

Sex Differences in Jealousy: A Contribution From Attachment Theory

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Abstract

Studies have found that more men than women endorse sexual infidelity as more distressing than emotional infidelity, whereas more women than men endorse emotional infidelity as more distressing than sexual infidelity. Some evolutionary psychologists have proposed that this sex difference can be best conceptualized as reflecting evolution-based differences in parental investment that produce a need for paternity certainty among men and a need for male investment in offspring among women. Nonetheless, a conspicuous subset of men report emotional infidelity as more distressing than sexual infidelity. Current theorizing explains between-sex differences but not within-sex differences. We hypothesized that attachment-style differences may help to explain both between- and within-sex differences in jealousy. As hypothesized, dismissing avoidant participants reported more jealousy regarding sexual than emotional infidelity (64.8%), and secure participants, including secure men, reported more jealousy regarding emotional than sexual infidelity (77.3%), $\chi^2(3, N = 411) = 45.03, p < .001$. A series of sequential logistic regression analyses indicated significant moderation of the sex-jealousy relationship by attachment style. Implications of an attachment perspective are discussed.

Keywords

adult attachment, evolutionary psychology, parental-investment model, sex differences, jealousy

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Buss, Larsen, and Westen (1996) have offered an evolutionary perspective, referred to as the parental-investment model, to explain sex differences in jealousy. They noted that numerous cross-cultural studies have shown that more men than women endorse sexual infidelity as more distressing than emotional infidelity, and more women than men endorse emotional infidelity as more distressing than sexual infidelity (Buss, Larsen, Westen, & Semmelroth, 1992; Buunk, Angleitner, Oubaid, & Buss, 1996; Geary, Rumsey, Bow-Thomas, & Hoard, 1995; Wiederman & Allgeier, 1993). Proponents of the parental-investment model have posited that to maximize evolutionary fitness, men and women have evolved different, and to some extent conflicting, mating strategies (Buss, 1995; Daly & Wilson, 1988; Daly, Wilson, & Weghorst, 1982; Symons, 1979). For example, men strive to perpetuate their genes by impregnating many women, while investing relatively little in rearing any individual offspring. Women, in contrast, benefit from carefully choosing mates who will substantially invest in their offspring's chances for survival.

The parental-investment model proposes that these different mating strategies also result in evolution-based sex differences in jealousy. Because fertilization occurs inside women, women enjoy 100% certainty that their genes are present in

their offspring; men have no such guarantee. Consequently, men, but not women, risk unwittingly investing valuable parenting resources in children to whom they are not genetically related. Male sexual jealousy evolved in response to this problem (Wilson & Daly, 1992). That is, men are more distressed by sexual infidelity than by emotional infidelity, as sexual infidelity increases the risk of investing resources in genetically unrelated offspring, which decreases evolutionary fitness. In contrast, women are more distressed by emotional infidelity than by sexual infidelity, as emotional infidelity increases their risk of being abandoned and losing valuable resources that aid success in rearing offspring. Additionally, Buss et al. (1992) found that men tended to display greater physiological reactivity while imagining a mate's sexual infidelity, and women tended to display greater reactivity while imagining a mate's emotional infidelity. These between-sex differences have been replicated in several countries (Buunk et al., 1996; Geary et al., 1995), and researchers have used this cross-cultural

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consistency as evidence that these differences are evolution based (Buss et al., 1996). In some studies, however, there were notable within-sex differences. For example, the majority of Chinese, Dutch, and German men found emotional infidelity more distressing than sexual infidelity, and American men were equally divided (Buss et al., 1992; Buunk et al., 1996; Geary et al., 1995; Wiederman & Allgeier, 1993). Without evoking additional constructs, a parental-investment perspective on sex differences in jealousy cannot easily explain these important within-sex differences.

Attachment theory, also an evolution-based theory, offers an additional perspective for elucidating possible mechanisms related to sex differences in jealousy. Bowlby (1988) noted that attachment-related behavior in infancy (e.g., clinging, crying, smiling, monitoring caregivers, and developing a preference for a few reliable caregivers) is part of a biobehavioral system that increases the likelihood of protection from predation, comfort during times of stress, and social learning. Central to attachment theory is the concept of internal working models that are formed through repeated transactions with attachment figures. These working models subsequently act as heuristics for relationships and organize personality development.

Extrapolating from research on childhood attachment, Hazan and Shaver (1987) and Bartholomew and Horowitz (1991) conceptualized romantic love as an attachment process and used Ainsworth, Blehar, Waters, and Wall's (1978) infant attachment patterns as the basis for a self-report measure of adult attachment. Subsequent studies have demonstrated that the attachment styles of adults are consistent with their self-reported relationship histories (Levy, Blatt, & Shaver, 1998) and that relationship experiences dramatically influence individuals' propensities to trust others (Shaver & Hazan, 1993). Additionally, although there are no sex differences in childhood attachment, consistent sex differences emerge by adulthood, and these may help explain both within- and between-sex differences in jealousy. More men than women have an insecure, dismissing avoidant attachment style (Bartholomew & Horowitz, 1991; Levy et al., 1998). Dismissing individuals attempt to minimize or constrict emotional experience, deny needs for intimacy, are highly invested in autonomy, and are more sexually promiscuous than individuals who have other attachment styles (Bartholomew & Horowitz, 1991; Brennan & Shaver, 1995; Simpson, 1990). Rather than being considered an indicator of real autonomy, this compulsive self-reliance is regarded as defensive and protective against unconscious feelings of vulnerability (Bowlby, 1988).

The Present Study

We propose that the replicable sex difference in emotional and sexual jealousy covaries with, but is not exclusively caused by, biological sex. Rather, we propose that this difference is also a function of attachment style. Thus, our first hypothesis, consistent with the parental-investment model, is that there is a significant difference between men and women in which type

of jealousy is more distressing. Our second hypothesis is that these significant between-group differences in jealousy are a function of differences in attachment style. Specifically, we propose that dismissing individuals will report that sexual infidelity is more troubling than emotional infidelity and that secure individuals will report that emotional infidelity is more troubling than sexual infidelity.

Our hypothesis that dismissing individuals find sexual infidelity more distressing is based on findings showing that a greater percentage of dismissing individuals, compared with those who have other attachment styles, tend to be more concerned with the sexual aspects of relationships than with the emotional intimacy aspects of relationships (Schachner & Shaver, 2004). Additionally, dismissing men report a short-term, low-investment, exploitive sexual strategy that includes engaging in sexual behavior to regulate negative affect and to control and coerce other individuals (Davis, Shaver, & Vernon, 2004; Levy, 2000). Furthermore, research has shown that dismissing individuals are more likely than others to engage in a defensive projection of negative information about the self, which also seems to serve the secondary purpose of maintaining interpersonal distance (Mikulincer & Horesh, 1999). Taking these points together, we predicted that dismissing individuals would be more concerned about their partner's sexual investments than their partner's emotional investments, and thus that differences in jealousy that appear to be rooted in sex differences would be moderated by differences in attachment style. We also predicted that the attachment-related difference in jealousy would be significant for both men and women separately.

Method

Participants

Participants were 416 (99 men and 317 women) English-speaking undergraduate students enrolled in introductory psychology classes at two New York City colleges. Participants were voluntarily tested during class periods. Ages ranged from 18 to 55 years ($M = 26.6$, $SD = 7.5$; $Mdn = 24.0$, mode = 21). Twelve participants did not indicate their ethnicity; of the remaining 404 students, 153 (37.9%) were Latino, 141 (34.9%) were African American, 93 (23.0%) were Caucasian, 5 (1.2%) were Asian, and 5 (1.2%) were Middle Eastern. Participants were predominately Catholic (36.1%) and Protestant (30.1%), and 306 (73.6%) were single.

Measures

To measure attachment style, we used the Relationship Questionnaire (Bartholomew & Horowitz, 1991). This one-page questionnaire asks subjects to choose which of four vignettes best characterizes their attitude toward romantic relationships. Each vignette corresponds to a different attachment style: secure, fearful, preoccupied, and dismissing.

We measured jealousy type (i.e., whether sexual or emotional infidelity is more distressing) with the Buss Infidelity Questionnaire (Buss et al., 1992). This brief questionnaire asks subjects to reflect on a present or past romantic relationship and then indicate which of the following two events would distress them more: (a) their partner having passionate sexual intercourse with another person or (b) their partner forming a deep emotional attachment to another person.

Results

Association between sex and jealousy type

In a large-sample study, Buss et al. (1992) found an association between sex and type of jealousy, and the present study replicated this finding: More men than women endorsed sexual infidelity as more distressing than emotional infidelity (men: 53.5%; women: 24.3%), and more women than men endorsed emotional infidelity as more distressing than sexual infidelity (women: 75.7%; men: 46.5%). This difference was significant, $\chi^2(1, N = 416) = 29.93, p < .001$.

Association between sex and attachment style

We also examined whether there were sex differences in attachment style. Previous studies using self-report and interview measures have found significant sex differences in the distribution of attachment types—typically in the dismissing category: Men are more likely than women to endorse dismissing attachment (Adams, Sheldon-Keller, & West, 1995; Bakermans-Kranenburg & van IJzendoorn, 2009; Brennan, Shaver, & Tobey, 1991; Shaver et al., 1996). We also found a significant sex difference in the distribution of attachment types, $\chi^2(3, N = 411) = 10.67, p < .01$. Men were more likely than women to endorse dismissing attachment, and women

were slightly more likely than men to endorse fearful avoidant attachment.

Association between attachment style and jealousy type

The main hypothesis of this study was that sex differences in jealousy are moderated by attachment style. We hypothesized that dismissing participants, who are more likely to be male than female, tend to report greater jealousy regarding sexual infidelity than regarding emotional infidelity, and that secure participants, including secure men, tend to report more jealousy regarding emotional infidelity than regarding sexual infidelity. Our hypothesis was confirmed; 77.3% of securely attached participants, 73.1% of fearful participants, and 75.9% of preoccupied participants endorsed emotional infidelity as more distressful, whereas 64.8% of dismissing participants endorsed sexual infidelity as more distressing. These differences were significant, $\chi^2(3, N = 416) = 45.03, p < .001$.

Next, as shown in Figure 1, we explored the association between attachment style and jealousy type within each sex. The effect was significant for both men and women, $\chi^2(3, N = 99) = 27.84, p < .001$, and $\chi^2(3, N = 312) = 16.29, p < .001$, respectively.

We computed odds ratios (ORs) to evaluate the specific effects of sex and attachment style on jealousy. Overall, men were between 3 and 4 times ($OR = 3.58$) more likely than women to report greater sexual than emotional jealousy, $\chi^2(1, N = 411) = 29.71, p < .001$. When odds ratios comparing men and women were computed separately by attachment style, the sex difference in jealousy was reduced to nonsignificance for secure and preoccupied individuals (simple chi-square analysis). The pattern of sex differences in jealousy was dramatically heightened, however, for the fearful and the dismissing styles, with fearful men being roughly 5 times more likely than

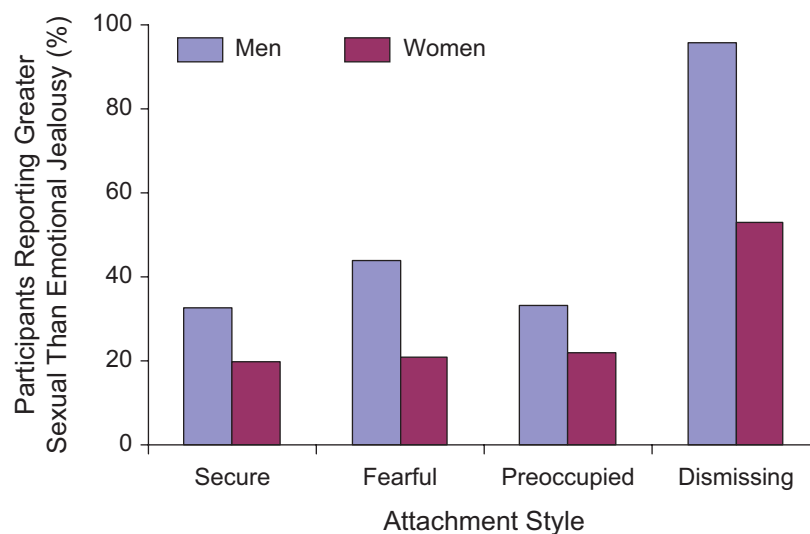


Fig. 1. Percentage of male and female respondents who were more distressed by sexual than by emotional infidelity, as a function of attachment style.

fearful women to report greater sexual than emotional jealousy ($OR = 5.17$), $\chi^2(1, N = 119) = 11.06, p < .001$, and dismissing men being 26 times more likely than dismissing women to report greater sexual than emotional jealousy ($OR = 26.18$), $\chi^2(1, N = 71) = 16.48, p < .001$. The Mantel-Haenszel test showed that the odds ratios, taken together, were significantly greater than 1, consistent with a main effect of sex on jealousy type, $\chi^2(1, N = 411) = 24.07, p < .001$. However, the Breslow-Day test suggested significant heterogeneity among the stratified odds ratios, $\chi^2(3, N = 411) = 8.03, p < .05$, consistent with a moderating effect of attachment style on the relationship between sex and jealousy type.

Odds-ratio analysis also showed the importance of attachment style overall and within each sex, especially with regard to secure versus dismissing styles. Dismissing women, for example, were roughly 4 times more likely than their secure counterparts to report greater sexual than emotional jealousy ($OR = 3.87$), $\chi^2(1, N = 166) = 13.82, p < .001$, and dismissing men were nearly 50 times more likely than secure men to report greater sexual than emotional jealousy ($OR = 49.71$), $\chi^2(1, N = 68) = 25.81, p < .001$. Simple chi-square analyses showed a significant relationship between attachment style and jealousy for both women, $\chi^2(3, N = 312) = 16.29, p < .001$, and men, $\chi^2(3, N = 99) = 27.84, p < .001$.

In order to determine the relative strength of effect of each variable, as well as the significance of the moderating effect, we performed a series of sequential logistic regression analyses. The results of these analyses are presented in Table 1. Sex and attachment style were significant predictors of jealousy individually; in addition, each variable was a significant predictor when the effects of the other variable were accounted for, which indicates that the two variables had independent main effects (see Series 1 and Series 2 in the table). The interaction term led to significant improvement in the model, which suggests significant moderation of the sex-jealousy relationship by attachment style. The full model containing both variables and the interaction term was statistically reliable when

compared with a constant-only model, $\chi^2(7, N = 411) = 75.70, p < .001$,¹ and performed well, correctly classifying 75% of individuals according to jealousy type.

Discussion

Our findings suggest that sex differences in jealousy may be more complex and nuanced than parental-investment models imply (Buss et al., 1992, 1996). We replicated Buss and his colleagues' findings that men are more likely than women to endorse sexual infidelity as more distressing than emotional infidelity; however, we also found that adult attachment styles were strongly related to which type of infidelity elicited more jealousy. Secure individuals, including secure men, tended to report emotional infidelity as more distressing, whereas dismissing participants, especially dismissing men, but also dismissing women, were more likely to find sexual infidelity more upsetting. Thus, we found that sex and attachment style made significant, unique, and interactive contributions to the distress caused by sexual and emotional infidelity.

These findings imply that the psychological and cultural-environmental mechanisms underlying sex differences in jealousy may have greater roles than previously recognized and suggest that jealousy is more multiply determined than previously hypothesized. Additionally, an attachment explanation has important implications for prevention of, and intervention in, violence connected to sexual jealousy. The fact that male sexual jealousy has been implicated as the leading cause of spouse battering and homicide across many cultures (Daly & Wilson, 1988) highlights the importance of understanding the dynamics of sexual jealousy. An attachment perspective offers an understanding of jealousy that is rooted in the quality of internal working models of past and current interpersonal relationships, thus suggesting ways of reducing and preventing sexual jealousy in both men and women through promoting secure attachment relationships.

Our findings also have implications for how investigators approach sex differences research. Because men and women differ in a multitude of ways, and because alternative explanations can be generated to explain nearly any difference found, approaches that simply examine differences between men and women can be limiting. Our study highlights the value of more nuanced approaches that investigate specific attributes that differ both between sexes and within sexes. Approaches akin to ours could lead to greater progress in understanding sex differences than studies focused on merely observing differences between men and women.

Limitations and questions for future research

One limitation of our study is that the Buss Infidelity Questionnaire (Buss et al., 1992) asks participants to imagine whether sexual or emotional infidelity would be more distressing, and there is no way to assess whether responses would generalize to "real life" experiences with jealousy. The forced-choice

Table 1. Sequential Logistic Regression Analyses of Sex and Attachment Style as Predictors of Jealousy Type

Predictor	Change in log-likelihood	χ^2 change	df	p
Series 1 sequences				
1. Constant only (log-likelihood = -256.71)	0.00			
2. Sex	14.12	28.24	1	< .001*
3. Sex, attachment style	19.10	38.20	3	< .001*
Series 2 sequences				
1. Constant only	0.00			
2. Attachment style	21.01	42.02	3	< .001*
3. Attachment style, sex	12.21	24.42	1	< .001*
4. Attachment style, sex, Attachment Style \times Sex	4.63	9.26	3	.026*

* $p < .05$.

nature of the questions is also a notable limitation. A related limitation is that although self-report measures of adult romantic attachment have demonstrated considerable reliability and construct validity (Shaver & Hazan, 1993), multi-item and interview measures of attachment would provide more precision.

Additionally, we cannot be sure that biological sex does not cause men and women to react differently to nonoptimal caregiving and thus develop different insecure attachment styles, which are then related to jealousy. Although we found sex differences in jealousy in all attachment groups, these differences were small within the secure and preoccupied attachment groups and highly pronounced within the dismissing attachment group. Thus, our study raises some interesting and important questions for future research. For example, does secure attachment override existing biological sex differences in jealousy? Or do social learning environments that produce dismissing attachment result in biological effects being exaggerated? Would adding physiological measures to self-report measures of jealousy yield different results? For example, would dismissing men demonstrate physiological reactivity to both sexual- and emotional-infidelity scenarios, thereby revealing their defensiveness around issues of emotional intimacy?

Conclusion

Although between-sex differences in jealousy clearly exist, the within-sex differences suggest the existence of additional processes beyond those proposed by the parental-investment model. Our data suggest that attachment style contributes to jealousy in predictable ways. We believe that an attachment-theory perspective contributes to understanding important dynamics of sexual jealousy by explaining within-sex differences while simultaneously elucidating a large portion of the between-sex differences. Placing jealousy within an attachment-theory perspective highlights the value of taking a more nuanced approach than earlier research did, points to new research possibilities, and suggests that promoting secure attachment may be an effective means of reducing sexual jealousy.

Declaration of Conflicting Interests

The authors declared that they had no conflicts of interests with respect to their authorship and/or the publication of this article.

Note

1. Note that the degrees of freedom for the omnibus analysis reflects dummy-coding of variables with more than two categories.

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