

Original Article

Coping with Romantic Betrayal: Sex Differences in Responses to Partner Infidelity

Saul L. Miller, Department of Psychology, Florida State University, Tallahassee, USA. Email: smiller@psy.fsu.edu (Corresponding author)

Jon K. Maner, Department of Psychology, Florida State University, Tallahassee, USA

Abstract: The current research tested the hypothesis that, because infidelity entails somewhat different negative consequences for men and women, men and women display different emotional and behavioral reactions aimed at reducing the costs of infidelity. The study utilized an open-response method in which participants wrote about their reactions to an imagined infidelity. Findings suggest that, in response to partner infidelity, men display greater feelings of anger and a greater propensity for violence (particularly toward the male interloper), whereas women display greater feelings of sadness and a greater inclination toward seeking out sources of compensatory social affiliation (particularly from existing friendships). The current research is some of the first to identify functional responses designed to help women and men offset the social costs inflicted by a partner's infidelity.

Keywords: infidelity; sex differences; violence; affiliation; emotion

Introduction

Preventing a mate from engaging in extra-pair romantic relationships is a major challenge faced by a myriad of sexually reproducing species. Even a single romantic infidelity can lead to large reproductive and social costs. As a result, adaptive psychological and behavioral processes may have evolved to guard against possible rivals and to reduce the likelihood of infidelity (e.g., Buss and Shackelford, 1997; Buss, Shackelford, and McKibbin, 2008; Goetz, Shackelford, Platek, Starratt, and McKibbin, in press; Haselton and Gangestad, 2006; Shackelford, Goetz, Buss, Euler, and Hoier, 2005; Starratt, Shackelford, Goetz, and McKibbin, 2007).

Still, even the most vigorous mate-guarding tactics are unlikely to completely prevent infidelities from occurring. Controlled community studies in the U.S., for example, suggest that approximately 20%-40% of men and 20%-25% of women engage in

extramarital affairs (Greeley, 1994; Laumann, Gagnon, Michael, and Michaels, 1994). Nor is infidelity confined to Western society; it is prevalent across hundreds of cultures (Betzig, 1989). Indeed, despite strategies designed to reduce the likelihood of romantic betrayals, infidelity has been a common occurrence throughout human evolutionary history.

Given the frequency with which infidelity has occurred throughout human evolution, individuals are likely to display strategies designed to help cope with the steep costs imposed by a partner's infidelity. A large number of evolutionarily inspired studies have focused on sex differences in how much distress and jealousy are elicited in response to different types of infidelity (e.g., emotional versus sexual) (Becker, Sagarin, Guadagno, Millevoi, and Nicastle, 2004; Buss, Larsen, Westen, and Semmelroth, 1992; Buunk, Angleitner, Oubaid, and Buss, 1996; Sagarin, Becker, Guadagno, Nicastle, and Millevoi, 2003). Relatively few studies, in contrast, have focused on the strategies that men and women might use to offset the costs imposed by infidelity. Moreover, the few studies that have examined such strategies have focused largely on male responses, at times neglecting the strategies employed by females. In the current paper we suggest that, because infidelity entails somewhat different negative consequences for men and women, men and women will display different emotional and behavioral reactions aimed at reducing the sex-specific costs of infidelity (cf. Shackelford, Buss, and Bennett, 2002). Although men are expected to display a relatively greater propensity for anger and violence in response to infidelity, women are expected instead to display greater sadness and a pronounced inclination toward seeking out sources of compensatory social affiliation.

Male violence and anger in response to infidelity

Both men and women can suffer greatly from a partner's infidelity. However, the specific costs that such a betrayal can incur on men and women are somewhat different. In addition to direct reproductive costs such as cuckoldry (cf. Shackelford and Goetz, 2007), men may suffer immensely damaging social consequences. An infidelity may lower a man's perceived mate value, lower his status, and indicate vulnerability to other mate poachers (Buss, 2002). Thus, to be reproductively successful in the face of an infidelity, adaptive processes – both behavioral and psychological – may have evolved in men to quell some of these long-lasting costs.

It is well-known that a man's mate value and status often depends on his level of dominance (Burriss and Little, 2006; Buss, 1989; Gangestad, Simpson, Cousins, Garver-Apgar, and Christensen, 2004). Thus, as a way to offset the costs imposed by an infidelity, a man may respond by employing strategies designed to reassert his dominance. One means by which men assert their dominance over other men is through the use of violence (Johnson, Burk, and Kirkpatrick, 2007). Therefore, in response to the dominance threat that an infidelity can pose, men may engage in violent behaviors as a way to offset that threat, and this propensity for violence is expected to be greater than any such tendency in women. In fact, a large body of evidence already exists to support such a claim. Men report feeling more homicidal and violent than women do in reaction to a partner's infidelity (Shackelford, LeBlanc, and Drass, 2000), and male sexual jealousy has been shown to precipitate violent behavior (Daly and Wilson, 1988; Puente and Cohen, 2003; Shackelford et al., 2005). Moreover, evidence suggests that these responses to infidelity are designed at least in part to help a man regain his status (Vandello and Cohen, 2003). In addition to potentially reasserting one's dominance, male violence may also aid in deterring future

encroachment by male interlopers, as well as further infidelity by present and future romantic partners (Daly and Wilson, 1988; Wilson and Daly, 1996). In sum, theory and evidence suggest that violence may reflect an adaptive male response to the problem of infidelity.

Men's propensity toward violence may be accompanied by distinct emotions as well. A large literature demonstrates that jealousy is an adaptive emotion triggered by threats to a romantic relationship (Buss, 2002; Buss and Shackelford, 1997; Daly and Wilson, 1988). Research, however, suggests that jealousy is not a simple, homogenous emotion, but rather an amalgam of several emotions (Guerrero, Trost, and Yoshimura, 2005; Sabini and Green, 2004; Shackelford, LeBlanc, and Drass, 2000; Sharpsteen, 1993). Converging evidence suggests that two primary components of jealousy are anger and sadness (Panskepp, 1982; Sharpsteen and Kirkpatrick, 1997; Sharpsteen, 1991; Smith, Kim, and Parrott, 1988; White and Mullen, 1989).

There is reason to expect that, in response to infidelity, men will display an inclination toward anger, in particular. Previous research suggests that facial expressions of anger can act as signals of dominance among men (Hess, Blairy, and Kleck, 2000). Thus, displays of anger may be an additional means by which men try to overcome the dominance threat posed by an infidelity. Moreover, anger is linked inextricably with violence (Lazarus, 1991; Shaver, Schwartz, Kirson, and O'Connor, 1987), and this is especially true in the context of romantic relationships (Sugarman and Hotaling, 1989). Indeed, consistent with theories suggesting that emotions serve as motivators of behavior (Haselton and Ketelaar, in press), anger may serve to facilitate male violence. Given the relationship between anger, violence, and dominance, one might expect that, in response to infidelity, men display anger more strongly than women do. Documented sex differences in anger responses to infidelity have been inconsistent, however, with some studies suggesting that men are angrier than women (e.g., Green and Sabini, 2006), some suggesting that women are angrier than men (e.g., Shackelford et al., 2000), and others suggesting little or no difference (e.g., Becker et al., 2004). Thus, it remains unclear whether men respond to infidelity with greater anger than women do.

Female affiliation and sadness in response to infidelity

Although male violence appears to be a well documented response to infidelity, less is known about the strategies that women may employ. Just as men can suffer greatly from a partner's infidelity, so too can women. The specific nature of their suffering, however, may be somewhat different from that of men. In particular, women have faced the risk of losing valuable resources from a mate – resources that would help them raise and care for their offspring (Buss, 2007). Additionally, because males often provide protection for their female partners, women who have suffered an infidelity may be threatened by a loss of protection, thus increasing their vulnerability to threats from predators and other people.

Among women, the formation and preservation of coalitions may help offset these costs. Coalitions can provide valuable resources such as food and shelter, as well as protection from predators and other threats (Caporael, 1997). Because of their physical size and stature and because they often were the primary caretakers for offspring, women historically have been limited in their fight-or-flight responses to threats. Engaging in violence following an infidelity could, for example, endanger a woman and her offspring. Thus, women may be less violent than men because the marginal costs of violence are

much higher given their expected lifetime reproductive output. As a consequence, women's responses to threats are thought to be characterized by a pattern of "tending and befriending" – focusing their energies on forming and maintaining alliances (Taylor et al., 2000). Indeed, previous research suggests that women, more so than men, associate safety with affiliations (Helgeson and Sharpsteen, 1987). To date, no studies have examined whether women respond to infidelity by displaying an increase in coalition-building. Because coalitions provide women with benefits that are similar to those offered by a long-term romantic partner (e.g., resources and protection), the threat of infidelity may increase women's tendency to form and maintain their social coalitions. For this reason, we hypothesize that, in response to partner infidelity, women will be more inclined than men to affiliate with close others.

Similar to men, women may also respond to infidelity with specific emotions. However, there is reason to expect that women may be less inclined than men to display anger, and relatively more inclined to display sadness. Compared to men, women are less concerned with their own dominance and thus may be less likely to display expressions of anger designed to signal dominance. Given that women tend to focus more on the affiliative needs that a romantic partner provides, an infidelity that reflects the potential loss of a partner may induce feelings such as sadness that are associated with a lack of social bonds, loneliness, and rejection (Guerrero et al., 2005; Parrott, 1991), and as mentioned previously, sadness is a primary component of jealousy. Thus, for women, a partner's infidelity may lead not only to a desire for compensatory social affiliation, but also to emotional displays of sadness (Becker et al., 2004; Geary, Rumsey, Bow-Thomas, and Hoard, 1995; Green and Sabini, 2006; Shackelford et al., 2000). Thus, we predict that women will react with greater sadness than men in response to a romantic infidelity.

The current research

In the current research, we tested the hypothesis that men and women would respond to infidelity with behaviors designed to help offset the sex-specific costs inflicted by a partner's infidelity. We predicted that, compared with women, men would report greater feelings of anger and a greater propensity toward violence. Women, on the other hand, were predicted to report greater feelings of sadness than men and a greater tendency to engage in affiliative behaviors.

To test these hypotheses, participants wrote about their reactions to an imagined infidelity. These responses were later coded for particular behaviors and emotions. This method can be contrasted with previous studies that have relied primarily on responses to questionnaire items (e.g., Becker et al., 2004; Green and Sabini, 2006; Shackelford et al., 2000), which could bias participants responses toward certain emotions and behaviors that they might not have otherwise thought to report. The free-response method used in the current study allowed us to more adequately circumvent this potential problem of participants' biasing their responses based on the specific types of questions being asked.

Materials and Methods

Participants

Sixty-nine undergraduate students (34 men; 35 women; age range: 18-30) participated in exchange for course credit.

Design and Procedure

Participants were run in individual sessions. They began by performing a task shown in previous research to elicit feelings of jealousy and concerns about infidelity (Maner, Gailliot, Rouby, and Miller, 2007). Participants were asked to think of their current romantic partner (or, if they were single, someone toward whom they had strong romantic feelings), and then to imagine a 4-part infidelity scenario in which that person was observed (a) glancing at and smiling at another person at the party, (b) talking to and flirting with this other person, (c) holding hands with and going into another room alone with this other person, and finally (d) engaging in sexual relations with this other person. After reading each part of the scenario, participants wrote a short response about how they would feel and what they would do in the situation. After performing this task, participants completed a brief demographics form and were debriefed.

Two research assistants who were blind to the hypotheses of the study subsequently coded the responses for the presence of particular emotions and behaviors. The raters coded the number of times each participant 1) referenced being angry or wrote a phrase indicating anger (e.g., “I would be pissed off”; “I would be furious”), 2) referenced being sad or hurt or wrote a phrase indicating sadness (e.g., “I would be crying”; “I would feel devastated”), 3) referenced a violent act (e.g., “I would punch him in the face”; “I would push her down to the ground”), and 4) referenced some form of affiliative behavior (e.g., “I would go over to my friends”; “I would go hang out with other people at the party”). Cohen’s Kappa indicated a fair amount of agreement among raters for each measure (anger $\kappa = .51$; sadness $\kappa = .37$; violence $\kappa = .73$; affiliation $\kappa = .57$). Measures were averaged across raters to obtain a single value for each variable for each participant.

Two additional research assistants coded the written responses with regard to whom the violent and affiliative behaviors were directed. Research assistants coded the number of times violent behaviors were directed toward (1) their romantic partner, and (2) the same-sex interloper. To examine whether participants’ affiliative responses were directed toward current sources of friendship versus new people (e.g., a possible new mate), research assistants also coded the number of times affiliative behaviors were directed toward (1) current friends (i.e., someone they already knew) and (2) strangers (i.e., someone they did not already know). Cohen’s Kappa again indicated a fair amount of agreement among raters (violence toward partner $\kappa = .47$; violence toward same-sex offender $\kappa = .58$; affiliation toward friends $\kappa = .47$; although agreement was somewhat lower for affiliation toward strangers $\kappa = .27$). Measures were averaged across raters to obtain a single value for each variable for each participant.

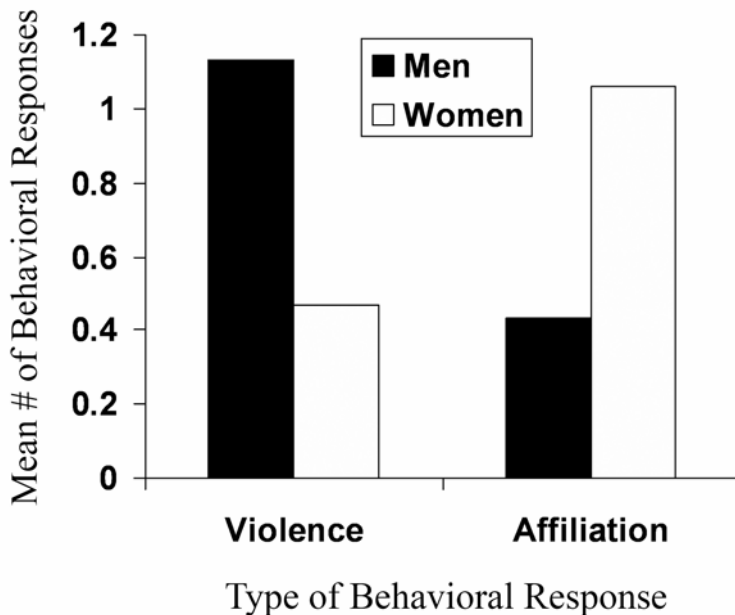
Results

Violence versus Affiliation

An omnibus Analysis of Variance (ANOVA) tested for the hypothesized interaction between participant sex (between-subjects) and number of violent vs. affiliative behaviors imagined (within-subjects). We observed the predicted interaction between participant sex and type of behavioral response imagined, $F(1,67) = 10.87, p = .002, \eta^2 = .14$. Consistent with our hypotheses, men and women were inclined to imagine engaging in significantly different amounts of violence, $t(67) = 2.31, p = .02, \eta^2 = .07$, and affiliative behaviors, $t(67) = -2.43, p = .02, \eta^2 = .08$. As can be seen in Figure 1, men ($M = 1.13, SD = 1.54$) were

more inclined than women ($M = .43$, $SD = .92$) to imagine themselves engaging in violent behaviors, whereas women ($M = 1.06$, $SD = 1.16$) were more inclined than men ($M = .47$, $SD = .82$) to imagine themselves engaging in affiliative behaviors. Moreover, paired samples t-tests revealed that men imagined they would engage in more violent behaviors than affiliative behaviors, $t(33) = 2.35$, $p = .03$, $\eta^2 = .14$, whereas women imagined they would engage in more affiliative behaviors than violent behaviors, $t(34) = -2.32$, $p = .03$, $\eta^2 = .14$.

Figure 1. Mean number of times men and women imagined engaging in violent and affiliative behaviors in response to an infidelity scenario.



Examining the specific targets of these behaviors revealed that men imagined being more violent toward the same-sex offender ($M = 1.06$, $SD = 1.57$) than toward their romantic partner ($M = .43$, $SD = .59$), $t(33) = -2.71$, $p = .01$, $\eta^2 = .18$. Although women tended to be much less violent overall than men, a greater number of violent behaviors imagined by women were directed toward their romantic partner ($M = .35$, $SD = .68$) than toward the same-sex offender ($M = .13$, $SD = .56$), $t(34) = 2.68$, $p = .01$, $\eta^2 = .17$. Table 1 displays the percentages of violent behaviors directed toward the different targets.

For the affiliative behaviors, women imagined affiliating more with current friends ($M = 1.03$, $SD = 1.29$) than with strangers ($M = .41$, $SD = .51$), $t(34) = 2.92$, $p = .006$, $\eta^2 = .20$. Men, on the other hand, imagined engaging in approximately the same number of affiliative behaviors with friends ($M = .54$, $SD = 1.11$) and with strangers ($M = .51$, $SD = .65$), $t(33) = .13$, $p = .90$, $\eta^2 < .01$. Table 2 displays the percentages of affiliative behaviors directed toward friends and strangers.

Table 1. Means and standard deviations of the percentages of imagined violent behaviors directed toward the romantic partner and the same-sex interloper for male and female participants. Participants who did not imagine any violence are not included.

Targets of Violence	Males (<i>n</i> = 22)	Females (<i>n</i> = 16)
Romantic Partner	<i>M</i> = 24% <i>SD</i> = 21%	<i>M</i> = 56% <i>SD</i> = 47%
Same-sex Interloper	<i>M</i> = 58% <i>SD</i> = 27%	<i>M</i> = 6% <i>SD</i> = 16%
Non-specific Violence	<i>M</i> = 18% <i>SD</i> = 26%	<i>M</i> = 38% <i>SD</i> = 49%

Table 2. Means and standard deviations of the percentages of affiliative behaviors directed toward friends and strangers for male and female participants. Participants who did not imagine any affiliative behaviors are not included.

Targets of Affiliation	Males (<i>n</i> = 23)	Females (<i>n</i> = 25)
Friends	<i>M</i> = 41% <i>SD</i> = 43%	<i>M</i> = 62% <i>SD</i> = 37%
Strangers	<i>M</i> = 59% <i>SD</i> = 43%	<i>M</i> = 38% <i>SD</i> = 37%

Anger versus Sadness

Similar analyses tested for the hypothesized interaction between participant sex and emotional responses to infidelity. Analysis revealed a significant main effect of emotion, $F(1,67) = 6.59, p = .01, \eta^2 = .09$, such that participants imagined greater feelings of anger than sadness; however, this was qualified by the predicted interaction between participant sex and type of emotional response, $F(1,67) = 15.57, p < .001, \eta^2 = .19$. Follow up analyses revealed significant sex differences for both emotions. Men expressed greater feelings of anger ($M = 2.44, SD = 1.61$) than women did ($M = 1.71, SD = 1.14$), $t(67) = 2.17, p = .03, \eta^2 = .07$. In contrast, women expressed greater feelings of sadness ($M = 2.02, SD = 1.51$) than men did ($M = .96, SD = 1.24$), $t(67) = -3.21, p < .01, \eta^2 = .13$.

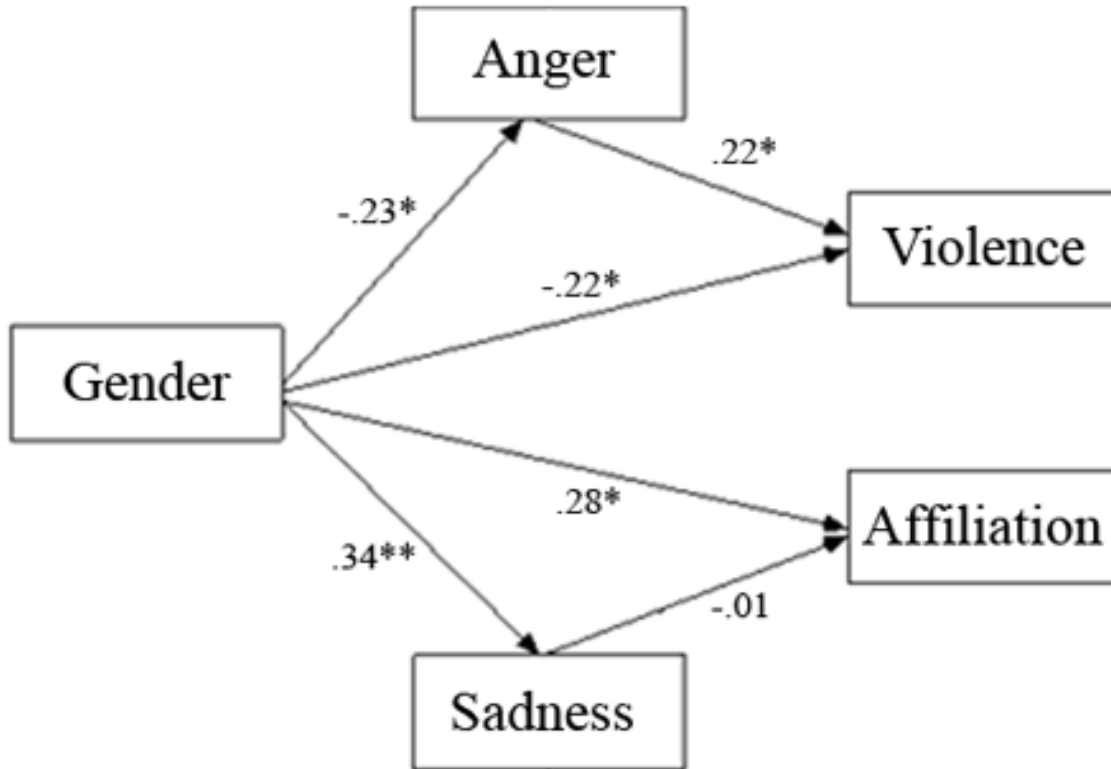
Mediational Analyses

Once it had been determined that participant gender was reliably linked to both the behavioral and emotional responses to infidelity, analyses were conducted to examine the possibility that the emotional responses of anger and sadness might mediate the relationship between participant gender and behavioral responses of violence and affiliation. These analyses were conducted within a structural equation modeling framework (see Fig. 2). A path analytic model with observed variables was constructed using maximum likelihood estimation. Anger and sadness served as variables putatively mediating the relationship between gender (the predictor) and violence and affiliation (the outcomes). Multiple measures of model fit suggested that the model provided excellent fit to the data, $\chi^2(4) = .63, p = .46, \chi^2/df = .91, RMSEA < .01, CFI = 1.00, TLI = 1.05$.

Consistent with previous analyses, gender had a direct effect on violence ($\beta = -.22, p = .059$), affiliation ($\beta = .28, p = .021$), anger ($\beta = -.23, p = .05$), and sadness ($\beta = .34, p =$

.003). We also observed a direct effect of anger on violence ($\beta = .27, p = .058$); however, we did not observe any effect of sadness on affiliation ($\beta = -.01, p = .91$). Additionally, gender had an indirect effect on violence via anger ($\beta = -.051$), but no indirect effect on affiliation via sadness ($\beta = -.005$). Overall, the path model accounted for 12% of the variance in violence, 8% of the variance in affiliation, 5% of the variance in anger, and 11% of the variance in sadness.

Figure 2. Path model of the effects of gender on violence and affiliation via mediators of anger and sadness. Gender was coded as 0 = male, 1 = female. Path coefficients reflect standardized beta weights. * $p < .06$, ** $p < .01$



This path analysis, as well as Sobel tests designed to more directly test the possibility of mediation (Baron and Kenny, 1986), suggest that feelings of anger may have partially mediated the sex difference in propensity for violence after an imagined infidelity, $z = 1.86, p = .06$; however, sadness did not appear to mediate the relationship between gender and affiliative behaviors, $z = .22, p = .82$.

Discussion

Infidelity has played a substantial role in reproductive processes throughout human evolutionary history. Although extra-pair romantic encounters can provide reproductive benefits to the people participating in such encounters (Buss, 2007; Pillsworth and Haselton, 2006; Symons, 1979), those encounters nevertheless present an important adaptive problem for people’s long-term romantic partners.

In the current research, we provide evidence that, in response to a partner's infidelity, men and women are inclined to respond in ways designed to help offset the sex-specific costs. In response to an imagined infidelity, men imagined feeling angrier and engaging in more violent behaviors than women did. Women, in contrast, imagined feeling sadder and engaging in more affiliative behaviors than men did.

Although previous studies have documented males' responses to relationship threat, there has been a relative shortage of empirical studies identifying female responses. The current findings suggest that, for women (more so than for men), romantic infidelity may elicit concerns pertaining to the satisfaction of affiliative goals. Forming and maintaining close relationships is an important goal shared by all people (Baumeister and Leary, 1995). This need for affiliation, however, may be particularly important for women because of the substantial resources and support needed to rear offspring (Taylor et al., 2000). For women, a partner's infidelity indicates that the resources typically provided by the partner are perhaps in jeopardy. Indeed, this is a commonly suggested reason why women (more than men) report greater distress in response to infidelities that indicate a shift in resource allotment (i.e. emotional infidelities) (Buss et al., 1992).

The current study extends previous theory and research by suggesting that, for women, infidelity may not only raise concerns over resource acquisition, but may also precipitate behavioral responses designed to increase the availability of social resources. In response to infidelity, women were especially inclined to seek out sources of compensatory social affiliation, suggesting a tendency to search for alternative sources of support and resources. These affiliative behaviors were targeted especially toward current friends. Although forming new affiliations, such as finding a new romantic partner, could also serve to offset the losses that accompany a partner's infidelity, seeking out current sources of friendship is likely to be a less risky means of gaining support in the short term.

Consistent with previous evidence, the current study indicates that violence may be one means by which men try to offset the costs imposed by an infidelity. Moreover, the propensity for violence was directed primarily toward the romantic rival (cf. Daly and Wilson, 1988; Wilson and Daly, 1996). One potential explanation for this target specificity in violence is that because infidelity can threaten a man's dominance, men may be inclined to aggress toward a male rival in order to reassert his dominance. In addition, cultural norms may prevent men from aggressing against a female partner. This would be consistent with previous research indicating that violence toward women varies as a function of the degree to which such violence is accepted in one's culture (Vandello and Cohen, 2003).

The current study also provides insight into the links between emotional and behavioral responses to infidelity. Men reported more feelings of anger than women did, whereas women reported more feelings of sadness than men did. Moreover, findings indicate that violence in response to infidelity may be partially mediated by the experience of anger. This is consistent with theories suggesting that emotions are designed to promote adaptive behavioral responses to interpersonal challenges and threats (Haselton and Ketelaar, in press; Maner, et al., 2005). Interestingly, sadness did not appear to mediate the propensity for seeking social affiliation. The relationship between emotion and behavior is complex (see Baumeister, Vohs, DeWall, and Zhang, 2007) and the extent to which sadness promotes affiliation-seeking may depend on a number of additional variables such as the perceived risks of seeking out friends vis-à-vis perceptions of one's own social value (Allen and Badcock, 2003).

The current research also provides a relatively novel method for evaluating men's and women's responses to infidelity. Previous studies have predominantly used self-reported responses to Likert-type questionnaire scales. Such measures may constrain people's response options and can be influenced by framing effects (e.g., the tendency to report an emotion that a measure implies ought to be experienced). The free-response format used in the current study permitted relatively more spontaneous and variable responses, providing direct insight into what the participants were actually thinking and feeling.

Several limitations of the current study provide useful directions for future research. To investigate sex differences in responses to infidelity, it was important for us to hold constant the details of the infidelity, and the use of a hypothetical scenario was ideally suited for this purpose. Nevertheless, the current method is still limited by its reliance on an imagined scenario. Although there is no clear reason to suspect systematic differences in imagined versus actual responses to infidelity, studies would benefit from examining responses to actual instances of infidelity.

A second limitation is that we examined only a subset of the emotions and behaviors that might be designed to help offset the social costs of infidelity. The dominance threat that an infidelity inflicts upon men, for example, may increase not only violent behaviors but other dominance-related behaviors such as conspicuous consumption (e.g., Griskevicius, Tybur, Sundie, Cialdini, Miller, and Kenrick, 2007). Additional research is needed to explore further the alternative strategies that men and women may use to offset the costs of partner infidelity. Identification of strategies other than violence could have important implications for preventing cases of infidelity-related partner abuse (cf. Buss and Shackelford, 1997; Daly and Wilson, 1988).

Last, we would be remiss in neglecting the literature on sex differences in responses to different types of infidelities. Many studies suggest that men's and women's reactions to infidelity can depend upon whether the infidelity is primarily sexual or emotional in nature (e.g., Buss et al., 1992; Buunk et al., 1996). The procedure used in the current study was designed to elicit concerns associated with both romantic and sexual infidelity. Yet, one might expect the responses observed in this study to vary as a function of whether the infidelity was primarily emotional versus sexual. One might predict, for example, increased anger and violence among men especially in response to sexual infidelities. In contrast, one might expect increased sadness and affiliative behaviors among women especially when they have suffered an emotional infidelity. Future research would benefit from testing these predictions directly.

Despite these limitations, the current research has noteworthy implications for evolutionary theories of mating. The current study builds upon a sizable literature suggesting that men and women engage in different mating-related strategies, and that these strategies are tied ultimately to the somewhat different challenges faced by the sexes throughout evolutionary history. The current research suggests the presence of sex-specific strategies designed to help offset the costs inflicted by infidelity. Whereas men displayed responses reflecting a tendency toward anger and violence, women instead displayed predominantly affiliative responses. This research adds to a nomological net of data illustrating affective, cognitive, and behavioral responses to partner infidelity, and advances our understanding of the adaptive mechanisms designed to help men and women face challenges associated with romantic betrayal.

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References

- Allen, N.B., and Badcock, P.B.T. (2003). The social risk hypothesis of depressed mood: Evolutionary, psychosocial, and neurobiological perspectives. *Psychological Bulletin*, *129*, 887-913.
- Baron, R., and Kenny, D. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*, 1173-1182.
- Baumeister, R.F., and Leary, M.R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, *117*, 497-529.
- Baumeister, R.F., Vohs, K.D., DeWall, C. N., and Zhang, L. (2007). How emotion shapes behavior: Feedback, anticipation, and reflection, rather than direct causation. *Personality and Social Psychology Review*, *11*, 167-203.
- Becker, D.V., Sagarin, B.J., Guadagno, R.E., Millevoi, A., and Nicastle, L.D. (2004). When the sexes need not differ: Emotional responses to the sexual and emotional aspects of infidelity. *Personal Relationships*, *11*, 529-538.
- Betzig, L. (1989). Causes of conjugal dissolution: A cross-cultural study. *Current Anthropology*, *30*, 654-676.
- Burris, R.P., and Little, A.C. (2006). Effects of partner conception risk phase on male perception of dominance in faces. *Evolution and Human Behavior*, *27*, 297-305.
- Buss, D.M. (1989). Sex differences in human mate preferences: Evolutionary hypotheses tested in 37 cultures. *Behavioral and Brain Sciences*, *12*, 1-49.
- Buss, D.M. (2002). Human mate guarding. *Neuroendocrinology Letters*, *23*, 23-29.
- Buss, D.M. (2007). The evolution of human mating. *Acta Psychologica Sinica*, *39*, 502-512.
- Buss, D.M., Larsen, R.J., Westen, D., and Semmelroth, J. (1992). Sex differences in jealousy: Evolution, physiology, and psychology. *Psychological Science*, *3*, 251-255.
- Buss, D.M., and Shackelford, T.K. (1997). From vigilance to violence: Mate retention tactics in married couples. *Journal of Personality and Social Psychology*, *72*, 346-361.
- Buss, D.M., Shackelford, T.K., and McKibbin, W.F. (2008). The mate retention inventory-short form (MRI-SF). *Personality and Individual Differences*, *44*, 322-334.
- Buunk, B.P., Angleitner, A., Oubaid, V., and Buss, D.M. (1996). Sex differences in jealousy in evolutionary and cultural perspective: Tests from the Netherlands, Germany, and the United States. *Psychological Science*, *7*, 359-363.
- Caporeal, L.R. (1997). The evolution of truly social cognition: The core configuration model. *Personality and Social Psychology Review*, *1*, 276-298.
- Daly, M., and Wilson, M. (1988). *Homicide*. Hawthorne, NY: Aldine de Gruyter.
- Gangestad, S.W., Simpson, J.A., Cousins, A.J., Garver-Apgar, C.E., and Christensen, P.N. (2004). Women's preferences for male behavioral displays change across the menstrual cycle. *Psychological Science*, *15*, 203-206.

- Goetz, A.T., Shackelford, T.K., Platek, S.M., Starratt, V.G., and McKibbin, W.F. (in press). Sperm competition in humans: Implications for male sexual psychology, physiology, anatomy, and behavior. *Annual Review of Sex Research*.
- Geary, D.C., Rumsey, M., Bow-Thomas, C.C., and Hoard, M.K. (1995). Sexual jealousy as a facultative trait: Evidence from the pattern of sex differences in adults from China and the United States. *Ethology and Sociobiology*, *16*, 355-383.
- Greeley, A. (1994). Marital infidelity. *Society*, *31*, 9-13.
- Green, M.C., and Sabini, J. (2006). Gender, socioeconomic status, age, and jealousy: Emotional responses to infidelity in a national sample. *Emotion*, *6*, 330-334.
- Griskevicius, V., Tybur, J.M., Sundie, J.M., Cialdini, R.B., Miller, G.F., and Kenrick, D.T. (2007). Blatant benevolence and conspicuous consumption: When romantic motives elicit strategic costly signals. *Journal of Personality and Social Psychology*, *93*, 85-102.
- Guerrero, L.K., Trost, M.R., and Yoshimura, S.M. (2005). Romantic jealousy: Emotions and communicative responses. *Personal Relationships*, *12*, 233-252.
- Haselton, M.G., and Gangestad, S.W. (2006). Conditional expression of women's desires and men's mate guarding across the ovulatory cycle. *Hormones and Behavior*, *49*, 509-518.
- Haselton, M.G., and Ketelaar, T. (in press). Irrational emotions or emotional wisdom? The evolutionary psychology of emotions and behavior. In J.P. Forgas (Ed.), *Hearts and Minds: Affective Influences on Social Cognition and Behavior*. New York: Psychology Press.
- Helgeson, V.S., and Sharpsteen, D.J. (1987). Perceptions of danger in achievement and affiliation situations: An extension of the Pollack and Gilligan versus Benton et al. debate. *Journal of Personality and Social Psychology*, *53*, 727-733.
- Hess, U., Blairy, S., and Kleck, R.E. (2000). The influence of facial emotion displays, gender, and ethnicity on judgments of dominance and affiliation. *Journal of Nonverbal Behavior*, *24*, 265-283.
- Johnson, R.T., Burk, J.A., and Kirkpatrick, L.A. (2007). Dominance and prestige as differential predictors of aggression and testosterone levels in men. *Evolution and Human Behavior*, *28*, 345-351.
- Laumann, E.O., Gagnon, J.H., Michael, R.T., and Michaels, S. (1994). *The Social Organization of Sexuality: Sexual Practices in the United States*. Chicago: University of Chicago Press.
- Lazarus, R.S. (1991). *Emotion and Adaptation*. New York: Oxford University Press.
- Maner, J.K., Gailliot, M.T., Rouby, D.A., and Miller, S.L. (2007). Can't take my eyes off you: Attentional adhesion to mates and rivals. *Journal of Personality and Social Psychology*, *93*, 389-401.
- Maner, J.K., Kenrick, D.T., Neuberg, S.L., Becker, D. V., Robertson, T., Hofer, B., Delton, A., Butner, J., and Schaller, M. (2005). Functional projection: How fundamental social motives can bias interpersonal perception. *Journal of Personality and Social Psychology*, *88*, 63-78.
- Panskepp, J. (1982). Towards a general psychobiological theory of emotions. *Behavioral and Brain Sciences*, *5*, 407-467.
- Parrott, W.G. (1991). The emotional experiences of envy and jealousy. In P. Salovey (Ed.), *The Psychology of Jealousy and Envy* (pp. 3-30). New York: Guilford.

- Pillsworth, E.G., and Haselton, M.G. (2006). Male sexual attractiveness predicts differential ovulatory shifts in female extra-pair attraction and male mate retention. *Evolution and Human Behavior*, 27, 247-258.
- Puente, S., and Cohen, D. (2003). Jealousy and the meaning (or nonmeaning) of violence. *Personality and Social Psychology Bulletin*, 29, 449-460.
- Sabini, J., and Green, M.C. (2004). Emotional responses to sexual and emotional infidelity: Constants and differences across genders, samples, and methods. *Personality and Social Psychology Bulletin*, 30, 1375-1388.
- Sagarin, B.J., Becker, D.V., Guadagno, R.E., Nicastle, L.D., and Millevoi, A. (2003). Sex differences (and similarities) in jealousy. The moderating influence of infidelity experience and sexual orientation of the infidelity. *Evolution and Human Behavior*, 24, 17-23.
- Shackelford, T.K., Buss, D.M., and Bennett, K. (2002). Forgiveness or breakup: Sex differences in responses to a partner's infidelity. *Cognition and Emotion*, 16, 299-307.
- Shackelford, T.K., and Goetz, A.T. (2007). Adaptation to sperm competition in humans. *Current Directions in Psychological Science*, 16, 47-50.
- Shackelford, T.K., Goetz, A.T., Buss, D.M., Euler, H.A., and Hoier, S. (2005). When we hurt the ones we love: Predicting violence against women from men's mate retention. *Personal Relationships*, 12, 447-463.
- Shackelford, T.K., LeBlanc, G.J., and Drass, E. (2000). Emotional reactions to infidelity. *Cognition and Emotion*, 14, 643-659.
- Sharpsteen, D.J. (1991). The organization of jealousy knowledge: Romantic jealousy as a blended emotion. In P. Salovey (Ed.), *The Psychology of Jealousy and Envy* (pp. 31-51). New York: Guilford.
- Sharpsteen, D.J. (1993). Romantic jealousy as an emotion concept: A prototype analysis. *Journal of Social and Personal Relationships*, 10, 69-82.
- Sharpsteen, D.J., and Kirkpatrick, L.A. (1997). Romantic jealousy and adult romantic attachment. *Journal of Personality and Social Psychology*, 72, 627-640.
- Shaver, P.R., Schwartz, J. Kirson, D., and O'Connor, C. (1987). Emotion knowledge: Further explorations of a prototype approach. *Journal of Personality and Social Psychology*, 52, 1061-1086.
- Smith, R.H., Kim, S.H., and Parrott, W.G. (1988). Envy and jealousy: Semantic problems and experiential distinctions. *Personality and Social Psychology Bulletin*, 14, 401-409.
- Starratt, V.G., Shackelford, T.K., Goetz, A.T., and McKibbin, W.F. (2007). Male mate retention behaviors vary with risk of partner infidelity and sperm competition. *Acta Psychologica Sinica*, 39, 523-527.
- Sugarman, D.B., and Hotaling, G.T. (1989). Dating violence: Prevalence, context, and risk markers. In M.A. Pirog-Good and J.E. Stets (Eds.), *Violence in Dating Relationships: Emerging Social Issues* (pp. 3-32). New York: Praeger.
- Symons, D. (1979). *The Evolution of Human Sexuality*. New York: Oxford.
- Taylor, S.E., Klein, L.C., Lewis, B.P., Gruenewald, T.L., Gurung, R.A.R., and Updegraff, J.A. (2000). Biobehavioral responses to stress in females: Tend-and-befriend, not fight-or-flight. *Psychological Review*, 107, 411-429.
- Vandello, J.A., and Cohen, D. (2003). Male honor and female fidelity: Implicit cultural

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scripts that perpetuate domestic violence. *Journal of Personality and Social Psychology*, 84, 997-1010.

White, G.L., and Mullen, P.E. (1989). *Jealousy: Theory, research, and clinical strategies*. New York: Guilford.

Wilson, M., and Daly, M. (1996). Male sexual proprietariness and violence against wives. *Current Directions in Psychological Science*, 5, 2-7.