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Original Article

Sex Differences in Jealousy in Response to Actual Infidelity

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Abstract: The present studies address two criticisms of the theory of evolved sex differences in jealousy: (a) that the sex difference in jealousy emerges only in response to hypothetical infidelity scenarios, and (b) that the sex difference emerges only using forced-choice measures. In two separate studies, one a paper-and-pencil survey with a student sample and the other a web-based survey targeting a non-student sample, men and women showed significant sex differences in jealousy in response to *actual* infidelity experiences; men experienced more jealousy in response to the sexual aspects of an actual infidelity, whereas women experienced more jealousy in response to the emotional aspects of the infidelity. Sex differences emerged using both continuous measures of jealousy as well as the traditional forced-choice measure. Overall, our results demonstrate that sex differences in jealousy are not limited to responses to hypothetical infidelity scenarios; they also emerge in response to actual infidelity experiences.

Keywords: Infidelity, jealousy, sex differences.

Introduction

According to the theory of evolved sex differences in jealousy (Buss, Larsen, Westen, and Semmelroth, 1992; Daly, Wilson, and Weghorst, 1982; Symons, 1979), ancestral women's challenge of ensuring paternal investment exerted selective pressures that increased women's jealousy in response to emotional infidelity, whereas ancestral men's challenge of paternal uncertainty exerted selective pressures that increased men's jealousy in response to sexual infidelity. The majority of studies testing this theory have examined men and women's responses to hypothetical infidelity scenarios in which participants must choose which type of infidelity (sexual or emotional) is more distressing or upsetting. Although studies using this forced-choice methodology generally find that a higher proportion of men than women choose the sexual infidelity as more distressing (Harris, 2003), reliance on this methodology has led to a number of serious

challenges, including: (a) that sex differences in jealousy are not replicable with continuous measures of jealousy, and (b) that sex differences in jealousy do not emerge when people report their reactions to actual infidelity experiences.

Sex Differences in Jealousy using Continuous Measures

The majority of studies examining sex differences in jealousy have used the forced-choice methodology (Buss et al., 1992; Harris, 2003). This methodology was favored because both men and women were expected to have strong jealous reactions to sexual and emotional infidelity due to their co-occurrence throughout history, and the forced-choice method allows for a cleaner separation of reactions to both types of infidelity. However, a number of critics have argued that sex differences in jealousy are not replicable with continuous measures of jealousy (DeSteno, Bartlett, Braverman, and Salovey, 2002; DeSteno and Salovey, 1996; Harris, 2003). Although Sagarin (2005) noted that some studies have found significant sex differences using continuous measures (Sagarin, Becker, Guadagno, Nicastle, and Millevoi, 2003; Sheets and Wolfe, 2001; Wiederman and Allgeier, 1993; See also Pietrzak, Laird, Stevens, and Thompson, 2002), Harris (2005) responded that other studies, including one with a large random sample (Green and Sabini, 2004), failed to find significant sex differences.

The failure to find sex differences in a large random sample (Green and Sabini, 2004) is particularly troubling for the theory of evolved sex differences in jealousy. But an examination of Green and Sabini's data (with permission of the first author; Green, personal communication, March 11, 2005) suggests that the lack of a significant sex difference might have stemmed from a ceiling effect in the data. Participants were asked to imagine that their romantic partner has become interested in someone else. They were then asked how distressed or upset they would be when imagining an emotional infidelity. On a seven-point scale with 1 labeled *Not at all*, 4 labeled *Moderately*, and 7 labeled *Very*, 56.7% of men and 75.0% of women responded with a 7. Similarly, when asked how distressed or upset they would be when imagining a sexual infidelity, 72.2% of men and 85.1% of women responded with a 7.

Because a partner's infidelity will typically elicit an intense jealous reaction, the use of "very" as an upper anchor label may have effectively condensed the usable portion of the scale. Indeed, in Green and Sabini's (2004) sample, over 95% of participants responded using the top four points on their seven point scale (the majority using the uppermost point). To remedy this, the present studies used a jealousy scale adapted from Harris (2002) with a lower anchor labeled *Not at all*, and an upper anchor labeled *Completely*.

Sex Differences in Jealousy in Response to Actual Infidelity

Harris (2002) argued that responses to hypothetical infidelity scenarios might not align with responses to actual infidelity experiences. As evidence, Harris replicated the sex differences using the traditional forced-choice hypothetical questions, but when participants were asked about their reactions to actual infidelity, both men and women reported that they focused on the emotional aspects of the infidelity more than the sexual aspects. However, as discussed in Sagarin (2005), Harris' change from hypothetical

infidelity scenarios to actual infidelity experiences was confounded with a change in the construct being measured (participants reported their *distress* or *upset* in response to hypothetical infidelity scenarios, whereas they reported their *focus* in response to actual infidelity experiences). Distress or upset is an affective response whereas focus is primarily a cognitive response.

Berman and Frazier (2005) partially explored this issue using a forced choice item that asked past victims of infidelity whether they were more distressed or upset by their “partner’s emotional attachment to the other person” or their “partner’s enjoying sexual activities with that other person” (p. 1621). They replicated the sex differences using the traditional forced-choice hypothetical questions, but when the questions were asked about actual infidelity they found no difference between the sexes. However, Berman and Frazier (2005) used a different method of identifying past victims of infidelity that yielded a much smaller proportion of participants identified as experiencing infidelity. Specifically, whereas Harris (2002) found that 65.3% of heterosexual women and 58.3% of heterosexual men in her sample said yes to the question “Have you had any experiences in which someone you were romantically involved with ‘cheated on’ you?” (p. 9), Berman and Frazier (2005) found that 16.7% of women and 13.1% of men in their sample indicated that “a romantic partner had been unfaithful to them sometime in the past year” (p. 1620) according to a specific definition of infidelity (“a romantic, sexual, or emotional relationship with someone other than the primary partner that was kept secret from that partner and that would have been unacceptable to the partner if s/he had known,” p. 1620). This led to an N of 64 in the critical χ^2 analysis—a very small sample size for a confident interpretation of a null effect.

The present studies used Harris’s (2002) method of identifying past victims of infidelity and found proportions of past victims similar to Harris (2002).

Current Studies

In two studies, we examined whether a sex difference in jealousy emerges in response to actual experience with infidelity using both continuous and forced-choice measures. In Study One, we administered a paper survey to undergraduate students. In Study Two, students recruited working adults to participate in a web-based survey.

Study One

Methods

Participants

Two hundred fifteen students participated in this experiment (53 men, 162 women, $M_{age} = 21.7$ years, $SD = 4.04$). Of these participants, 24 men (45%) and 86 women (53%) had been cheated on. Nine participants who self identified as non-heterosexual were excluded from the analyses.¹

Procedure

Students completed a three-page survey in class for extra credit. The first page contained demographics and asked whether the participant had ever been cheated on. If the participant had been cheated on they proceeded to the second page, otherwise the participant skipped to the third page. The second page asked how emotionally distressed the participant was by the infidelity, how jealous they were in response to the emotional and sexual aspects of the infidelity (answered on seven-point scales with end points labeled “not at all” and “completely”), a forced-choice jealousy item (“Which aspect of the infidelity made you more jealous?” with options “Sexual” and “Emotional”), how much the participant focused on the emotional and sexual aspects (answered on seven-point scales with end points labeled “not at all” and “completely”), and a forced-choice focus item (“Which aspect of the infidelity did you focus on?” with options “Sexual” and “Emotional”). The third page contained Buss et al.’s (1992) hypothetical infidelity scenario.

Results and Discussion

When recalling actual experiences with infidelity, men reported greater jealousy in response to the sexual aspects ($M = 4.61$, $SD = 1.99$) than the emotional aspects ($M = 4.26$, $SD = 2.11$) of the infidelity, whereas women reported greater jealousy in response to the emotional aspects ($M = 5.51$, $SD = 1.44$) than the sexual aspects ($M = 5.11$, $SD = 1.79$) of the infidelity, $F_{interaction}(1, 102) = 4.41$, $p = .038$, which represents a moderate effect ($d = .50$). There was also a main effect of gender in which women reported greater levels of jealousy ($M = 5.31$, $SD = 1.61$) than men ($M = 4.44$, $SD = 2.06$), $F(1, 102) = 5.65$, $p = .019$, which represents a moderate effect ($d = .56$).² The sex difference also emerged on the forced-choice measure: 48% of men compared to 23% of women reported that the sexual aspect of the infidelity made them more jealous, $\chi^2(1, N = 102) = 5.49$, $p = .019$.

The sex difference was attenuated in response to the focus items derived from Harris (2002). Men focused more on the sexual aspects ($M = 4.74$, $SD = 1.60$) than emotional aspects ($M = 4.13$, $SD = 1.91$), whereas women focused more on the emotional aspects ($M = 5.16$, $SD = 1.53$) than sexual aspects ($M = 4.89$, $SD = 1.59$), $F_{interaction}(1, 102) = 3.83$, $p = .053$, which represents a small to moderate effect size ($d = .46$). There was also a marginal main effect of gender in which women reported focusing more on the infidelity ($M = 5.03$, $SD = 1.55$) than men ($M = 4.44$, $SD = 1.76$), $F(1, 102) = 3.73$, $p = .056$, which represents a small to moderate effect size ($d = .45$). No sex differences emerged in responses to the forced choice question: 52% of men compared to 35% of women reported that they focused more on the sexual aspect of the infidelity, $\chi^2(1, N = 103) = 2.22$, $p = .136$.

When thinking about a hypothetical infidelity, men reported greater jealousy in response to the sexual aspects ($M = 5.34$, $SD = 1.60$) than the emotional aspects ($M = 5.22$, $SD = 1.43$) of the imagined infidelity, whereas women reported greater jealousy in response to the emotional aspects ($M = 6.14$, $SD = 1.06$) than the sexual aspects ($M = 5.30$, $SD = 1.51$) of the imagined infidelity, $F_{interaction}(1, 199) = 15.40$, $p < .001$, which represents a moderate effect ($d = .64$).³ There was also a main effect of gender in which women reported greater levels of jealousy ($M = 5.72$, $SD = 1.34$) than men ($M = 5.38$, $SD = 1.52$), $F(1, 102) = 5.67$, $p = .018$, which represents a small to moderate effect size ($d =$

.38). The sex difference also emerged on the forced-choice measure: 53% of men compared to 7% of women reported that the sexual aspect of the infidelity made them more jealous, $\chi^2(1, N = 196) = 44.50, p < .001$.

Study Two was designed to replicate these findings using a different method of data collection and a non-student sample.

Study Two

Methods

Participants

One hundred and thirty six people participated in this experiment (40 men, 96 women, $M_{age} = 25.88, SD = 9.36$). Of these participants, 20 men (50%) and 49 women (51%) had been cheated on. Sixty-three participants (46%) were working adults, 65 were students (48%, including participants who dual-identified as worker and students), and 8 did not identify their profession (6%). Five participants who reported being familiar with the theory of evolved sex differences in jealousy and six participants who self-identified as non-heterosexual were excluded from data analyses.

Procedure

Psychology undergraduates recruited working adults to participate in a web-based survey (adapted from Study One). Recruiters were given the web address of the survey and were offered extra credit points for recruiting up to three people to participate in the study. The web survey included a field for participants to report the person who should receive credit for their participation. To ensure anonymity of responses, this name was submitted to the researchers separately from the rest of the survey responses. Jealousy and focus questions, as well as emotion and sex questions were counterbalanced. Continuous measures always preceded forced-choice measures. This was done to ensure that participants would not use their responses from the forced choice measure in deciding how to respond to the continuous items.

Results and Discussion

Consistent with Study One, when recalling actual experiences with infidelity, men reported greater jealousy in response to the sexual aspects ($M = 4.94, SD = 2.16$) than the emotional aspects ($M = 4.50, SD = 2.18$) of the infidelity, whereas women reported greater jealousy in response to the emotional aspects ($M = 5.44, SD = 1.94$) than the sexual aspects ($M = 4.58, SD = 2.11$) of the infidelity, $F_{interaction}(1, 59) = 6.45, p = .014$, which represents a moderate to large effect size ($d = .73$). There was no main effect of gender (Men: $M = 4.72, SD = 2.17$; Women: $M = 5.01, SD = 2.03$), $F(1, 59) = .31, p = .580, d = .15$. On the forced choice measure, 61% of men compared to 28% of women reported that the sexual aspect of the infidelity made them more jealous, $\chi^2(1, N = 58) = 5.96, p = .015$.

Because one of the primary goals of Study Two was to examine sex differences in jealousy in response to actual infidelity in a non-student sample, we ran an additional set of analyses using only the working adult portion of the sample. The same pattern of results emerged. When recalling actual experiences with infidelity, men reported greater jealousy in response to the sexual aspects ($M = 4.73$, $SD = 2.28$) than the emotional aspects ($M = 3.55$, $SD = 1.86$) of the infidelity, whereas women reported greater jealousy in response to the emotional aspects ($M = 5.16$, $SD = 2.17$) than the sexual aspects ($M = 4.47$, $SD = 2.24$) of the infidelity, $F_{interaction}(1, 28) = 6.30$, $p = .018$, which represents a large effect size ($d = .93$). There was no main effect of gender (Men: $M = 4.14$, $SD = 2.07$; Women: $M = 4.81$, $SD = 2.22$), $F(1, 28) = .85$, $p = .360$, $d = .32$. On the forced choice measure, 83% of men compared to 29% of women reported that the sexual aspect of the infidelity made them more jealous, $\chi^2(1, N = 28) = 5.038$, $p = .025$.

Also consistent with Study One, men focused more on the sexual aspects ($M = 4.83$, $SD = 2.07$) than the emotional aspects ($M = 4.50$, $SD = 2.04$) of the infidelity, whereas women focused more on the emotional aspects ($M = 5.86$, $SD = 1.57$) than the sexual aspects ($M = 5.10$, $SD = 1.67$), $F_{interaction}(1, 58) = 4.62$, $p = .036$, which is a moderate effect ($d = .60$). There was a main effect of gender where women reported focusing more on the infidelity ($M = 5.48$, $SD = 1.62$) than men ($M = 4.67$, $SD = 2.05$), $F(1, 58) = 3.73$, $p = .036$, which is a moderate effect ($d = .54$). A marginal difference emerged on forced choice question: 61% of men compared to 36% of women reported that they focused more on the sexual aspect of the infidelity, $\chi^2(1, N = 60) = 3.310$, $p = .069$.

For participants who had not been cheated on, men reported greater jealousy in response to the sexual aspects ($M = 6.40$, $SD = 1.60$) than the emotional aspects ($M = 6.05$, $SD = 1.36$) of an imagined infidelity, whereas women reported greater jealousy in response to the emotional aspects ($M = 6.33$, $SD = 0.91$) than the sexual aspects ($M = 6.16$, $SD = 1.13$) of the imagined infidelity, resulting in a marginal interaction, $F_{interaction}(1, 63) = 3.07$, $p = .085$, which represents a near moderate effect size ($d = .46$). There was no main effect of gender in, $F(1, 61) = 0.01$, $p > .15$, $d = .02$. The sex difference also emerged on the forced-choice measure: 53% of men compared to 16% of women reported that the sexual aspect of the infidelity made them more jealous, $\chi^2(1, N = 64) = 7.21$, $p = .007$.

Discussion

The present research addresses two criticisms raised by Harris (2002; 2003; 2005): (a) that the sex difference in jealousy emerges only in response to hypothetical infidelity scenarios, and (b) that the sex difference in jealousy emerges only using forced-choice measures. In two separate studies, one a paper-and-pencil survey with a student sample and the other a web-based survey targeting a non-student sample, men and women showed significant sex differences in jealousy in response to actual infidelity experiences. Furthermore, these sex differences emerged using both continuous measures of jealousy as well as the traditional forced-choice measure. Moreover, these studies showed that the sex differences are not attenuated in an adult sample.

The present results also withstand an additional concern raised by Harris (2005). Specifically, Harris (2005) argued that interactions on ordinal scales are interpretable

only if they include a sign change or a cross-over pattern. In Study One, the critical interaction showed a sign change with men reporting greater jealousy in response to the sexual aspects of the infidelity than the emotional aspects and women reporting greater jealousy in response to the emotional aspects of the infidelity than the sexual aspects. In Study Two, this sign change occurred within the context of a cross-over interaction. Thus the interactions in both studies are interpretable despite the use of ordinal jealousy scales.

Smaller, often marginal or non-significant sex differences emerged for the focus items. These results help to resolve the otherwise contradictory findings of Harris (2002), suggesting that the lack of a sex difference found when Harris (2002) asked participants how much they focused on each aspect of the infidelity stemmed from Harris's use of the term "focus" instead of "jealousy."

The present studies did not assess whether the infidelities experienced by participants were purely sexual, purely emotional, or both sexual and emotional. However, for three reasons, it seems unlikely that systematic differences in the type of infidelity experienced by men and women could account for the observed sex differences in jealousy. First, Berman and Frazier (2005) investigated this issue and did not find a sex difference in the types of infidelity experienced by men and women. Second, in our studies, very few participants (6%) indicated that the sexual or emotional aspects of the infidelity caused no jealousy, suggesting that the infidelities experienced by our participants included both sexual and emotional components (see Buss, 2000, for a discussion of the co-occurrence of sexual and emotional infidelity). Third, given men's greater predisposition than women toward short-term sexual liaisons (Buss and Schmitt, 1993), women would probably be more likely than men to have been the victims of purely sexual infidelities. Nevertheless, women reported greater jealousy in response to the emotional aspects of the infidelities than the sexual aspects.

A large number of studies have examined sex differences in jealousy using hypothetical infidelity scenarios, and a growing number have used retrospective reports of actual infidelity. Future research could profitably expand beyond these traditional methods of research in this domain. One promising option would be to create jealousy-provoking situations in a laboratory and examine the jealous reactions. Jealousy could be provoked in existing couples through the flirtatious advances of a confederate, or non-coupled participants could be bonded through guided self-disclosure (Melinat, 1991) and then the bond could be threatened by a rival. Of course, these methodologies raise numerous ethical and practical challenges, most importantly ensuring the welfare of the participants and their relationships. But if these challenges could be overcome, such methodologies could provide a valuable opportunity to examine real jealousy as it occurs.

In conclusion, our results demonstrate that sex differences in jealousy are not limited to responses to hypothetical infidelity scenarios. Sex differences also emerge in response to actual infidelity experiences.

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Footnotes

¹ One participant failed to complete the focus forced choice item, and two participants failed to complete the jealous forced-choice item, and they are not included in the respective analyses.

² Some authors (Harris, 2005) have argued that main effects are relevant in examining sex differences in jealousy, whereas other authors (Sagarin, 2005) have argued that the interaction is the only relevant effect. As this is a continuing debate in the literature, we have presented the full analyses to allow readers to make their own determinations.

³ In Study One, all participants (regardless of their infidelity experience) responded to the hypothetical infidelity scenario. As a result, the analysis of responses to the hypothetical infidelity scenario includes more participants than the analysis of responses to the actual infidelity experiences. In Study Two, only participants who had never been cheated on responded to the hypothetical infidelity scenario.