anxious people's desire to engage in sex to covet reassurance under relationship-threatening conditions (Davis et al., 2004) might be slightly impaired by the resulting relational worries. Previous studies have shown that more anxiously attached people experience doubts about being loved during sexual intercourse (Birnbaum et al., 2006), and that these doubts may interfere with sexual desire (Birnbaum, 2007a; Birnbaum & Reis, 2006). Our study implies that relationship threat may exacerbate distraction by relational concerns and further interfere with desiring one's partner.

Highly anxious men were least likely to desire to have sex with a stranger following relationship threat. This finding fits with previous studies documenting that, when it comes to sex, men and women deal with relationship insecurities differently. More anxiously attached women are more inclined to have sex for self-enhancement reasons (Cooper et al., 2006) and to engage in extrapair sex (Bogaert & Sadava, 2002; Gangestad & Thornhill, 1997). Conversely, more anxiously attached men, who may be burdened by the traditional gender role of male-as-sexual-initiator (O'Sullivan & Byers, 1992), are less likely to use sex to bolster their self-esteem or to cheat on their partners (Cooper et al., 2006), possibly preferring to invest more in their current partners rather than risk rejection from new ones. Our findings imply that this tendency may be particularly pronounced under relationship-threatening conditions, which may further discourage highly anxious men from initiating sex with new partners.

## Study 2

Although the findings of Study 1 indicate that relationship threat has distinct effects on the desire to have sex, questions still remain as to whether and how relationship threat affects the specific motives behind this desire (e.g., procreation versus avoiding rejection). The specific motives elicited by threat may depend on one's expectations, goals, and assessment of threat (Birnbaum et al., 2008). Study 2 was designed to examine the effects of threat on motives for having sex and the possible role of attachment orientations in moderating these effects.

Participants in Study 2 imagined a relationship threat (the partner considering breaking up with them) or a non-relational threat (failure on an exam). They then completed sexual motives scales that assessed how likely they were to have sex for a variety of reasons. We hypothesized that relationship threat would promote both enhancement (e.g., having sex to enhance one's power, having sex to enhance physical or emotional pleasure) and relationship-based motives (e.g., having sex to nurture one's partner, having sex to express emotional value for one's partner). We also hypothesized that relationship threat would magnify the documented associations between attachment orientations and sexual motives, such that following relationship threat, self-enhancement motives would be most strongly elicited among highly avoidant people, whereas relationship-based motives would be most strongly elicited among highly anxious people. Given that

the literature on sexual motives has identified several further reasons for having sex (e.g., procreation, having sex to cope with upset feelings; Cooper et al., 1998; Hill & Preston, 1996), all were included for completion and analyzed in an exploratory manner.

## Method

**Participants.** One hundred and thirty-nine undergraduate students (97 women, 42 men) from a large Midwestern university in the United States, ranging in age from 18 to 34 years ( $M = 21.36$ ,  $SD = 3.05$ ), participated in this study. Participants received partial course credit for their participation. Approximately 76% of the participants were currently involved in a romantic relationship. All participants had experienced heterosexual intercourse, either in a current or past relationship.

**Measures and procedure.** After agreeing to participate in a study on personality, sexuality, and close relationships, participants completed a packet of questionnaires. Following the instructions, participants were randomly assigned to one of two visualization conditions used in Study 1: (a) a relationship threat scene in which they were asked to imagine that their partner was considering breaking up with them; and (b) a non-relationship threat scene in which participants were asked to imagine that they had just failed an important exam. After imagining one of these scenes, participants answered an open-ended probe: "Please describe this event in detail and the emotions and thoughts that it arouses in you". Answers to this question served as manipulation checks to ensure that each participant had the proper scene in mind prior to reporting their motives for having sex. Participants also rated the extent to which their relationship was threatened by the scene they described on a seven-point scale ranging from "not at all" (1) to "very much" (7).

Following these experimental procedures, participants were asked to think about how they felt right then, while having the proper scene in mind (e.g., being with a person they knew was thinking of breaking up with them), and to complete two sets of scales measuring sexual motives. The first measure was adapted from the Sex Motives Scale (SMS; Cooper et al., 1998), and previously used by Birnbaum et al. (in press), to assess the extent to which participants would have sex for each of 29 reasons (the original format assesses how often the participants have sex for these reasons). Participants indicated the likelihood that they would have sex for each particular reason (motive) on a five-point scale ranging from "not at all likely" (1) to "extremely likely" (5). Based on the factor analysis reported by Birnbaum et al. (in press), the motives were organized into six scales: Affirmation (five items; "How likely would you have sex to prove to yourself that your partner thinks you are attractive?";  $\alpha = .86$ ), Intimacy (five items; "How likely would you have sex to become more intimate with your partner?";  $\alpha = .91$ ), Hedonism (five items; "How likely would you have sex because it feels good?";  $\alpha = .92$ ), Insecurity (four items; "How likely would you have sex out of fear that your partner won't love you anymore if you don't?";  $\alpha = .89$ ), and Coping (five items; "How likely would you have sex to cope with upset feelings?";  $\alpha = .87$ ). Because the Peer Influence scale of the SMS is not relevant to dyadic processes, it is not reported.

The second measure was adapted from the Affective and Motivational Orientation Related to Erotic Arousal Questionnaire (AMORE; Hill & Preston, 1996). Participants

indicated how well each of 32 statements described them either currently or in the near future on a five-point scale ranging from “*not at all true*” (1) to “*completely true*” (5). The motives were organized into eight scales, each containing four items: Experiencing the Power of One’s Partner (e.g., “I find it a real turn-on when my partner takes charge and becomes authoritative during sexual activity or fantasy”;  $\alpha = .90$ ), Emotional Value for One’s Partner (e.g., “Sharing affection and love during sexual intercourse is one of the most intense and rewarding ways of expressing my concern for my partner”;  $\alpha = .82$ ), Relief from Stress (e.g., “When I am feeling unhappy or depressed, thinking about sex or engaging in sexual activity will make me feel better”;  $\alpha = .87$ ), Procreation (e.g., “One of the main reasons I am interested in sex is for the purpose of having children”;  $\alpha = .82$ ), Enhancement of Power (e.g., “I really enjoy having sex as a way of exerting dominance and control over my partner”;  $\alpha = .86$ ), Emotionally Valued by One’s Partner (e.g., “When I need to feel loved, I have the desire to relate to my partner sexually because sexual intimacy really makes me feel warm and cared for”;  $\alpha = .74$ ), Nurturance (e.g., “The most pleasurable sex I have is when it helps my partner forget about his or her problems and enjoy life a little more”;  $\alpha = .83$ ), and Pleasure (e.g., “The sensations of physical pleasure and release are major reasons that sexual activity and fantasy are so important to me”  $\alpha = .83$ ). Participants then provided demographic and relationship information (e.g., age, sexual orientation, number of sexual partners in the past 12 months).

Participants also completed the ECR (Brennan et al., 1998) described in Study 1. In the current sample, Cronbach alphas were high for the 18 anxiety items (.91) and the 18 avoidance items (.94). Placement of the ECR was counterbalanced; approximately half of the participants completed the ECR before reading the scenarios, and the other half completed it afterward. There were no order effects for the ECR.

## Results and discussion

**Manipulation check.** A *t*-test for independent samples on the manipulation check question, “Please rate the extent to which your relationship would be threatened by the scene you described”, yielded the expected effect of relationship threat,  $t(137) = 12.28, p < .001$ . The relationship threat ( $M = 4.86, SD = 1.87$ ) generated greater perceived relational threat than did the non-relationship threat condition ( $M = 1.76, SD = 1.02$ ).

**Threat, attachment, and sexual motives.** Next, we conducted a series of three-step hierarchical regressions similar to those described in Study 1. Specifically, we tested the effects of relational threat (a contrast code variable comparing relationship threat (1) to non-relationship threat (-1)), gender, and the attachment scores of anxiety and avoidance on different motives for having sex. Tables 2 and 3 present the standardized regression coefficients ( $\beta$ s) for each effect at the step in which it was entered into the regression equation. Regression analyses revealed no meaningful interactions between attachment-related avoidance and attachment-related anxiety; hence, they are not reported. For simplicity, only the effects involving relationship threat are described.

The regressions revealed that the main effect of relationship threat significantly predicted Hedonism, Relief from Stress, Power Enhancement, Partner Power,

**Table 2.** Beta coefficients for predicting sexual motives (SMS) from relationship threat (relational versus non-relational), attachment orientations, and gender (Study 2;  $N = 139$ ).

|                                      | Sexual motives (SMS) |          |          |            |        |
|--------------------------------------|----------------------|----------|----------|------------|--------|
|                                      | Affirmation          | Intimacy | Hedonism | Insecurity | Coping |
| <i>Step 1:</i>                       |                      |          |          |            |        |
| Relationship threat                  | .09                  | .13      | .21*     | -.05       | .09    |
| Attachment-related anxiety           | .30***               | .06      | -.03     | .38***     | .11    |
| Attachment-related avoidance         | .14                  | -.29**   | -.04     | .11        | .21*   |
| Gender <sup>a</sup>                  | -.10                 | .08      | -.14     | -.05       | -.07   |
| <i>Step 2:</i>                       |                      |          |          |            |        |
| Relational threat × anxiety          | .01                  | -.08     | -.23*    | -.15       | -.07   |
| Relational threat × avoidance        | .07                  | .15      | .04      | .13        | .06    |
| Relational threat × gender           | -.02                 | -.11     | .04      | -.06       | .11    |
| Anxiety × gender                     | -.05                 | -.07     | .01      | .06        | .05    |
| Avoidance × gender                   | .06                  | .23*     | .11      | .03        | .08    |
| <i>Step 3:</i>                       |                      |          |          |            |        |
| Relational threat × anxiety × gender | -.02                 | .09      | -.05     | .02        | .04    |
| Relational threat × avoid × gender   | -.12                 | -.21     | -.07     | .08        | .02    |

<sup>a</sup>A contrast code variable comparing women (1) to men (-1).

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

Expressing Emotional Value, and Nurturance, such that relationship threat increased the likelihood of having sex for pleasure, obtaining relief from stress, and enhancing one's power, as well as nurturing one's partner and expressing emotional value for him or her. Relationship threat also increased the likelihood of having sex to experience the power of one's partner. The interaction between relationship threat and attachment-related anxiety was significant for Hedonism and Pleasure. Using Aiken and West's (1991) procedure, we found that relationship threat promoted hedonism and pleasure when attachment-related anxiety was low (1 SD below the mean),  $\beta_s = .44$  and  $.36$ , respectively,  $ps < .01$  and  $.05$ , respectively, but not when attachment-related anxiety was high (1 SD above the mean),  $\beta_s = -.02$  and  $-.04$ , respectively,  $ns$  (see Figure 2).

Viewed together, the findings indicate that relationship threat had a distinct effect on specific reasons for having sex. Relationship threat increased the likelihood of having sex to nurture one's partner and to express emotional value for him or her, implying that threatening the future of the relationship may elicit protective responses designed to improve the relationship (such as compensatory relational restoration strategies). In addition, relationship threat increased the likelihood of having sex to experience the power of one's partner. Experiencing one's partner's power through sexual activity may provide an avenue to gaining the full attention of one's partner, which may be particularly appealing when confronting relationship insecurity (Davis et al., 2004; Schachner & Shaver, 2004). At the same time, relationship threat promoted hedonism and increased the likelihood of having sex to obtain relief from stress and to enhance one's power, suggesting that relationship threat may also threaten one's self-image and, therefore, may elicit protective responses that help individuals feel better about themselves (such as compensatory self-enhancement).

**Table 3.** Beta coefficients for predicting sexual motives (AMORE scales) from relationship threat (relational versus non-relational), attachment orientations, and gender (Study 2;  $N = 139$ ).

|                                      | Sexual motives (AMORE scales) |               |        |             |
|--------------------------------------|-------------------------------|---------------|--------|-------------|
|                                      | Partner power                 | Express value | Relief | Procreation |
| <i>Step 1:</i>                       |                               |               |        |             |
| Relationship threat                  | .20*                          | .20*          | .19*   | .12         |
| Attachment-related anxiety           | .17                           | .12           | .19*   | .22*        |
| Attachment-related avoidance         | -.07                          | -.14          | .16    | -.01        |
| Gender <sup>a</sup>                  | -.13                          | .20*          | -.08   | .04         |
| <i>Step 2:</i>                       |                               |               |        |             |
| Relationship threat × anxiety        | -.02                          | -.01          | .04    | .08         |
| Relationship threat × avoidance      | -.07                          | .10           | .14    | -.12        |
| Relationship threat × gender         | .04                           | -.03          | .06    | .06         |
| Anxiety × gender                     | .13                           | .14           | -.14   | -.10        |
| Avoidance × gender                   | -.02                          | .24*          | .04    | .09         |
| <i>Step 3:</i>                       |                               |               |        |             |
| Relational threat × anxiety × gender | .01                           | -.06          | -.04   | -.02        |
| Relational threat × avoid × gender   | .04                           | -.24          | -.09   | -.08        |

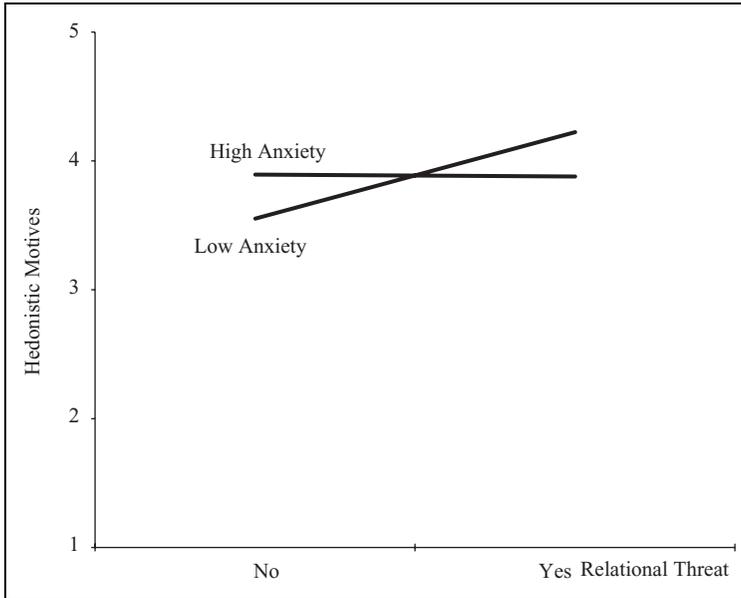
  

|  | Sexual motives (AMORE scales) |             |            |          |
|--|-------------------------------|-------------|------------|----------|
|  | Enhance power                 | Feel valued | Nurturance | Pleasure |
| <i>Step 1:</i>                         |                               |             |            |          |
| Relationship threat                    | .18*                          | .12         | .23*       | .16      |
| Attachment-related anxiety             | .08                           | .28**       | .23*       | .05      |
| Attachment-related avoidance           | .19*                          | -.09        | .01        | -.10     |
| Gender <sup>a</sup>                    | -.11                          | .08         | -.09       | -.17     |
| <i>Step 2:</i>                         |                               |             |            |          |
| Relationship threat × anxiety          | -.10                          | .01         | -.12       | -.20*    |
| Relationship threat × avoidance        | .02                           | .01         | .11        | -.01     |
| Relationship threat × gender           | -.04                          | .13         | .08        | .04      |
| Anxiety × gender                       | -.04                          | -.04        | -.13       | -.01     |
| Avoidance × gender                     | -.13                          | .13         | .24*       | .11      |
| <i>Step 3:</i>                         |                               |             |            |          |
| Relationship threat × anxiety × gender | -.05                          | -.07        | .04        | -.14     |
| Relationship threat × avoid × gender   | -.03                          | -.07        | -.10       | .03      |

<sup>a</sup>A contrast code variable comparing women (1) to men (-1).

\* $p < .05$ ; \*\* $p < .01$ .

Notably, although we did find the expected main effect of relationship threat for enhancement and relationship-based motives, we failed to find the expected interactions with attachment orientations. In fact, the only significant interaction effect indicated that highly anxious individuals were less likely than their less anxiously attached counterparts to report pleasure enhancement motives (hedonism) following relationship threat, possibly reflecting their difficulties in enjoying sex while being flooded with relationship worries imposed by threat. Indeed, past research has found that highly anxious



**Figure 2.** Interaction of relationship threat and attachment-related anxiety predicting hedonistic motivation (Study 2). Low and high refer to values  $-1$  and  $+1$  standard deviations from the mean, respectively.

individuals are most likely to experience relational worries and dissatisfaction during sexual intercourse (Birnbaum, 2007a; Birnbaum et al., 2006).

## General discussion

The attachment system is the earliest developing social behavioral system in humans. As such, it shapes the regulatory functioning of the later-developing sexual system (Shaver, Hazan, & Bradshaw, 1988). Nevertheless, behaviors characteristic of the sexual system may serve attachment-related goals (e.g., closeness), primarily in situations that call for distress regulation that activate attachment behaviors (e.g., proximity seeking; Davis et al., 2004). In this research, we demonstrate the contribution of the sexual system to regulating reactions to attachment-related stressful events by examining the effects of relationship threat on the desire to have sex and the reasons for engaging in it. We also show that these reactions are moderated by attachment orientations. Study 1 revealed that relationship threat decreased the desire to have sex with one's partner among highly avoidant people, as well as the desire to have sex with a stranger among highly anxious men. Study 2 indicated that relationship threat promoted both intimacy and enhancement motives (e.g., power enhancement, pleasure enhancement), and the latter were least likely to be reported by highly anxious individuals.

Although relationship threat did not lead to an increased desire for sex with one's partner, it did affect the reasons for engaging in sex. As predicted, relationship threat prompted both enhancement and relationship-based motives (e.g., engaging in sex to

nurture one's partner), suggesting that people use sex to both enhance their physical or emotional pleasure and repair the threatened relationship. These proximal psychological motives of pleasure enhancement and maintaining relationships underpin two major normative functions of the sexual behavioral system that are related to reproductive success in the context of long-term romantic relationships: (a) promoting frequent sexual activity through increasing positive affect and sexual motivation; and (b) keeping partners attached to each other for an extended period of time (Birnbaum & Gillath, 2006; Birnbaum & Reis, 2006). These functions are not independent. Pursuing sexual pleasure not only contributes to more frequent sexual intercourse, but may also promote the development of emotional bonds (Hazan & Zeifman, 1994). Indeed, sexual expression is a common relationship maintenance strategy (e.g., Bell, Daly, & Gonzalez, 1987), which fosters a context in which partners may jointly care for and protect their offspring through infancy and childhood (Hazan & Zeifman, 1994). Given that enhancement and relationship-based motives underlie relationship maintenance processes, it is hardly surprising that both motives were normatively evoked under relationship-threatening circumstances.

Not all people react to relationship threat in the same way, however. Our research indicated that attachment orientations moderated the effects of threat on sexual motivations, such that highly anxious people were less likely than their less anxiously attached counterparts to be motivated by hedonism. This pattern, together with the finding that highly anxious people's desire to have sex with their partner was not increased following relationship threat, is consistent with the research showing that relatively low levels of approach sexual goals (e.g., pursuing one's own pleasure) are associated with decreased sexual desire (Impett, Strachman, Finkel, & Gable, 2008). A possible explanation for this pattern is that relational concerns may inhibit highly anxious people's expression of their sexual needs and lead them to defer to their partners' preferences to please them (Davis et al., 2006). As our findings suggest, highly anxious people are even less likely to assert their own sexual needs in relationship-threatening situations, because the threat imposed by their partner to the future of the relationship may intensify these chronic relational worries. The ensuing negative sexual affect and cognitions may therefore pose additional obstacles to erotic pleasure and further interfere with desiring one's partner (e.g., Birnbaum, 2007a).

Highly avoidant individuals were, as expected, least likely to desire having sex with their partners following relationship threat. The threat imposed by the partner to the future of the relationship may remind highly avoidant people that others cannot be counted on and may therefore lead them to adopt distancing strategies (e.g., Davis et al., 2003). This pattern may be particularly marked in the sexual realm, because of highly avoidant individuals' tendency to use sex to maximize distance, even in the most intimate interactions (e.g., Birnbaum, 2010; Birnbaum et al., 2006). To be sure, a recent study has shown that relationship threat induced a negative view of others in highly avoidant individuals' sexual fantasies (Birnbaum et al., 2008). This negative view of others may eventually lead to sexual disengagement, at least from one's partner, as our findings suggest.

Viewed as a whole, our research elucidates the importance of attachment working models to our understanding of the sexual system. The present research extends prior

studies examining attachment insecurities and sexual motives (Cooper et al., 2006; Davis et al., 2004; Schachner & Shaver, 2004) by revealing *how* attachment orientations may affect reactions to relationship threat through specific sexual motivations. Our findings suggest that highly avoidant people sexually withdraw from their partners when feeling threatened. By comparison, highly anxious people, who habitually live in a world of relational worries, apparently do not change their “dependent stance” and keep having sex for attachment-based reasons following relationship threat. At the same time, they may find it difficult to enjoy sex while being flooded with relationship worries imposed by threat.

Our results should be interpreted in light of certain caveats. For one, the present study used a scenario in which one’s partner is considering ending the relationship, whereas previous studies, which showed that relationship threats trigger reassurance-seeking behaviors, focused on involuntary separations (Fraley & Shaver, 1998) or on the threat of an anxiety-eliciting task (Simpson et al., 1992). Thus, the finding that relationship threat did not increase the desire to have sex with one’s partner might be related to the type of threat studied. Whereas an impending temporary separation or anxiety-provoking situations are likely to elicit attachment-related behaviors, a situation in which a partner seems to be preparing to end the relationship may elicit reactions that focus on discussing problems and reasons for such a decision (e.g., voice reaction; Rusbult, Zembrodt, & Gunn, 1982), rather than reassurance seeking through sex. Future research should examine the effect of threat on sexual motivation using a diverse set of threats (e.g., external threats, threats within the person) that may differentially activate personal and interpersonal goals (e.g., sex-related goals of genetic self-promotion, attachment-related goals of maintaining the bond). Relatedly, our study employed hypothetical threat scenarios rather than a paradigm in which participants were exposed to an actual threat. The generalizability of the effects reported here should therefore be examined in future studies using more ecologically valid designs and various sexual expressions (e.g., actual sexual behavior).

Furthermore, we used a general attachment orientation measure to predict a specific reaction in a specific relationship scenario. Although people are guided by global attachment orientations, which are largely a result of attachment experiences encountered throughout life, they also develop beliefs and expectancies about specific relationships (Creasey & Ladd, 2005; Treboux, Crowell, & Waters, 2004) that can change over time (Kirkpatrick & Hazan, 1994). As a result, people harbor multiple attachment models available in memory (Baldwin, Keelan, Fehr, Enns, & Koh-Rangarajoo, 1996; Pierce & Lydon, 2001) that may not necessarily be highly correlated with global attachment orientations (Crowell, Treboux, & Waters, 1999) and, thus, may uniquely predict interpersonal perceptions and interactions when activated (Creasey & Ladd, 2005; Simpson & Rholes, 2002). Further research is needed to examine the associations between relationship-specific attachment orientation and specific sexual motives in the face of threat to a specific relationship.

In addition, the two studies investigated sexual motives from the viewpoint of the individual, independent of his or her current romantic partner. Another potential moderator of the relation between threat and sexual motives might be the attachment orientation or personal qualities of the current partner. An individual may be less likely

to display relationship-saving sexual motives, for example, if his or her partner is not likely to respond positively to such advances. Indeed, one recent study has shown that people are more likely to engage in sex in pursuit of self-focused goals, such as pursuing pleasure, if their partners are highly avoidant and therefore relatively emotionally detached during sex (Impett, Gordon, & Strachman, 2008). Information on the attachment orientations of both partners, therefore, may be useful in enhancing the prediction of the degree to which certain sexual motivations are activated by threat. Finally, if the purpose and function of sexual behavior changes as relationships develop across the life-span, other or different sexual motives might be elicited in response to threat among individuals in well-established relationships or among older individuals.

These caveats notwithstanding, the present studies are among the first to establish causal links between experimentally manipulated sources of threats and specific sexual motives. Our findings suggest that sexual desires constitute a unique route by which people cope with threats, which manifest the personal and interpersonal goals that are most likely to be challenged. Whether engaging in sex for specific reasons under threatening circumstances is actually reflected during daily sexual interactions and whether it indeed promotes personal and interpersonal well-being are questions for future research.

### **Conflict of interest statement**

The author declared no conflicts of interest with respect to the authorship and/or publication of this article.

### **Funding**

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

### **References**

- Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage.
- Andersen, S. M., & Chen, S. (2002). The relational self: An interpersonal social-cognitive theory. *Psychological Review*, *109*, 619–645.
- Baldwin, M. W., Keelan, J. P. R., Fehr, B., Enns, V., & Koh-Rangarajoo, E. (1996). Social-cognitive conceptualization of attachment working models: Availability and accessibility effects. *Journal of Personality and Social Psychology*, *71*, 94–109.
- Bell, R. A., Daly, J. A., & Gonzalez, C. (1987). Affinity-maintenance in marriage and its relationship to women's marital satisfaction. *Journal of Marriage and the Family*, *49*, 445–454.
- Berman, M. I., & Frazier, P. A. (2005). Relationship power and betrayal experience as predictors of reactions to infidelity. *Personality and Social Psychology Bulletin*, *31*, 1617–1627.
- Birnbaum, G. E. (2007a). Attachment orientations, sexual functioning, and relationship satisfaction in a community sample of women. *Journal of Social and Personal Relationships*, *24*, 21–35.
- Birnbaum, G. E. (2007b). Beyond the borders of reality: Attachment orientations and sexual fantasies. *Personal Relationships*, *14*, 321–342.
- Birnbaum, G. E. (2010). Bound to interact: The divergent goals and complex interplay of attachment and sex within romantic relationships. *Journal of Social and Personal Relationships*, *27*, 245–252.

- Birnbaum, G. E., & Gillath, O. (2006). Measuring subgoals of the sexual behavioral system: What is sex good for? *Journal of Social and Personal Relationships*, 23, 675–701.
- Birnbaum, G. E., Hirschberger, G., & Goldenberg, J. L. (in press). Desire in the face of death: Terror management, attachment, and sexual motivation. *Personal Relationships*.
- Birnbaum, G. E., & Reis, H. T. (2006). Women's sexual working models: An evolutionary-attachment perspective. *The Journal of Sex Research*, 43, 328–342.
- Birnbaum, G. E., Reis, H. T., Mikulincer, M., Gillath, O., & Orpaz, A. (2006). When sex is more than just sex: Attachment orientations, sexual experience, and relationship quality. *Journal of Personality and Social Psychology*, 91, 929–943.
- Birnbaum, G. E., Svitelman, N., Bar-Shalom, A., & Porat, O. (2008). The thin line between reality and imagination: Attachment orientations and the effects of relationship threats on sexual fantasies. *Personality and Social Psychology Bulletin*, 34, 1185–1199.
- Bogaert, A. F., & Sadava, S. (2002). Adult attachment and sexual behavior. *Personal Relationships*, 9, 191–204.
- Bowlby, J. (1969/1982). *Attachment and loss: Vol. 1. Attachment* (2nd ed.). New York: Basic Books.
- Bowlby, J. (1973). *Attachment and loss: Vol. 2. Separation: Anxiety and anger*. New York: Basic Books.
- Brennan, K. A., Clark, C. L., & Shaver, P. R. (1998). Self-report measurement of adult attachment: An integrative overview. In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 46–76). New York: Guilford Press.
- Cassidy, J., & Kobak, R. R. (1988). Avoidance and its relationship with other defensive processes. In J. Belsky & T. Nezworski (Eds.), *Clinical implications of attachment* (pp. 300–323). Hillsdale, NJ: Erlbaum.
- Cooper, M. L., Pioli, M., Levitt, A., Talley, A., Micheas, L., & Collins, N. L. (2006). Attachment styles, sex motives, and sexual behavior: Evidence for gender specific expressions of attachment dynamics. In M. Mikulincer & G.S. Goodman (Eds.), *Dynamics of love: Attachment, caregiving, and sex* (pp. 243–274). New York: Guilford Press.
- Cooper, M. L., Shapiro, C. M., & Powers, A. M. (1998). Motivations for sex and risky sexual behavior among adolescents and young adults: A functional perspective. *Journal of Personality and Social Psychology*, 75, 1528–1558.
- Creasey, G., & Ladd, A. (2005). Generalized and specific attachment representations: Unique and interactive roles in predicting conflict behaviors in close relationships. *Personality and Social Psychology Bulletin*, 31, 1026–1038.
- Crittenden, P.M. (1997). Patterns of attachment and sexual behavior: Risk of dysfunction versus opportunity for creative integration. In L. Atkinson & K. J. Zucker (Eds.), *Attachment and psychopathology* (pp. 47–93). New York: Guilford Press.
- Crowell, J., Treboux, D., & Waters, E. (1999). The adult attachment interview and relationship questionnaire: Relations to reports of mothers and partners. *Personal Relationships*, 6, 1–18.
- Davis, D., Shaver, P. R., & Vernon, M. L. (2003). Physical, emotional, and behavioral reactions to breaking up. *Personality and Social Psychology Bulletin*, 29, 871–884.
- Davis, D., Shaver, P. R., & Vernon, M. L. (2004). Attachment style and subjective motivations for sex. *Personality and Social Psychology Bulletin*, 30, 1076–1090.
- Davis, D., Shaver, P. R., Widaman, K. F., Vernon, M. L., Follette, W. C., & Beitz, K. (2006). “I can't get no satisfaction”: Insecure attachment, inhibited sexual communication, and sexual dissatisfaction. *Personal Relationships*, 13, 465–483.

- Fraley, R. C., Davis, K. E., & Shaver, P. R. (1998). Dismissing-avoidance and the defensive organization of emotion, cognition, and behavior. In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 249–279). New York: Guilford Press.
- Fraley, R. C., Garner, J. P., & Shaver, P. R. (2000). Adult attachment and the defensive regulation of attention and memory: The role of preemptive and postemptive processes. *Journal of Personality and Social Psychology, 79*, 816–826.
- Fraley, R. C., & Shaver, P. R. (1998). Airport separations: A naturalistic study of adult attachment dynamics in separating couples. *Journal of Personality and Social Psychology, 75*, 1198–1212.
- Gangestad, S. W., & Thornhill, R. (1997). The evolutionary psychology of extra-pair sex: The role of fluctuating asymmetry. *Evolution and Human Behavior, 18*, 69–88.
- Guerrero, L. K. (1998). Attachment-style differences in the experience and expression of romantic jealousy. *Personal Relationships, 5*, 273–291.
- Hazan, C., & Zeifman, D. (1994). Sex and the psychological tether. In K. Bartholomew & D. Perlman (Eds.), *Advances in Personal Relationships: Vol. 5. Attachment processes in adulthood* (pp. 151–177). London: Jessica Kingsley.
- Hill, C. A., & Preston, L. K. (1996). Individual differences in the experience of sexual motivation: Theory and measurement of dispositional sexual motives. *The Journal of Sex Research, 33*, 27–45.
- Impett, E. A., Gordon, A. M., & Strachman, A. (2008). Attachment and daily sexual goals: A study of dating couples. *Personal Relationships, 15*, 375–390.
- Impett, E. A., Strachman, A., Finkel, E. J., & Gable, S. L. (2008). Maintaining sexual desire in intimate relationships: The importance of approach goals. *Journal of Personality and Social Psychology, 94*, 808–823.
- Kirkpatrick, L. A., & Hazan, C. (1994). Attachment styles and close relationships: A four year prospective study. *Personal Relationships, 1*, 123–142.
- Laumann, E. O., Paik, A., & Rosen, R. D. (1999). Sexual dysfunction in the United States: prevalence and predictors. *Journal of the American Medical Association, 281*, 537–544.
- Main, M. (1990). Cross-cultural studies of attachment organization: Recent studies, changing methodologies, and the concept of conditional strategies. *Human Development, 33*, 48–61.
- Mikulincer, M., Birnbaum, G., Woddis, D., & Nachmias, O. (2000). Stress and accessibility of proximity-related thoughts: Exploring the species-typical and intraindividual components of attachment theory. *Journal of Personality and Social Psychology, 78*, 509–523.
- Mikulincer, M., & Florian, V. (2000). Exploring individual differences in reactions to mortality salience – Does attachment style regulate terror management mechanisms? *Journal of Personality and Social Psychology, 79*, 260–273.
- Mikulincer, M., Gillath, O., & Shaver, P. R. (2002). Activation of the attachment system in adulthood: Threat-related primes increase the accessibility of mental representations of attachment figures. *Journal of Personality and Social Psychology, 83*, 881–895.
- Mikulincer, M., & Shaver, P. R. (2003). The attachment behavioral system in adulthood: Activation, psychodynamics, and interpersonal processes. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 35, pp. 53–152). New York: Academic Press.
- Mikulincer, M., & Shaver, P. R. (2007). *Attachment in adulthood – Structure, dynamics, and change*. New York: Guilford Press.
- O’Sullivan, L. F., & Byers, E. S. (1992). College students’ incorporation of initiator and restrictor roles in sexual dating interactions. *The Journal of Sex Research, 29*, 435–446.

- Pierce, T. & Lydon, J. (2001). Global and specific relational models in the experience of social interactions. *Journal of Personality and Social Psychology, 80*, 4, 613–631.
- Rusbult, C. E., Zembrodt, I. M., & Gunn, L. K. (1982). Exit, voice, loyalty, and neglect: Responses to dissatisfaction in romantic involvements. *Journal of Personality and Social Psychology, 43*, 1230–1242.
- Schachner, D. A., & Shaver, P. R. (2004). Attachment dimensions and motives for sex. *Personal Relationships, 11*, 179–195.
- Shaver, P. R., Hazan, C., & Bradshaw, D. (1988). Love as attachment: The integration of three behavioral systems. In R. J. Sternberg & M. Barnes (Eds.), *The psychology of love* (pp. 68–99). New Haven, CT: Yale University Press.
- Simpson, J. A. (1990). Influence of attachment styles on romantic relationships. *Journal of Personality and Social Psychology, 59*, 971–980.
- Simpson, J. A., & Rholes, W. S. (1994). Stress and secure base relationships in adulthood. In K. Bartholomew & D. Perlman (Eds.), *Advances in personal relationships (Vol. 5): Attachment processes in adulthood* (pp. 181–204). London: Kingsley.
- Simpson, J. A., & Rholes, W. S. (2002). Fearful-avoidance, disorganization, and multiple working models: Some directions for future theory and research. *Attachment and Human Development, 4*, 223–229.
- Simpson, J. A., Rholes, W. S., & Nelligan, J. S. (1992). Support-seeking and support-giving within couples in an anxiety-provoking situation: The role of attachment styles. *Journal of Personality and Social Psychology, 62*, 434–446.
- Treboux, D., Crowell, J., & Waters, E. (2004). When “new” meets “old”: Configurations of adult attachment representations and their implications for marital functioning. *Developmental Psychology, 40*, 295–314.