Heterosexual couples and homosexual rivals:
Sex differences in romantic jealousy when the rival is the same sex as your partner

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Abstract

Research testing hypotheses derived from evolutionary psychology about sex differences in romantic jealousy has been hampered by a confirmationist hypothesis testing strategy. We report three studies conducted in Austria and Australia that employ a conditional hypothesis testing strategy to investigate variations in sex differences in jealousy under different relationship conditions, namely opposite-sex and same-sex infidelity among heterosexual individuals. In Study 1, heterosexual women found a same-sex sexual infidelity more aversive than heterosexual men did, and this difference persisted after adjusting for other likely predictors of this difference. In Studies 2 and 3, enhanced sexual jealousy in heterosexual men was not observed when the rival was the same sex as his partner. This effect was reversed for women, who were more distressed by sexual versus emotional infidelity when the rival was the same sex as her partner. An explanation for this set of findings, based on sex differences in sexual and attachment motivation, is proposed.

Keywords: sex differences; jealousy; infidelity; sexual orientation; heterosexuality; homosexuality

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Sexuality and attachment/caregiving are the two main motivational systems that govern human romantic relationships (Mikulincer & Goodman, 2006). Both of these motivational systems have evolved in humans and other mammals to ensure reproduction and care of offspring (Fraley, Brumbaugh, & Marks, 2005). It is not surprising then that jealousy, which arises when there is a threat to a relationship, has been conceptualized as having two broad dimensions associated with either a threat to the sexual or the attachment dimension of the relationship (Buss, Larsen, Westen, & Semmelroth, 1992; Daly, Wilson, & Weghorst, 1982). Given the central importance of both sexuality and attachment to reproduction and survival, it is also not surprising that evolutionary psychologists have focused their attention on this issue (e.g., Buss, 2000).

There is considerable evidence for sex differences in the eliciting situations for romantic jealousy, with men being more attuned to threats concerning the sexual dimension of the relationship, and women being more attuned to threats concerning the attachment dimension of the relationship (Buss *et al.*, 1992; Buss, Shackelford, Kirkpatrick, Choe, Lim, Hasegawa, *et al.*, 1999; Wiederman & Kendall, 1999; Cramer, Manning-Ryan, Johnson, & Barbo, 2000; Cann, Mangum, & Wells, 2001; Cramer, Abraham, Johnson, & Manning-Ryan, 2001; Pietrzak, Laird, Stevens, & Thompson, 2002; Brase, Caprar, & Voracek, 2004; Ward & Voracek, 2004). It is important to emphasize that both threats give rise to jealousy in both men and women, and that men and women are only hypothesized to be differentially sensitive to threats to the sexual and attachment dimensions of their romantic relationships. From an evolutionary psychological perspective, these differential sensitivities are conceptualized as arising from a sex-differentiated, evolved psychological disposition that influences our responses in situations where romantic relationships are threatened by a rival (Buss, 2000). The existence of such a sex-differentiated disposition for jealousy has recently been confirmed in a brain imaging study (Takahashi, Matsuura, Yahata, Koeda,

Suhara, & Okubo, 2006).

The contemporary evolutionary perspective on jealousy has its origins in sexual selection theory, as proposed by Darwin (see Mayr, 1972), and parental investment theory, as developed by Trivers (1972). Symons (1979) hypothesized that the different reproductive challenges faced by men and women, when considered in the light of sexual selection and parental investment theory, should result in sex differences in jealousy. In species with internal fertilization and joint parental investment, a man can never be entirely confident of his paternity. Men, in such cases, face potentially severe reproductive costs if their female partner engages in sexual infidelity and will be vigilant about the sexual infidelity of his partner. Just as internal fertilization does not allow men to be secure in their paternity, it simultaneously ensures women are always certain of their maternity. The threat of infidelity to the woman lies in any reduction in the man's attachment to her and her children, who she has to care for 15 years or so.

As noted above, this hypothesis has been confirmed in a large number of studies using the methodology developed by Buss and colleagues (1992) to test these and alternative explanations. However, both this methodology (Harris, 2005), and the scientific credibility of evolutionary psychology more generally has been the subject of vigorous debate, with views by both researchers and philosophers of science being forcefully expressed on both sides (Buller, 2005; Buss & Haselton, 2005). The literature on the evolutionary psychology of jealousy is often seen as a test case and has also attracted the attention of researchers as well as philosophers (Sesardic, 2002).

While some commentators unreasonably propose that because evolutionary hypotheses about relationships are not amenable to experimental test, they are not scientific, others have rightly pointed out that the evidence concerning sex differences in jealousy have tended to follow a confirmationist strategy (Guerrero, Spitzberg, & Yoshimura, 2004; Holcomb, 1996). This strategy is subject to the criticism that it commits the fallacy of attempting to affirm the antecedent (i.e. if p , then q ; q , therefore p), where the finding of the predicted sex differences supposedly confirms the

theory, but such sex differences might just as easily be explained by some other theory (DeSteno & Salovey, 1996; Harris & Christenfeld, 1996). One way forward would be to draw differential predictions from the competing theories, but so far this has not proved fruitful (see, for instance, Ward & Voracek, 2004). Another way of undermining the reliance on the fallacy of the affirming the antecedent is to make a number of more specific hypotheses within evolutionary psychology itself, such as “if p , then q and always q ”, or “under condition x , if p , then q , but under condition y , not q ” (Guerrero *et al.*, 2004; Holcomb, 1996). The latter research strategy has already been employed by examining the evolutionary hypothesis about sex differences in jealousy in homosexual populations and under conditions where heterosexual individuals are threatened by a rival who is the same sex as their partner.

As reproduction is not at stake in homosexual relationships, it can be hypothesized that the sex difference observed in heterosexual couples should either be diminished or not evident when the rival is of the same sex. That is, under conditions where the rival does not pose a reproductive threat, there should not be an elevated level of sexual jealousy in men. This has been researched under two conditions: when all the individuals involved in the jealousy scene are homosexual and when the primary relationship is heterosexual and the rival is homosexual (i.e., of the same same-sex as one’s partner). If the relevant cue for heightened sexual, as opposed to emotional, infidelity among men is the presence of a reproductive threat, then it should only be observed in heterosexual couples with opposite sex rivals.

There have been five studies that have tested the evolutionary hypothesis in homosexual populations (Bailey, Gaulin, Agyei, & Gladue, 1994; DeBruine, Kemmelmeier, & Burnstein, 2001; Dijkstra, Groothof, Poel, Laverman, Schrier, & Buunk, 2001; Harris, 2002; Sheets & Wolfe, 2001). On the whole, these studies have found that homosexual men are not more sexually jealous than homosexual women and that, at least in this sense, homosexual men resemble heterosexual women in their jealousy. For women, the weight of the evidence is in favor of homosexual women also

resembling heterosexual women in mainly being concerned about the attachment or emotional dimension of the threat to the relationship. However, one study (Dijkstra *et al.*, 2001) found that homosexual women were more sexually jealous than their homosexual male counterparts. This finding is inconsistent with the findings of the other four studies and has the limitation of not including heterosexual men and women for comparison. Given these concerns, it has to be concluded that, at this time, the evidence favors threats to the attachment or emotional foundation of the relationship as being the most common basis for jealousy, with sexual jealousy being up-regulated in men where reproduction is at stake. However, another condition that this hypothesis can be tested under is when the threat to a heterosexual couple comes from a same-sex rival (White & Mullen, 1989).

The first two studies to examine jealousy in heterosexual relationships in the context of same-sex versus opposite-sex rivals were reported by Oubaid (1997). In two studies, Oubaid found that women were more likely than men to assess same-sex infidelity as being more threatening than opposite-sex infidelity, and that the typical effect of enhanced sexual jealousy in men was observed when the rival was of the opposite but not of the same sex. That is, when the rival for his female partner's sexual or emotional attention was another man, sexual jealousy was enhanced as predicted by evolutionary theory, but when the rival was another woman, this was not the case. This evidence is consistent with the evolutionary account of jealousy in that, just as in the case of homosexual relationships where reproduction is not at stake, sexual jealousy is not enhanced when the rival is another woman. However, unexpectedly Oubaid also reported a near-significant trend for women to be more sexually jealous than men when the rival was of the same sex as her partner.

This trend reported by Oubaid (1997) was found to be statistically significant in a study published in 1998 by Wiederman and LaMar. These authors also tested a number of competing explanations for this finding and found that enhanced female sexual jealousy in the context of a same-sex rival remained significant after statistically adjusting for religiosity, level of interest in

sex, erotization of same-sex sexual contact, and beliefs about associations between love and sex. Wiederman and LaMar (1998) argued that their findings were consistent with the evolutionary psychology theory of jealousy, advancing two explanations for enhanced sexual jealousy in women in response to a same-sex rival. Firstly, they suggested that same-sex sexual infidelity indicates to a woman that the level of disclosure within the relationship is not high. Secondly, they suggested that the implication of a homosexual infidelity may be more upsetting for a woman due to the realization that sexually she cannot compete with the male rival and as such, is unable to meet the needs of her partner. It is difficult to see these explanations as arising in a direct fashion from the evolutionary account, although it might be suggested that sex of a man with another man could be perceived in some way to threaten the emotional bond of the heterosexual relationship.

A more recent study (Sagarin, Becker, Guadagno, Nicastle, & Millevoi, 2003) also investigated the moderating influence of the sex of the rival in response to infidelity in a heterosexual sample. Sagarin *et al.* (2003) hypothesized on the basis of the evolutionary theory of jealousy that, for both men and women, a same-sex infidelity should not pose any threat to their reproductive success and so a sex-differentiated response should not be observed. Sagarin *et al.* (2003) reported the typical finding that in the case of a heterosexual rival more men than women nominated greater distress at sexual compared with emotional infidelity. However, when presented with a same-sex rival, men and women were not differentiated in their response to sexual as opposed to emotional infidelity. This finding would at first glance seem to contradict the findings of Wiederman and LaMar (1998). However, we reanalyzed the data from the Sagarin *et al.* (2003) study and found that there was a significant within-sex difference for both men and women in response to heterosexual versus homosexual rivals. Specifically, women presented with a rival who was the same sex as their partner were approximately three times more likely to indicate distress at sexual infidelity than women presented with a rival who was the opposite sex of their partner, $OR = 2.96$ (95% CI : 1.63-5.43). Conversely, men presented with a same-sex rival were two times

less likely than men presented with an opposite-sex rival to nominate greater distress at the sexual infidelity of their partner, $OR = 0.48$ (95% $CI: 0.26-0.88$). These findings are broadly consistent with the findings of Wiederman and Lamar (1998) and suggest that when a woman's relationship is threatened by a male rival, she finds the sexual aspect of an infidelity more threatening than when the rival is a woman.

This finding of enhanced sexual jealousy in heterosexual women when the rival is the same sex as her partner in three studies is not easily explained within an evolutionary psychology framework. If female jealousy serves to reduce the risk that a male partner will divert his attention from the woman and her children to a romantic rival, then the threat to reproductive success posed by a male or female rival should be of equal concern. However, this would appear not to be the case.

Here, we report three studies, two conducted in Austria and one conducted in Australia. In these studies, we examined in more detail the heterosexual female response of enhanced sexual jealousy when the rival is the same sex as her partner. We sought to establish whether this result is consistent across studies and to rule out a number of alternative explanations for this finding.

Study 1

As noted above, one of the first studies investigating sex differences in jealousy in the context of same-sex infidelity was the one reported by Oubaid (1997). A key finding reported by Oubaid was that more women than men regarded same-sex infidelity as being more threatening than opposite-sex infidelity. In this first study, we sought to answer the following question: Do women find same-sex infidelity more threatening than opposite-sex infidelity, and, if so, does this still hold after adjusting for likely alternative predictors of this response, such as age, religiosity, liberalness of upbringing, and importance of sex in relationships?

Method

Participants. The participants were 253 Austrian adults (114 men, 139 women) recruited from the community who were not enrolled in a psychology course (thereby ensuring that

participants were, in all likelihood, naïve regarding the hypotheses tested in this research). Thus this sample was older than the typical undergraduate sample. They also tended to be well-educated and lived in an urban setting. Participants' age ranged from 18 to 74 years, with a mean of 30.7 years ($Mdn = 26, SD = 12.6$). One-hundred and eighty-two (71.9%) participants had a current partner, while 71 (28.1%) did not. Somewhat more men (33.3%) than women (23.7%) were not partnered, $\chi^2(1) = 2.86, p = .09$. In order to ensure that all participants were heterosexual in orientation, they were administered a modified 5-point Kinsey sexual orientation scale (0 = exclusively heterosexual, 2 = bisexual, and 4 = exclusively homosexual), and only those participants scoring zero were included in the study.

Instruments. After reporting basic personal information (sex, age, and relationship status), participants responded to the following items.

Parenting Style. A single-item measure assessing parents' parenting style (on a 6-point scale: 0 = very conservative and traditional, 5 = very liberal and open-minded).

Religiosity. A single-item measure assessing religiosity (6-point scale: 0 = not at all religious, 5 = very strongly religious).

Contact with homosexuals. A single-item measure assessing the extent of contact with homosexuals (3 categories: 0 = hardly any contact, 1 = homosexuals among my acquaintances, 2 = homosexuals among my friends).

Relationship between sex and love. A forced-choice question assessing attitudes to the relationship between sex and love (two categories: 0 = sex and love are absolutely inseparable for me, 1 = sex and love are two entirely different things for me).

Reactions to sexual orientation of the rival were assessed using German versions of six forced-choice infidelity dilemmas adapted from Buss *et al.* (1992, 1999) and used widely in studies of sex differences in jealousy. German translations of the original items from Buss *et al.* (1992, 1999) have previously been used in related research in Austria (Voracek, 2001; Voracek, Stieger, &

Gindl, 2001) and Germany (Buunk, Angleitner, Oubaid, & Buss, 1996; Oubaid, 1997). For this study, the items were adapted as follows: only sexual infidelity was to be imagined, and the sex of the rival was varied (i.e., opposite-sex vs. same-sex). The six adapted items as responses to the question: “What would distress you more?” were as follows. Item I – “Imagining your partner enjoying passionate sexual intercourse with a woman [vs. with a man].” Item II – “Imagining your partner trying different sexual positions with a man [vs. with a woman].” Item III – “Imagine your partner is still sexually interested in his/her former lover. What would upset or distress you more? Imagining that my partner’s former lover is of the same sex as him/her [vs. is of the opposite sex to him/her].” Item IV – “Imagine that your partner has sexual intercourse with an opposite-sex partner as well as with a same-sex partner. Which type of sexual infidelity would upset or distress you more? The same-sex infidelity [vs. the opposite-sex infidelity].” Item V – “Imagine that your partner has sexual intercourse with another person, but you are certain that they will not form a deep emotional attachment. What would upset or distress you more? Imagining that this other person is of the same sex as your partner [vs. is the opposite sex to your partner].” Item VI – “Imagine that your partner has sexual intercourse for just one night with another person, with no chance of any further involvement. What would upset or distress you more? Imagining that my partner has sexual intercourse with some opposite-sex person [vs. with some same-sex person].” A final item (Item VII) reported by Oubaid (1997) was added to the six adapted items: “Generally, which type of sexual infidelity of your partner would be worse (i.e., more hurtful or more unforgivable) for you? Sexual infidelity with a same-sex partner [vs. with an opposite-sex partner].”

All participants completed the sections of this survey in the same order. Responses to the seven (heterosexual vs. homosexual) infidelity dilemmas above were uniformly coded, with 0 = opposite-sex infidelity response and 1 = same-sex infidelity response. Responses across these seven items were aggregated to form a Same-Sex Infidelity Threat (SSIT) Score, ranging from 0 to 7, with higher scores reflecting more distress at imagined same-sex infidelity than imagined opposite-sex

infidelity. The internal consistency of the SSIT scale as measured by Cronbach's α was .94 for the total sample ($\alpha = .90$ for men; and $\alpha = .96$ for women).

Procedure. Participants were recruited for the study by word of mouth using several data collectors. Participation was voluntary and participants were not paid for completing the questionnaire. The questionnaire was distributed to participants who completed it anonymously in their own time and returned it by way of a sealed envelope or by throwing it into a box left for this purpose.

Results

The difference between men and women on the parenting style item was not statistically significant: $M = 2.18$ ($SD = 1.48$) for men and $M = 2.25$ ($SD = 1.79$) for women, $t(251) = -0.36$, $p = .72$, $d = -0.04$. This was also the case with the measure of religiosity: for men, $M = 2.19$ ($SD = 1.66$) and for women, $M = 1.83$ ($SD = 1.68$), $t(251) = 1.73$, $p = .09$, $d = 0.22$. Similarly, there was no difference between men and women on the contact with homosexuals item, $\chi^2(2) = 3.72$, $p = .16$. However, there was a significant difference on the importance of sex item, $\chi^2(1) = 23.80$, $p < .001$, $OR = 4.51$, $d_{\text{cox}} = 0.91$, with more women than men (87.8% vs. 61.4%) regarding sex and love as being inseparable from each other.

Differences in men's and women's endorsement of the SSIT items were first examined by comparing total scores on the SSIT scale, which measures the overall extent to which participants were more distressed by infidelity with a same-sex rival compared to an opposite-sex rival. There was a significant difference between men, $M = 1.22$ ($SD = 2.10$), and women, $M = 2.05$ ($SD = 2.83$), on the SSIT scale, $t(251) = -2.60$, $p = .01$, $d = -0.33$, with women being more likely to be distressed by a same-sex rival than men were.

Table 1 sets out the results for men and women for each item of the SSIT scale. These results show that on Items III to VII women were more likely than men to be distressed by a same-sex rival. In each case, the effect size was approximately medium in size, as measured by the d_{cox}

statistic, which is a converted effect-size metric for the sex difference (unbiased d analogue of OR), with $d_{\text{cox}} < 0$ reflecting that more women than men chose the same-sex infidelity threat, compared to the opposite-sex infidelity threat, as worse (Sánchez-Meca, Marín-Martínez, & Chacón-Moscoso, 2003).

In order to investigate which background variables might account for sex differences in the SSIT scale score, we computed Pearson correlation coefficients for men and women for these variables with the SSIT score (see Table 2). As can be seen from Table 2, there was a positive correlation for both men and women between age and the SSIT scores, suggesting that older participants were likely to be more distressed by same-sex compared with opposite-sex infidelity. For men, there was a significant negative correlation between parenting style and the SSIT, suggesting that men who reported being parented in a more liberal fashion were less likely to be more distressed by same-sex than opposite-sex infidelity. Women who had more contact with homosexuals were also likely to have lower SSIT scores. There was also a trend among women for those who were more religious to report being more distressed by same-sex infidelity.

In order to determine whether the background variables would remain significant after taking account of the sex differences in the SSIT scores, we used multiple linear regression models to assess this difference after adjusting for the background variables. With SSIT as the dependent variable we developed a hierarchical model in which the six background variables were entered on the first step and sex entered on the second step. After controlling for the six background variables, sex remained a significant predictor of the SSIT scores, $\Delta F(1, 245) = 12.54, p < .001$.

Discussion

This study replicated the findings reported by Oubaid (1997), finding that women more than men found same-sex sexual infidelity more troubling than opposite-sex infidelity. This study also found that this difference persisted after adjusting for plausible alternative predictors of this response, namely age, relationship status, attitude regarding separability of love and sex, religiosity,

acquaintance with homosexual people, and liberalness of parenting style. This sex difference is significant within the context of the jealousy literature, because the main focus to date has been on enhanced sexual jealousy in heterosexual men, with the assumption that men and women are equivalent on other aspects regardless of sexual orientation. As noted in the Introduction, there is no simple explanation of this phenomenon from an evolutionary psychological perspective. It is generally assumed in the respective literature on jealousy that women present a simple mirror image of the findings for men in that, compared to men, they can be said to be more jealous in response to emotional infidelity. However, this study, building on the work of Oubaid (1997), has shown that women find same-sex infidelity more distressing than men, which is an unexpected sex difference in romantic jealousy.

Study 2

The other sex difference of relevance to the current series of studies is the one reported by Wiederman and Lamar (1998) in which heterosexual women were more sexually jealous than men when the rival was of the same sex as their partner. These authors also found that this difference persisted after statistically adjusting for a range of relevant background variables. Oubaid (1997) and Sagarin *et al.* (2003) did not find a statistically significant enhancement of sexual jealousy in heterosexual women in their studies, although there was near-significant trend in the Oubaid (1997) study. Furthermore, our re-analysis of the Sagarin *et al.* data suggests that although women are not more sexually jealousy than men when there is a same-sex rival, they are more sexually jealous than they themselves are when there is an opposite-sex rival, whereas this is not the case for men. In this study, we sought to further investigate this issue and to assess whether homophobia might account for any sex difference.

Method

Participants. Two-hundred and thirty Austrian adults participated in this study (106 men, 124 women). As in Study 1, psychology undergraduates were not eligible to participate and it is

unlikely, because of this exclusion criterion, that participants were aware of the research hypotheses. The participants were recruited from the community and tended to be well-educated. All participants were heterosexual (i.e., scoring zero on a modified 5-point Kinsey sexual orientation scale, 0 = exclusively heterosexual, 2 = bisexual, and 4 = exclusively homosexual). The mean age of the sample was 25.4 years, $Mdn = 24$, $SD = 6.1$, ranging from 18 to 57 years. Of the sample, 165 (71.7%) currently had a partner and 65 (28.3%) did not. Somewhat more men (32.1%) than women (25.0%) did not have a current partner, although this was not statistically significant, $\chi^2(1) = 1.41$, $p = .24$.

Instruments. As in Study 1, German translations of the original (heterosexual infidelity threat) items from Buss *et al.* (1992, 1999) were used in this study. Four forced-choice (heterosexual) infidelity dilemmas from the set developed by Buss *et al.* were used, the two original items published in 1992 and two out of the four items published in 1999. The general instructions for these four items were: "Please think of a serious or committed romantic relationship that you have had in the past, that you currently have, or that you would like to have. Imagine that you discover that the person with whom you have been seriously involved became interested in someone else. What would upset or distress you more?"

Item I-het – "Imagining your partner forming a deep emotional attachment to that person vs. Imagining your partner enjoying passionate sexual intercourse with that person."

Item II-het – "Imagining your partner trying different sexual positions with that other person vs. Imagining your partner falling in love with that other person."

Item III-het – "Imagining your partner having sexual intercourse with that person, but you are certain that they will not form a deep emotional attachment vs. Imagining your partner forming a deep emotional attachment to that person, but you are certain that they will not have sexual intercourse."

Item IV-het – "Imagining that your partner is still sexually interested in his/her former

lover, but is no longer in love with this person vs. Imagining that your partner is still emotionally involved with his/her former lover, but is no longer sexually interested in this person.”

Items I-het to IV-het were uniformly coded, with 0 = emotional infidelity response and 1 = sexual infidelity response. Responses across these four items were aggregated to form a Heterosexual Infidelity Threat (HETIT) Score, ranging from 0 to 4, with higher scores reflecting imagined heterosexual sexual infidelity as being more upsetting or distressing than imagined heterosexual emotional infidelity. The scale had adequate internal consistency for a study of this kind, Cronbach’s $\alpha = .78$ (total sample), $\alpha = .83$ for men and $\alpha = .64$ for women.

A second section measuring infidelity threat was comprised of four same-sex or homosexual infidelity threat items (adapted from the heterosexual infidelity dilemmas introduced in Buss *et al.*, 1992, 1999), with each item corresponding to one of the heterosexual infidelity threat items set out above. The general instruction for this item set was: “Please think of a serious or committed romantic relationship that you have had in the past, that you currently have, or that you would like to have. Imagine that your partner confessed a homosexual infidelity to you. What would upset or distress you more? (Here and in the following, please only circle one.)”

Item I-hom – “Imagining your partner having sex with that other same-sex person vs. Imagining your partner falling in love with that other same-sex person.”

Item II-hom – “Imagine that your partner both formed an emotional attachment to another, same-sex person and had sexual intercourse with that other person. Which aspect of your partner’s involvement would upset or distress you more? The sexual intercourse with that other same-sex person vs. The emotional attachment to that other same-sex person.”

Item III-hom – “What would upset or distress you more? Imagining your partner having sexual intercourse for just one night with another same-sex person, with no chance of any further involvement vs. Imagining your partner becoming emotionally involved with another same-sex person, with no chance of any sexual involvement.”

Item IV-hom – “Imagine that you discover that the person with whom you have been seriously involved became interested in someone else, and this other person is the same sex as your partner. What would upset or distress you more? Imagining your partner trying different sexual positions with that other same-sex person vs. Imagining your partner falling in love with that other same-sex person.”

Items I-hom to IV-hom were uniformly coded, with 0 = emotional infidelity response and 1 = sexual infidelity response. Responses across these four items were aggregated to form a Homosexual Infidelity Threat (HOMIT) Score, ranging from 0 to 4, with higher scores reflecting imagined homosexual sexual infidelity as being more distressing than imagined homosexual emotional infidelity. Cronbach’s α was .78 for the HOMIT scale (total sample; α = .70 for men and α = .84 for women).

Participants also completed an additional item developed by Oubaid (1997; Item VII from Study I above): “Generally, which type of sexual infidelity by your partner would be worse (i.e., more hurtful or unforgivable) for you? Sexual infidelity of the homosexual type vs. of the heterosexual type.”

Homophobia was measured using a revised version of the Index of Homophobia (IHP) scale (Ricketts & Hudson, 1998), translated into German. Two items of the 25-item IHP appeared to be culturally specific and not applicable for Austrian study participants, hence these items were omitted (Item 11: “I would feel comfortable knowing that my clergyman was homosexual.”; and Item 20: “It would not bother me to walk through a predominantly gay section of town.”), thus leaving 23 IHP items. These items were excluded for the following reasons: the Roman Catholic religion (which is predominant in Austria – about 75% of the population identify themselves as Roman Catholic) still strongly condemns homosexuality, therefore outings of homosexual clergymen are infrequent; and, there are no towns in Austria with “predominantly gay sections”. The IHP was also modified from a 5-point response scale to a 4-point scales (0 = strongly agree, 1 =

somewhat agree, 2 = somewhat disagree, 3 = strongly disagree), by omitting the uninformative middle category (“neither agree nor disagree”). Higher IHP scores reflect a higher level of homophobia. The internal consistency of the German language, 23-item revised scale was good, Cronbach’s $\alpha = .92$ (total sample), $\alpha = .93$ for men and $\alpha = .86$ for women (by comparison, $\alpha = .90$ was reported for the original 25-item and 5-point scale version of the IHP; Ricketts & Hudson, 1998, p. 367). The order of presentation of the sections of the survey instrument (HETIT items, HOMIT items, and Homophobia Index IHP) was counterbalanced across participants (six questionnaire versions were used) in order to eliminate any order effects.

Procedure. This was similar to Study 1.

Results

There was a significant sex difference on the summed responses to the heterosexual infidelity items (the HETIT score), with a mean of 1.32, $SD = 1.52$, for men and a mean of 0.65, $SD = 1.01$, for women, $t(228) = 4.01$, $p < .001$, $d = 0.53$. This finding is consistent with the many other studies that have found enhanced sexual jealousy in men in the context of heterosexual infidelity. There was, however, no sex difference on the summed responses to the homosexual infidelity items (HOMIT score), $M = 0.83$, $SD = 1.15$, for men and $M = 0.83$, $SD = 1.33$, for women, $t(228) = -0.03$, $p > .99$, $d < -0.01$. The HETIT and HOMIT scores were significantly positively correlated for both men, $r = .55$, $p < .001$, and women, $r = .59$, $p < .001$.

There was a substantial and statistically significant sex difference on the IHP scale, M (and SD) being 32.75 (14.83) for men and 21.52 (9.80) for women, $t(228) = 6.86$, $p < .001$, $d = 0.91$. However, the IHP scale was only correlated with the HETIT scores for men, $r = -.23$, $p < .05$, and was not significantly correlated with the HOMIT scale for either men, $r = -.02$, $p > .05$, or women, $r = .05$, $p > .05$. As there was no difference between men and women on the HOMIT score and no correlation between the IHP and HOMIT scores for both men and women, multiple regression models to determine if possible sex differences persisted after adjusting for the IHP scale were

redundant.

Table 3 sets out the percentages of men and women endorsing sexual infidelity as being more threatening for the four heterosexual and four homosexual items. As can be seen from this table, there are significant sex differences on three out of four of the heterosexual items, with more men than women endorsing sexual infidelity as being more distressing than emotional infidelity. For the fourth item (III-het), there is a trend in this direction. Only one of the four homosexual infidelity items proved to be statistically significant (I-hom), with women being more likely than men to find sexual infidelity more threatening than women. When asked which form of sexual infidelity would be worse, homosexual or heterosexual (final decisive item), more women than men nominated homosexual infidelity as being worse.

One item in each of the scales (HETIT and HOMIT) allowed direct comparison across the heterosexual and homosexual rival scenarios (Items het II and hom IV; these two items were identical except for the sex of the rival). Overall, men were somewhat more concordant in their response patterns, Cohen's $\kappa = .42$, $p < .001$, than women, $\kappa = .29$, $p = .001$. Looked at another way, the change in the response pattern was significant (McNemar test: $p = .003$). Of the 106 male respondents, 75 chose the emotional infidelity response on both items and 11 the sexual infidelity response on both items. Of the remaining cases, 17 chose the sexual infidelity response on the heterosexual item and the emotional infidelity response on the homosexual item, while there were only 3 cases with the reverse pattern of changing from the emotional infidelity response on the heterosexual item to the sexual infidelity response on the homosexual response.

By contrast, women showed an opposite pattern, although this was not statistically significant (McNemar test: $p = .11$). Of the 124 female respondents, 98 chose the emotional infidelity response on both items and 14 chose the sexual infidelity response on both items. There were six cases that chose the sexual infidelity response on the heterosexual item but shifted to choosing the emotional infidelity response on the homosexual item, while 14 cases shifted in the

reverse direction from emotional to sexual infidelity from the heterosexual to the homosexual item. While not statistically significant, this shows a trend that is reverse that of the men.

Discussion

Overall, the findings of Study 2 replicated the widely reported finding of enhanced sexual jealousy among men in the context of heterosexual infidelity. In the context of homosexual infidelity this effect was not observed. On the whole, the effect reported by Wiederman and Lamar (1998) of enhanced sexual jealousy in women in this context was not observed (although one item did show this pattern, and there was a non-significant trend for women to change their response across the two contexts, from endorsing emotional infidelity in the heterosexual context to sexual infidelity in the homosexual context).

Study 3

In Study 3, we sought to further examine the possibility of enhanced sexual infidelity in women in the context of a same-sex or homosexual rival. Using a fully crossed design in which all of the six Buss *et al.* (1992, 1999) jealousy items were employed for both heterosexual and homosexual rival contexts, we examined differences between the sexes as well as within-sex differences. As in Study 2, we sought to assess whether age, relationship status, and homophobia would influence any sex differences observed in finding sexual infidelity distressing in the context of both heterosexual and homosexual infidelity.

In addition, in this study we sought to examine the question of whether biological sex would continue to predict this difference after adjusting for a measure of masculine and feminine sex-role orientation. The question of the relative contributions of distal evolutionary influences and the more proximal influences of socialization has been the subject of considerable debate (see Buss, Larsen, & Westen, 1996; DeSteno & Salovey, 1996; Harris, 2003). However, the empirical evidence remains equivocal (Ward & Voracek, 2004) using the methodology originally presented by DeSteno and Salovey (1996), which arises out of an either/or approach to this

question. A more useful approach might be to try to estimate the relative contribution of biological sex and sex-role socialization using a multivariate modelling approach, which is the one adopted below. A previous attempt to do this, using the Bem Sex-Role Inventory (BSRI; Bem, 1981), was reported by Hupka and Bank (1996), who did not find that sex-typed masculine individuals were more sexually jealous than others. However, Hupka and Bank (1996) attributed this failure to administering the BSRI prior to the administration of the jealousy items. We would suggest also that an approach that used the masculinity and femininity BSRI scales as continuous measures (rather than using them to type individuals) would be a better approach to employ in multivariate models developed to predict sexual jealousy, which is the approach employed below.

Method

Participants. Two-hundred and two participants took part in the current study, which was conducted in Canberra, Australia. Of the total sample, 153 participants were undergraduate psychology students from the Australian National University (ACT). A further 49 men were recruited for the purposes of the study from universities outside the ACT and from sporting teams within Canberra. Because the study attempted to examine responses in a purely heterosexual sample, nine subjects who either did not indicate their sexual orientation, or who indicated their sexual preference as either homosexual or bisexual, were excluded from analysis. This left 193 valid participants. The study was approved by the Australian National University Human Research Ethics Committee.

Of the 193 valid participants, 108 (56%) were female and 85 (44%) were male. The median age of the sample was 20 years (range: 18 to 54 years). Men ($Mdn = 22$ years), were, on average somewhat older than women ($Mdn = 20$ years), Mann-Whitney U test, $z = -3.50$, $p < .001$. Fifty-seven percent of the sample indicated that they were currently in a committed relationship.

Instruments. In addition to their sex, age, and sexual orientation, participants were asked whether or not they were currently involved in a committed romantic relationship. There were 12

items that asked about romantic jealousy. The first six jealousy items consisted of (a) the two original Buss *et al.* (1992) items that ask which would be more distressing, sexual or emotional infidelity, and (b) the four Buss *et al.* (1999) items which ask about sexual and emotional infidelity exclusive of each other (see Studies 1 and 2 above). Six further homosexual jealousy items were developed that differed from the original items only in that the rival was of the same sex as the partner.

As in Study 2, the six heterosexual and homosexual jealousy items were summed to form two scales, with higher scores on each of the scales indicating a tendency to find sexual infidelity more distressing than emotional infidelity. Having completed the twelve forced-choice jealousy items, participants then completed the 25-item Index of Attitudes towards Homosexuals (IAH) scale (Hudson & Ricketts, 1980). Scores on the IAH range from 0 to 100, with higher scores indicating higher levels of homophobia. Pain and Disney (1995) reported that the IAH is reliable (Cronbach's $\alpha = .94$) and valid for use in Australian populations as a measurement of homophobia. All participants completed the three sections of the questionnaire in the same order.

Procedure. This was similar to Studies 1 and 2.

Results

Men scored significantly higher than women on the IAH, $M = 41.40$ ($SD = 17.59$) versus $M = 31.67$ ($SD = 16.12$), $t(190) = -3.98$, $p < .001$, $d = 0.58$. As would be expected, men, $M = 4.82$ ($SD = 0.67$), scored more highly on average on the BSRI masculinity scale than women did, $M = 4.39$ ($SD = 0.66$), $t(191) = -4.48$, $p < .001$, $d = 0.65$, and women, $M = 4.85$ ($SD = 0.58$), scored more highly than men on the BSRI femininity scale, $M = 4.54$ ($SD = 0.54$), $t(189) = 3.81$, $p < .001$, $d = -0.55$.

Differences between male and female endorsement of sexual jealousy as being more distressing were compared for both the summed heterosexual and homosexual rival Buss *et al.* (1992, 1999) items. Men endorsed more of the sexual jealousy items in the context of a heterosexual rival than women did, $M = 2.85$ ($SD = 1.91$) versus $M = 1.51$ ($SD = 1.64$), $t(187) = -5.18$,

$p < .001$, $d = 0.76$. By contrast, women endorsed more of the sexual jealousy items than men did in the context of a homosexual rival, $M = 2.65$ ($SD = 2.16$) versus $M = 1.73$ ($SD = 1.87$), $t(187) = -5.18$, $p = .002$, $d = -0.45$.

To examine the potential role of background variables in sex differences, we computed correlation coefficients between these variables and the summed heterosexual and homosexual rival items for men and women (see Table 4). As can be seen from Table 4, for men, the IAH and the BSRI masculinity scores were positively correlated with the heterosexual rival scores, and the IAH was also positively correlated with the homosexual rival scores. For women, there were no significant correlations between any of the background variables and either of the heterosexual or homosexual rival scores.

To examine whether sex would remain a significant predictor of the heterosexual rival scores after adjusting for age, relationship status, homophobia, and masculinity and femininity, we entered these background variables in the first step and sex in the second step of a hierarchical multiple linear regression model. Sex was a significant predictor of the summed heterosexual rival scores after adjusting for the background variables, with men having higher scores than women, $\Delta F(1, 175) = 17.03$, $p < .001$. While both homophobia, $t = 2.54$, $p = .012$, and the BSRI masculinity scores, $t = 2.54$, $p = .012$, were significant predictors in the first step of the regression, there were no other significant predictors in the second step. The same procedure was followed for the homosexual rival items, and again sex was a significant predictor after adjusting for the background variables, with women having higher scores than men, $\Delta F(1, 174) = 12.90$, $p < .001$. The only other variable significant in the second step of the regression was the IAH, $t = 2.39$, $p = .018$.

When items with a heterosexual rival were examined individually (see Table 4), it was found in all cases but one that men were more likely than women to nominate sexual jealousy as being more distressing. In the case of the non-significant item, the effect was in the direction expected and just non-significant ($p = .051$). All of these effects, as measured by the d_{cox} statistic,

were medium to large in size.

When the individual items were examined for the heterosexual rival condition (see Table 5), it was found that in all cases there was a reversal, with more women than men nominating sexual infidelity as being more distressing. However, in only two cases (I-hom) was this trend significant. One of these effects was moderate in size and one very large (as indicated by the d_{cox} statistic).

Another way to examine the relationship between heterosexual and homosexual rivals is to examine the shift in response across individual items for men and for women. Remembering that each of the six homosexual items were exactly the same as the six heterosexual items, except for the sex of the rival, we were then able to compare shifts that occurred across the two rival contexts. Figures 1 and 2 present the percentage of women and men, respectively, who changed their response from emotional to sexual, or sexual to emotional, when the romantic rival was homosexual. For each item, a significantly greater percentage of women, as tested by the McNemar test, changed their response from emotional to sexual infidelity. For men, a significant shift in response, as tested by the McNemar test, from sexual infidelity in the original items to emotional infidelity in the homosexual items occurred for four of the six Buss *et al.* (1992, 1999) items.

Discussion

The findings reported here for Study 3 provide further support for the evolutionary hypotheses concerning elevated sensitivity to sexual jealousy in men. Men are more sexually jealous than women when the rival is heterosexual, but this effect is no longer present when the rival is homosexual and there is no potential threat to reproduction. This effect persists after adjusting statistically for background variables such as age, relationship status, homophobia, and sex-role orientation. The same effect was observed for four of the six items when the responses to a heterosexual rival were compared to the same items with a homosexual rival.

For women, the general trend in the findings is consistent with Studies 1 and 2 in that women are more sexually jealous than men when the summed items are examined and this effect

again persists after adjusting for age, relationship status, homophobia, and sex-role orientation. However, when examined itemwise, this effect was only clearly observable on two items. But when examined within women, it became clear that on every item there was a statistically significant shift towards being more concerned with sexual jealousy when the rival was homosexual.

Finally, Study 3 also shows that a measure of masculine sex-role socialization was significantly correlated with being more distressed by sexual infidelity when the rival was heterosexual, which is consistent with the prediction made by Hupka and Bank (1996). However, this was not significant when sex was introduced in a second step in a hierarchical regression model, suggesting that a masculine sex-role orientation does not predict distress at sexual infidelity with a heterosexual rival over and above biological sex. Endorsement of a feminine sex-role orientation was not correlated with any of the outcome variables, so there is no evidence to support this as an alternative explanation for women to become more sexually jealous when the rival is homosexual.

General Discussion

Taken together, the findings from these three studies are consistent with the evolutionary hypothesis that enhanced sexual jealousy in men is determined by cues that signal threats to reproduction. In Studies 2 and 3, in samples from Austria and Australia, men were sexually jealous when the rival was a men, but not when the rival was a women. This finding is consistent with other similarly designed studies (Oubaid, 1997; Sagarin *et al.*, 2003; Wiederman & LaMar, 1998) that also obtained this effect. This is a good example of utilizing a study design that employs a conditional hypothesis testing strategy of the kind described in the Introduction to ensure that one is simply not engaging in a confirmationist strategy. The effect is observed when reproduction is at stake and not observed when it is not.

The finding of enhanced sexual jealousy among heterosexual women when the rival is a men is, on the face of it, more difficult to explain on the basis of the current evolutionary account of

sex differences in jealousy in humans. It is not clearly predicted that this should be the case. Heterosexual women seem to find homosexual infidelity more aversive than heterosexual men do, and this effect is not explained by enhanced homophobia among women (in fact, the opposite is generally true). When it comes to enhanced sexual jealousy among women concerning male rivals, the evidence is more equivocal. When compared to men, two studies have found more concern about sexual compared to emotional infidelity (our Study 3; Wiederman & LaMar, 1998), and three have not (our Study 2; Oubaid, 1997; Sagarin *et al.*, 2003), although there are clear trends in this direction in all three studies. However, in studies where women's responses to both types of infidelities (sexual and emotional) could be examined for both contexts, there was a clearer trend, with two studies finding a statistically significant shift to sexual jealousy being more distressing when the rival is a man (our Study 3; Sagarin *et al.*, 2003), and one finding a trend in this direction (our Study 2).

While more research is required to confirm and enhance our understanding of increased concern over sexual jealousy among women with a homosexual rival, it is important to examine likely explanations for this phenomenon. As noted in the Introduction, Wiederman and LaMar (1998) proposed such a sexual infidelity as either signalling a lack of disclosure in the relationship or that the woman cannot compete sexually with a man. Baumeister and Vohs (2004) elaborated on the latter explanation in the context of their sex-exchange theory. Building on the work of Symons (1979), the argument is that there is considerable evidence that the sexual drive is stronger in men than women and that the dynamics of exchange between men and women result in women exchanging sex for things such as attention, money, goods, and commitment to the relationship. On this account, if a woman's relationship is based on such an implicit exchange, then for a man to seek sex from another man means that the fundamental basis of the relationship is threatened because, as Wiederman and LaMar (1998) emphasized, the sex she has to offer him cannot compete with the sex offered to him by another man. While we are generally in agreement with the explanation

provided by Baumeister and Vohs (2004), we feel that such an exchange system is unlikely to be based on one motivational system alone. We propose an evolutionary motivational systems account that considers both attachment and sexuality and explains the findings discussed so far.

Jealous emotions appear to emerge in human infants already in the first year of life and are reliably evoked when the attachment figure's attention is diverted to another person (Masciuch & Kienapple, 1993; Hart, Carrington, Tronick, & Carroll, 2004). This strongly suggests that jealousy is an inborn aversive response to the diversion of attention from the attachment figure, which has been shown to be reinforcing (Reddy, 2005). The basic jealousy prototype in both men and women should then be emotional (or attachment-based) jealousy. We suggest, then, that until puberty jealousy is predominantly the diversion of attention that meets some basic need of the child. With the onset of puberty and efflorescence of sexuality, a sex difference arises with men being more sexual and women being more oriented to attachment. While both sexuality and attachment are strong motivations in both men and women, we would suggest that there is a sex difference in the strength of these motivations. Consistent with Symons' (1979) suggestion that nature often takes care of evolutionary challenges by building motivational systems that motivate an animal to perform the relevant behaviors, we would argue that reproduction and survival of offspring to reproductive age is taken care of in human beings, as it is in many species, by having men more strongly oriented to sexuality and women more strongly oriented to attachment/caregiving. The exchange that then takes place, and that is threatened in women by a same-sex sexual infidelity, is one in which women exchange sex for attachment. Therefore, while we agree with the essential ideas put forward originally by Symons (1979) and recently further developed by Baumeister and Vohs (2004), we would argue that attachment is just as involved in this exchange as sexuality.

An alternative evolutionary explanation for this finding was first advanced by Oubaid (1997). According to his account, women would find homosexual infidelity more aversive and distressing than men, because there is a greater risk for sexually transmitted disease infection from

a male compared to a female homosexual liaison. It could be argued that over time women adapted to this circumstance by developing a heightened aversion to a homosexual infidelity. This would protect them and their offspring from sexually transmitted diseases. Further studies are needed that would test this explanation and the one proposed above to determine which psychological processes account for this phenomenon.

In conclusion, we suggest that the likely basic form of jealousy for both men and women is concern about a rival's threat to the attachment bond between two individuals. According to this hypothesis, sexual jealousy is enhanced in men when reproduction is at stake, and in women when the sex they are exchanging for attachment is undermined by the "exotic" sex offered by another men. A full explanation of human jealousy will need to take account of the developmental evidence that has accumulated about sexuality and attachment, which are the two motivational systems that govern our romantic relationships.

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Table 1

Sex differences in endorsement of homosexual orientation as being threatening than heterosexual orientation in sexual infidelity (SSIT Items I to VII).

SSIT Item number	Endorsement rate (%)		χ^2	p	OR	d_{cox}
	Men	Women				
I	14.9	23.7	3.08	.08	0.56	-0.35
II	20.2	23.7	0.46	.50	0.81	-0.13
III	16.7	28.1	4.60	.03	0.51	-0.40
IV	16.7	30.2	6.28	.01	0.46	-0.47
V	19.3	34.5	7.26	.01	0.45	-0.48
VI	20.2	34.5	6.40	.01	0.48	-0.45
VII	14.0	30.2	9.28	.002	0.38	-0.59

Note. Endorsement rate (%) = percentage choosing the homosexual (compared to the heterosexual) infidelity response alternative as worse; χ^2 = test statistic for sex difference in endorsement rate ($df = 1$); p = associated p value; OR = odds ratio (effect-size metric for the sex difference in the endorsement rate, as calculated from the fourfold-table data; with $OR < 1$ meaning that more women than men choosing the same-sex infidelity threat, compared to the opposite-sex infidelity threat, as worse).

Table 2

Correlations between background variables and SSIT score for men and women.

	Men	Women
Age	.33***	.37***
Relationship status (1 = partnered)	.10	.09
Parental Education Style Item	-.25**	-.11
Religiosity Item	.15	.18+
Importance of Sex Item (1 = sex and love entirely different)	.02	.07
Contact with Homosexuals (dichotomized: 0 = hardly, 1 = acquaintances or friends)	-.15	-.34***

+ = $p < .10$; ** = $p < .01$, *** = $p < .001$ (two-tailed).

Table 3

Sex differences in endorsement of sexual versus emotional infidelity as being most threatening for heterosexual and homosexual rivals.

Item number	Endorsement rate (%)		χ^2	p	OR	d_{cox}
	Men	Women				
I-het	34.9	12.1	17.00	< .001	3.90	0.82
II-het	26.4	9.7	11.14	.001	3.35	0.73
III-het	29.2	19.4	3.07	.08	1.72	0.33
IV-het	41.5	23.4	8.66	.003	2.32	0.51
I-hom	10.4	22.6	6.04	.01	0.40	-0.56
II-hom	31.1	21.8	2.60	.11	1.62	0.29
III-hom	28.3	22.6	1.00	.32	1.35	0.18
IV-hom	13.2	16.1	0.39	.53	0.79	-0.14
Final (decisive) item	13.5	28.0	6.97	.008	0.40	-0.55

Note. I-het to IV-het and I-hom to IV-hom = items asking about sexual versus emotional infidelity for heterosexual and homosexual rivals respectively; χ^2 = test statistic for sex difference in endorsement rate ($df = 1$); OR = odds ratio (for HETIT items, $OR > 1$ means more men than women chose the heterosexual sexual infidelity threat as worse; for HOMIT items: $OR < 1$ means more women than men chose the homosexual sexual infidelity threat (compared to homosexual emotional infidelity) as worse).

Table 4

Correlations between background variables and heterosexual and homosexual rival scores for men and women.

	Men		Women	
	Heterosexual rival	Homosexual rival	Heterosexual rival	Homosexual rival
Age	-.08	-.06	-.04	.10
Relationship status (1 = partnered)	.01	.06	.01	.01
IAH	.23*	.24*	.06	.17
Bem masculinity	.23*	.18+	.02	-.01
Bem femininity	.04	.03	-.14	-.09

+ = $p < .10$; * = $p < .05$ (two-tailed).

Table 5

Sex differences in endorsement of sexual versus emotional infidelity as being most threatening with a heterosexual rival.

Item number	Endorsement rate (%)		χ^2	p	OR	d_{cox}
	Men	Women				
I-het	48	25	11.25	.001	2.80	0.62
II-het	24	13	3.82	.051	2.10	0.45
III-het	45	17	18.16	< .001	4.04	0.85
IV-het	65	38	13.37	< .001	2.20	0.48
V-het	49	27	9.55	.002	2.57	0.57
VI-het	56	33	10.38	.001	2.61	0.58

Note. χ^2 = test statistic for sex difference in endorsement rate ($df = 1$); OR = odds ratio, $OR > 1$ means more men than women chose the sexual infidelity threat as worse.

Table 6

Sex differences in endorsement of sexual versus emotional infidelity as being most threatening with a homosexual rival.

Item number	Endorsement rate (%)		χ^2	p	OR	d_{cox}
	Men	Women				
I-hom	20	56	24.50	< .001	0.20	-0.98
II-hom	15	26	3.21	.073	0.51	-0.41
III-hom	25	41	5.48	.019	0.48	-0.44
IV-hom	39	51	2.81	.094	0.61	-0.30
V-hom	35	48	3.60	.058	0.47	-0.46
VI-hom	40	46	0.65	.421	.79	-0.14

Note. χ^2 = test statistic for sex difference in endorsement rate ($df = 1$); OR = odds ratio, $OR < 1$ means more women than men chose the sexual infidelity threat as worse.

Figure 1

Changes in female participant response to sexual and emotional infidelity questions according to change in sex of the rival.

Note. All changes in response to the items were statistically significant (McNemar test).

Figure 2

Changes in male participant response to sexual and emotional infidelity questions according to change in sex of the rival.

Note. Changes in the response to Items 1, 3, 4, and 6 were statistically significant (McNemar test).