

## Research Article

# SEXUAL AND ROMANTIC JEALOUSY IN HETEROSEXUAL AND HOMOSEXUAL ADULTS

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**Abstract**—Several theorists have claimed that men are innately more upset by a mate's sexual infidelity and women are more upset by a mate's emotional infidelity because the sexes faced different adaptive problems (for men, cuckoldry; for women, losing a mate's resources). The present work examined this theory of jealousy as a specific innate module in 196 adult men and women of homosexual and heterosexual orientations. As in previous work, heterosexuals' responses to a forced-choice question about hypothetical infidelity yielded a gender difference. However, no gender differences were found when participants recalled personal experiences with a mate's actual infidelity. Men and women, regardless of sexual orientation, on average focused more on a mate's emotional infidelity than on a mate's sexual infidelity. Responses to hypothetical infidelity were uncorrelated with reactions to actual infidelity. This finding casts doubt on the validity of the hypothetical measures used in previous research.

Several evolutionary psychologists (Buss, 1995; Daly, Wilson, & Weghorst, 1982; Symons, 1979) have theorized that men should be upset over a mate's sexual infidelity and women over a mate's emotional infidelity because the sexes faced different threats to inclusive fitness in their ancestral history. Because fertilization occurs internally within the female, an ancestral man could never know for certain that a child was his own. A mate's sexual infidelity could lead a man to spend resources on genetically unrelated children, thus decreasing his inclusive fitness. Therefore, it has been hypothesized that men developed a specific innate psychological mechanism that responds to the threat of sexual infidelity with intense jealousy and thereby prevents cuckoldry. An ancestral woman faced no threat of cuckoldry because she always knew a child was her own and therefore was not under selective pressure to form a sexual-jealousy module. Instead, she faced a different threat—her mate might expend his resources on another woman's children. Thus, according to this theory, women developed an innate psychological mechanism that responds specifically to a mate's emotional infidelity (the assumption being that a man who is in love with a woman is likely to expend resources on her).

This analysis of gender differences in jealousy is frequently referred to as the evolutionary view of jealousy. However, this phrase is misleading. What is actually in question is not evolution, but whether natural selection shaped different specific jealousy mechanisms in men and women. Natural selection may have done so, but it could have also shaped less specific or less sexually dimorphic mechanisms (e.g., see Eagly & Wood, 1999; Harris & Pashler, 1995; and Miller & Fishkin, 1997). Therefore, a more accurate name for the hypothesis is "jealousy as a specific innate module" (J-SIM; Harris, 2000).

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### PREVIOUS RESEARCH ON GENDER DIFFERENCES IN JEALOUSY

The evidence cited to support gender differences in jealousy comes primarily from studies in which college students imagine a mate's hypothetical infidelity. Participants are asked to imagine a romantic relationship and to choose which of the following would be more upsetting: imagining their mate having sexual intercourse with another person or falling in love with another person. In the United States, gender differences have been consistently found with this forced-choice format (e.g., Buss, Larsen, Westen, & Semmelroth, 1992; DeSteno & Salovey, 1996a; Harris & Christenfeld, 1996a). Across these studies, most women predict that emotional infidelity would be more upsetting than sexual infidelity. Men tend to be more evenly split in their responses, with 40 to 60% predicting that sexual infidelity would be worse than emotional infidelity. Responses to the forced-choice question have also revealed gender differences in some European and Asian countries (Buunk, Angleitner, Oubaid, & Buss, 1996; Geary, Rumsey, Bow-Thomas, & Hoard, 1995). To date, at least 10 studies employing this forced-choice method have been published.

Journal articles, psychology textbooks (e.g., Atkinson, Atkinson, Smith, Bem, & Nolan-Hoeksema, 2000), and books for the general public (e.g., Pinker, 1997; Wright, 1994) have frequently presented these findings of gender differences in reactions to infidelity and their support for the J-SIM hypothesis as well established. However, the evidence for the alleged gender difference is debatable. First, several studies that have employed measures other than the forced-choice question have failed to find evidence for J-SIM among college students or have even revealed counterevidence (DeSteno & Salovey, 1996a; Harris, 2001b; Hupka & Bank, 1996). For example, one study (Harris, 2001b) found that both men and women rated a mate's hypothetical sexual one-night stand as more upsetting than the emotional equivalent.

Second, even the most robust evidence for gender differences in jealousy over infidelity—responses to hypothetical forced-choice questions—does not unequivocally support J-SIM. Across studies, the majority of women surveyed have predicted that emotional infidelity would be worse than sexual infidelity. However, contrary to J-SIM, the majority of men also have predicted that emotional infidelity would be worse. For example, more than 70% of the men from China, Germany, and the Netherlands reported, on at least one question, that emotional infidelity would be more upsetting than sexual infidelity (see DeSteno & Salovey, 1996b, and Harris & Christenfeld, 1996b, for further discussion).

Third, in contrast to an earlier widely cited psychophysiological study by Buss et al. (1992),<sup>1</sup> two recent studies failed to find evidence

1. This work assumed that greater reactivity was indicative of greater jealousy; see Harris (2000) for a discussion of alternative interpretations.

that the two genders differ in the relative amount of physiological reactivity elicited by imagining the two forms of infidelity (Grice & Seely, 2000; Harris, 2000). For example, contrary to J-SIM predictions, women with experience in sexual relationships showed physiological reactivity patterns similar to those of men (Harris, 2000).

Finally, although Daly et al. (1982) described ostensibly compelling evidence for J-SIM, claiming that sexual jealousy motivates men to commit spousal abuse and murder far more often than it motivates women, a recent review of this literature (Harris, 2001a) suggests that the spousal abuse and homicide data are equivocal at best, because men commit more violent crimes of all types. At most these data simply demonstrate that sexual jealousy is quite prevalent. Because base rates of violence are not considered, the data cannot indicate whether sexual jealousy disproportionately motivates violence in men relative to women. Moreover, Mullen and Martin (1994) found that, in contrast to J-SIM predictions, New Zealand men and women "were equally likely to report having been attacked by jealous partners" (p. 38).<sup>2</sup> Two other studies found that more women than men predicted that a mate's sexual infidelity would lead them to aggress against a rival or the mate (de Weerth & Kalma, 1993; Paul & Galloway, 1994). In sum, despite claims to the contrary, the data offered in support of J-SIM are far from clear-cut.

The previous research on gender differences in jealousy has been limited in three important respects. First, most of the work has been conducted with college students, the vast majority of whom are in their teens or early 20s. It is difficult to know if reports from individuals with more life experience would produce similar results. Second, almost all of the existing studies have relied on responses of people imagining hypothetical infidelity. Researchers have assumed that hypothetical judgments are valid indicators of actual responses to infidelity. No published work has examined both responses to the forced-choice questions about hypothetical infidelity and responses to actual infidelity. A few studies included participants older than their early 20s (Bailey, Gaulin, Agyei, & Gladue, 1994), but did not explore whether their participants had experienced infidelity and, if so, how they reacted to it. Therefore, it is unknown if the previous findings, on which most theories have been based, are valid reflections of what men and women feel when actually confronted with sexual and emotional infidelity. The third limitation of the existing literature is that most of the data have been collected from heterosexual individuals. It is not known how such findings may generalize to people with a homosexual orientation, particularly to those who have had actual experiences with infidelity. Information about these groups not only is valuable in its own right, but also may provide cues about the origin of gender differences in sexual jealousy.

### HOMOSEXUALITY AND THEORETICAL ISSUES REGARDING JEALOUSY

Some prominent evolutionary psychologists, particularly Symons (1979), have argued that although homosexuals differ from heterosexuals in their choice of sexual objects, in other respects their sexual inclinations generally parallel those of heterosexuals of their own sex. Therefore, according to Symons (1979), the study of homosexual relationships can inform us about the nature of gender differences:

There is no reason to suppose that homosexuals differ systematically from heterosexuals in any way other than sexual object choice . . . male sexuality and female sexuality are fundamentally different, and . . . sexual relationships between men and women compromise these differences; if so, the sex lives of homosexual men and women—who need not compromise sexually with members of the opposite sex—should provide dramatic insight into male sexuality and female sexuality in their undiluted states. Homosexuals are the acid test for hypotheses about sex differences in sexuality. (p. 292)

Symons went on to suggest that sexual jealousy is a primary reason that homosexual men are allegedly unsuccessful in maintaining long-term, committed sexual relationships. He reasoned that all men, regardless of sexual orientation, are innately disposed to want sexual variety. The difference between straight men and gay men is that the latter can more readily find willing partners for casual sex and thereby satisfy this innate desire for sexual variety. However, according to Symons, gay men, like straight men, are also wired up to be sexually jealous of their mates. The innate combination of desire for sexual variety and tendency toward sexual jealousy results in unstable relationships. In this view, gay men, like straight men, should be more bothered by sexual infidelity than by emotional infidelity, and lesbians, like straight women, should be more bothered by emotional infidelity than by sexual infidelity.

Only three studies have compared the reactions to infidelity among individuals with homosexual orientations versus heterosexual orientations (Bailey et al., 1994; Bringle, 1995; Hawkins, 1990). These studies leave some important questions unanswered. For example, Bailey et al. did not focus primarily on jealousy and infidelity, and neither Bringle nor Hawkins included women in their studies. Moreover, none of these researchers specifically inquired about participants' actual experiences with infidelity. Bailey et al. employed the forced-choice hypothetical question used in previous research and found that, contrary to the J-SIM hypothesis, the majority of gay men and lesbians predicted that emotional infidelity would be worse than sexual infidelity. However, one might argue that inquiries about hypothetical situations do not provide a fair test of Symons's (1979) hypothesis. Perhaps reports concerning actual infidelity would reveal that men do focus on a mate's sexual infidelity.

Nonetheless, differences in jealousy between homosexuals and heterosexuals need not stem directly from possible underlying psychological differences between homosexuals and heterosexuals. Rather, they might reflect quasi-rational reactions to the behaviors of potential and actual mates, as well as differing attitudes about what is acceptable in relationships. Like heterosexuals, most gay men and lesbians report that having a permanent live-in partner is important to them (Bell & Weinberg, 1978), and rank affection as one of the most important traits in a partner. However, some research suggests that homosexuals and heterosexuals differ in the importance they place on sexual exclusivity. Using matched samples, Peplau and Cochran (1980, cited in Peplau & Cochran, 1983) asked heterosexuals and homosexuals to rate the importance of various aspects of romantic relationships. Although few group differences were found, one striking difference did emerge: Sexual exclusivity was much more important to heterosexual men and women than to gay men and lesbians. This difference bears on predictions regarding jealousy. Theorists adopting a social-cognitive perspective suggest that people are prone to jealousy in domains that are especially important to them, and that jealousy rises particularly in response to threats to relationship rewards or self-concept (Salovey & Rodin, 1984; Salovey & Rothman, 1991; White & Mullen, 1989). Therefore, homosexual individuals might an-

2. When asked about their own jealousy, men and women also did not differ in their concern over loss of sexual exclusivity.

ticipate feeling less upset over sexual infidelity than heterosexual individuals because it is less relevant to their self-concepts or because it does not hold the same types of threatening implications for their primary relationships.

The present research was an attempt to overcome the limitations of previous research by examining responses to imagined and real infidelity in heterosexual and homosexual adults of varying ages. The results should be quite informative with regard to the J-SIM theory, which predicts that men and women should differ in their reactions to different forms of infidelity, regardless of sexual orientation.

## METHOD

### Participants and Procedure

Participants were recruited in southern California through newspapers, weekly periodicals, and flyers. In addition, questionnaires were handed out in public places (e.g., parks and beaches). Homosexual individuals were also recruited from the San Diego Lesbian and Gay Men Community Center, as well as from various other organizations. Participants were mailed or given an anonymous questionnaire with a preaddressed return envelope so that they could fill out the questionnaire in the privacy of their own homes. The lack of face-to-face contact with researchers helped ensure that participants would feel comfortable answering the personal questions honestly.

A total of 210 individuals participated. Sexual orientation was determined by participants' own categorical classifications. Ten women and 4 men reported having a bisexual orientation and were excluded from all analyses. The remaining sample consisted of 48 homosexual women, 50 homosexual men, 49 heterosexual women, and 49 heterosexual men. The groups did not significantly vary in age, with means of 36.9 years ( $SD = 11.1$ ), 36.7 years ( $SD = 13.1$ ), 36.4 years ( $SD = 10.5$ ), and 38.5 years ( $SD = 13.5$ ), respectively.

### Measures

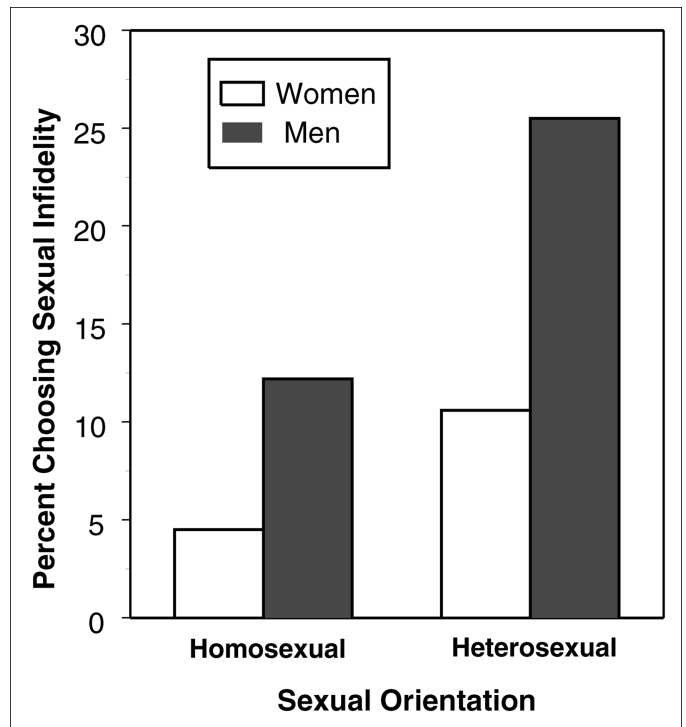
#### *Hypothetical reactions to infidelity*

Participants were asked the following (taken from Buss et al., 1992):

Please think of a serious romantic relationship you've had in the past, currently have, or would like to have. Imagine that you discover that your romantic partner has become interested in someone else. What would upset you more? (1) Imagining your partner trying different sexual positions with that other person? (2) Imagining your partner falling in love with that other person?

#### *Experience with actual infidelity*

Participants were asked, "Have you had any experiences in which someone you were romantically involved with 'cheated on' you?" If they answered "yes," they were instructed to recall the most recent experience of this sort and to answer the following questions using a 5-point scale (1 = *not at all*; 5 = *completely*): "To what degree did you focus on the emotional aspects of your partner's infidelity?" and "To what degree did you focus on the sexual aspects of your partner's infidelity?" In addition, the heterosexual participants were asked, "Did your relationship with your partner end over this infidelity?" and "If yes, who ended it?"



**Fig. 1.** Percentage of participants predicting greater distress over sexual infidelity than over emotional infidelity on the forced-choice hypothetical question.

## RESULTS AND DISCUSSION

### Hypothetical Infidelity

Results for the forced-choice infidelity question are displayed in Figure 1. In line with previous work, heterosexual men were more likely than heterosexual women to pick sexual infidelity as more upsetting than emotional infidelity:  $\chi^2(1, N = 94) = 3.6, p < .06$ . An examination of responses by sexual orientation revealed that a greater percentage of the heterosexual sample than the homosexual sample predicted that sexual infidelity would be worse than emotional infidelity,  $\chi^2(1, N = 187) = 3.70, p = .05$ .

Two results from the hypothetical inquiry are consistent with the J-SIM model: (a) Virtually all the lesbians predicted emotional infidelity would be worse than sexual infidelity, and (b) more heterosexual men than heterosexual women predicted that sexual betrayal would be the more upsetting form of infidelity.

However, the hypothetical data are inconsistent with J-SIM in several ways. First, despite the heterosexuals' gender difference in responses to the hypothetical question, the majority of heterosexual males (74%) chose emotional infidelity as more upsetting than sexual infidelity. This is in keeping with many, though not all, findings in the literature (Buunk et al., 1996; Geary et al., 1995). Second, when forced to choose, gay men overwhelmingly predicted that emotional infidelity would be more troubling than sexual infidelity. Thus, the data from neither of the male groups support the claims of J-SIM proponents that the sexual-jealousy module is ubiquitous and powerful. Finally, sexual orientation was almost as good as gender at predicting hypothetical responses. That is, more heterosexual than homosexual individuals picked sexual infi-

## Jealousy in Heterosexual and Homosexual Adults

delity as worse than emotional infidelity. If the J-SIM account is correct, it is unclear why sexual orientation would affect responses in this way.

On first blush, the finding that few homosexual men and women predicted greater upset to sexual than to emotional infidelity might seem reasonable from a J-SIM perspective because, like heterosexual women, neither of these groups faces the adaptive problem of cuckoldry. This explanation assumes that people are consciously trying to reason what will increase or decrease their inclusive fitness and become upset accordingly. However, such a view is (quite reasonably) disavowed by most contemporary evolutionary psychologists (e.g., Daly & Wilson, 1983).<sup>3</sup> For example, if people were consciously trying to increase their inclusive fitness, then the use of birth control should be rare. Instead, evolutionary psychologists argue, natural selection has differentially shaped the emotional responses of men and women to the two forms of infidelity. These emotions were selected for because they produced behaviors that, on average, tended to increase inclusive fitness in the ancestral environment.

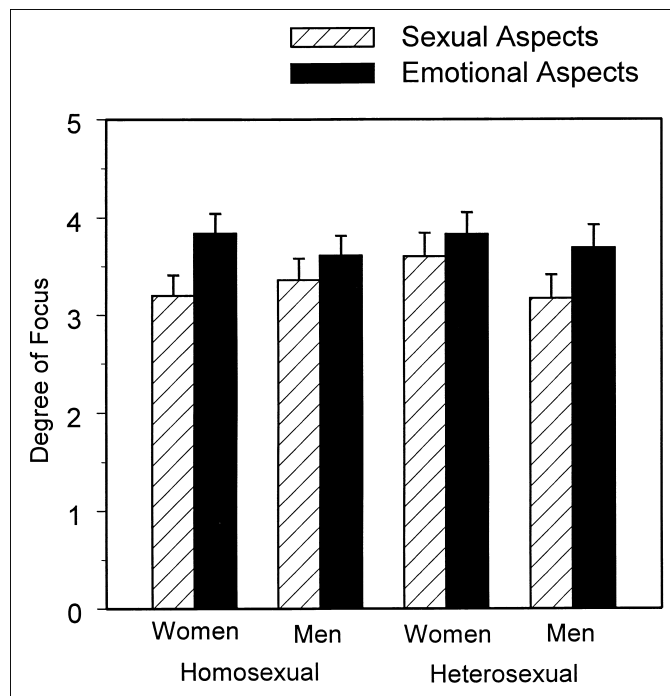
### Actual Experience With Infidelity

Approximately 70% of the participants reported having experienced a mate cheating (79.2% of homosexual women, 75.5% of homosexual men, 65.3% of heterosexual women, 58.3% of heterosexual men). We performed a 2 (aspect of infidelity)  $\times$  2 (orientation)  $\times$  2 (gender) mixed analysis of variance to determine whether the degree of focus participants reported differed between groups. There was a significant effect of aspect of infidelity,  $F(1, 128) = 8.50, p < .01$ . All groups on average reported focusing more on the emotional than on the sexual aspects of the infidelity (see Fig. 2). This main effect did not interact with gender nor with sexual orientation ( $F_s < 0.04$ ). That is, when asked to recall real experiences, as opposed to imagining hypothetical scenarios, men and women showed no difference in the degree to which they were upset by emotional versus sexual infidelity. The fact that emotional infidelity was more bothersome to both genders seriously challenges the hypothesis that men and women have sexually dimorphic mechanisms for responding to different forms of infidelity.

Additional data from the heterosexual participants are also inconsistent with the notion that the two genders have sexually dimorphic jealousy mechanisms. Similar numbers of women (58%) and men (57%) reported that their relationship ended over their mate's affair. However, there was a significant gender difference in who terminated the relationship—94% of the women said that they were the one to end it, but only 43% of the men said they ended it,  $\chi^2(1, N = 32) = 11.2, p < .01$ . Theorists such as Daly and Wilson (1993) have graphically described the rage that is purportedly a universal male reaction to sexual infidelity, suggesting that women lack such reactions. Such an account seems inconsistent with the finding that so many men were willing to continue a relationship with an unfaithful mate.

The final analysis used a point biserial correlation to examine the relationship between responses to hypothetical and real infidelity (a difference score for real infidelity was obtained by subtracting the degree of focus on sexual aspects from the degree of focus on emotional aspects). No hint of a correlation was revealed,  $r(126) = .003, n.s.$ , suggesting that responses

3. As an anonymous reviewer pointed out, J-SIM does not deny that reasoning may play a role in determining whether infidelity is occurring (e.g., interpreting lipstick smudges), but this should not be equated with consciously calculating inclusive fitness.



**Fig. 2.** Reactions to a mate's actual infidelity: Mean degree (1 = *not at all*; 5 = *completely*) to which participants reported focusing on sexual and emotional aspects of the infidelity. Error bars represent standard errors.

to the hypothetical infidelity scenario have little to do with participants' reactions to a mate's real infidelity. People who chose sexual infidelity as worse on the forced-choice question were not merely indifferent in their relative focus on the two aspects of a mate's actual affair. This group, like the sample as a whole, reported focusing to a greater extent on the emotional than on the sexual aspects of their mates' infidelity (mean difference in relative focus was .39). This suggests that even if a forced-choice format had been used to assess reactions to real infidelity, the results would have been inconsistent with the responses to the hypothetical question.<sup>4</sup>

Although the instructions for the hypothetical scenario included the option of thinking of a past relationship, participants apparently did not draw on their experiences with a mate's actual infidelity when responding to the hypothetical scenario. In general, it may be that when people read a hypothetical infidelity question, they do not spend much time truly trying to conjure up an actual relationship or thinking of past experiences with infidelity. Instead, a forced-choice hypothetical question may tap into various attitudes and beliefs that have little to do with people's actual emotional reactions when confronted with real infidelity.<sup>5</sup> In the present study, the hypothetical infidelity question preceded the real infidelity questions. One might have

4. Furthermore, in an analysis that grouped participants according to their response to the hypothetical forced-choice question, the percentage of people who focused more on the sexual aspects of real infidelity versus the percentage who focused more on the emotional aspects did not differ across the two groups.

5. Responses to the hypothetical scenario were analyzed separately for those people who did and did not have experiences with a mate's infidelity. No significant differences emerged.

expected demand characteristics to have led participants to make their reports regarding actual infidelity consistent with their responses to the hypothetical question a few minutes earlier. Evidently this did not happen. Of course, responses to hypothetical questions may be more malleable than responses to actual experiences; perhaps if the order of presentation had been reversed, then people might have made their responses to the hypothetical question more consistent with their responses to the questions about real infidelity. However, presenting the hypothetical question first is in keeping with all previous research in this area, which has solely examined responses to hypothetical questions with people who either do not have experiences with a mate's infidelity or are not specifically asked to think about their experiences with actual infidelity. These findings cast doubt on the validity of the hypothetical measure that has been used in most previous research.

It should be acknowledged that, as in most research, this sample was not randomly selected from the population at large, and therefore generalizability is limited. However, several aspects of this study suggest that its findings are probably more generalizable than the typical findings from college students. Participants were drawn from a wide age range, were recruited through various means and at various locations, and had substantial experience with sexual relationships. During recruitment, participants did not know that the study's primary focus was on reactions to infidelity. Although there is no substitute for random selection of participants (a practical impossibility), these aspects of the study should at least have reduced some of the threat to external validity. This work also relied on people's memories regarding experience with infidelity. Although memory bias cannot be ruled out, recall of actual events seems preferable to measures of purely hypothetical events. These limitations notwithstanding, the present conclusions are also supported by several of the findings discussed in the introduction.

The J-SIM model makes strong predictions about the emotional reactions of men and women, and its appeal rests in its attempt to uncover the ultimate causal mechanism for any gender differences in jealousy. Unfortunately, steadily accumulating evidence suggests that both men and women are bothered by both emotional and sexual infidelity, seriously undermining the J-SIM model. If emotional jealousy was selected for because it helps women prevent loss of a mate's resources, then how did men come by such a mechanism? Moreover, if men have a sexual-jealousy mechanism, but women do not, then why was this difference not evident in the adults who participated in the present study? In sum, the farther one moves away from asking college students the forced-choice question regarding hypothetical infidelity toward assessing real infidelity with adults, the less support one finds for the J-SIM hypothesis.

Given that jealousy is the third or fourth leading motive in spousal homicide and abuse, it is clearly an emotion worthy of investigation. However, the J-SIM model creates what now appears to be a false dichotomy, alleging that men are sexually jealous and women romantically jealous. Other approaches seem likely to be more fruitful. Individuals clearly vary in their susceptibility to feelings of jealousy. From a cognitive-social perspective, the degree of jealousy will be determined by the appraisals people make regarding the seriousness of a threat. In essence, people ask themselves questions about such issues as a mate's motivation for an affair and the implications the affair has for them (e.g., "Is she doing this because I don't satisfy her sexually?" or "Does this mean he no longer loves me?"). The answers to such questions will likely have a strong impact on the emotional response

to infidelity. Future work would benefit from exploring these types of appraisals more fully.

**Acknowledgments**—This research was supported by National Science Foundation Grant BCS-9983487 and National Institute of Mental Health Grant R01-MH61626. I thank all the participants and gratefully acknowledge the committee of the San Diego Lesbian and Gay Men Community Center for assisting in recruiting participants and Noriko Coburn for assisting in collecting the data.

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## Jealousy in Heterosexual and Homosexual Adults

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(RECEIVED 11/1/00; REVISION ACCEPTED 3/6/01)