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ORIGINAL PAPER

Mate Retention Behavior of Men and Women in Heterosexual and Homosexual Relationships

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Abstract Comparing the behavior of heterosexual and homosexual persons can provide insight into the origins of heterosexual sex differences in psychology. Evidence indicates that, aside from sexual partner preference, the mating psychology of homosexual men is sex-typical whereas that of homosexual women tends to be more sex-atypical. The current study examined one aspect of mating psychology, mate retention behavior, and tested whether homosexual men and women were sex-typical or sex-atypical for those mate retention tactics where heterosexual men and women differed. Men and women in heterosexual and homosexual relationships were asked to provide information regarding their partners' mate retention behavior by using the Mate Retention Inventory Questionnaire. Heterosexual men and women differed significantly for six of the 19 mate retention tactics considered. With respect to the six mate retention tactics where heterosexual sex differences existed, homosexual men behaved in a sex-typical manner for five of the tactics, whereas homosexual women behaved in a sex-atypical manner for all six tactics. We discuss the significance of these findings for explaining the origins of the mate retention behavior of heterosexual men and women. In addition, we consider what the pattern of sex-typical and sex-atypical mating psychology among homosexual men and women, respectively, suggests in regard to sex differences in the development of mating psychology and the development of homosexual persons.

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Introduction

In humans, long-term relationships with reproductive partners (i.e., mates) are important for the lifetime reproductive success of men and women (e.g., Buss, 1988a; Mellen, 1981). Consequently, after establishing such a relationship, an individual has to successfully retain his or her mate. Citing evidence for the non-monogamous mating systems that characterized the human evolutionary past, as well as the cross-cultural ubiquity of divorce, Buss and Shackelford (1997) argued that mate retention was, and remains, a significant problem for humans. In general, individuals can retain mates by competing with same-sex rivals and maintaining their attractiveness.

Research shows that the mate retention behavior of heterosexual men and women differs in terms of the tactics they use to compete with their same-sex rivals, as well as the tactics they use to remain attractive to their reproductive partners (Buss, 1988b; Buss & Shackelford, 1997). To avoid the loss of their reproductive partners to same-sex rivals, men conceal their mates, make threats toward sexual competitors, and act violently toward sexual competitors. Men's use of these latter two tactics fits well with previous research demonstrating that men exhibit physical aggression more frequently, and with greater severity, than women (Campbell, 2005; Daly & Wilson, 1988). In addition, men attempt to remain attractive to their relationship partners by acquiescing to their partners' wishes and demonstrating their wealth. Men's use of these tactics to attract women dovetails nicely with previous research demonstrating that women place greater importance

than men on a partner's willingness to form long-term bonds and provide resources that can be allocated to the production of offspring (for a review of this literature, see Schmitt, 2005).

In contrast, women avoid the loss of their reproductive partners to same-sex rivals by punishing their partners' threats of being sexually unfaithful and by verbally declaring their relationships with their partners to others. Women's use of these two tactics fits well with previous research demonstrating that women exhibit relational aggression more frequently than men (Campbell, 2005). In addition, women attempt to attract their relationship partners by threatening that they will not be sexually faithful and enhancing their physical appearance. Women's use of these tactics to attract men dovetails nicely with previous research demonstrating that men place greater importance than women on a partner's sexual fidelity and physical attractiveness (for a review of this literature, see Schmitt, 2005).

Numerous perspectives have been advanced to account for sex differences in humans, including sex differences in mating psychology (e.g., Bem, 1981; Collaer & Hines, 1995; Eagly & Wood, 1999; Schmitt, 2005; Simon & Gagnon, 1987). As Bailey, Gaulin, Agyei, and Gladue (1994) note, comparing the mating psychology of homosexual and heterosexual men and women can help differentiate among several broad cognitive, social, and biological hypotheses regarding the origins of heterosexual sex differences in mating psychology, thereby narrowing the field of candidate hypotheses. Symons (1979) argued that "Homosexuals are the acid test for hypotheses about sex differences in sexuality" (p. 292). This is because sexual activity is unconstrained by the opposite-sex in a homosexual context and, as such, "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" (Symons, 1979, p. 292).

There are four possible ways that sexual orientation might relate to heterosexual sex differences in mating psychology. First, heterosexual men and woman may differ, but same-sex individuals may exhibit identical behavioral patterns independent of their sexual orientation (Bailey et al., 1994). Second, heterosexual men and woman may differ and homosexual individuals may be sex-atypical with respect to a particular sexually dimorphic aspect of mating psychology (Bailey et al., 1994). In such instances, homosexual individuals may more closely resemble opposite-sex heterosexual individuals in terms of the particular aspect of mating psychology in question or they may exhibit a pattern that is intermediate between same-sex and opposite-sex heterosexuals. Third, homosexual persons may exhibit a pattern that exaggerates a heterosexual sex difference above and beyond that exhibited by their same-sex heterosexual counterparts (Bailey et al., 1994). Fourth, heterosexual men and woman may differ and homosexual men might be hyperfeminine relative to heterosexual women, whereas homosexual women might be hypermasculine relative to heterosexual men.

Previous work on the mating psychology of homosexual individuals has shown different patterns among gay men and lesbians. Gay men tend to be sex-typical for the majority of domains of mating psychology previously examined. Bailey et al. (1994) found that, in comparison to heterosexual men, homosexual men were similar in terms of their interest in uncommitted sex and visual sexual stimuli, as well as the importance they placed on a partner's social status and physical attractiveness. Gay and heterosexual men have similar age preferences for sexual partners (Kenrick, Keefe, Bryan, Barr, & Brown, 1995; Silverthorne & Quinsey, 2000). Also, gay and heterosexual men's sexual orientation identities (i.e., status as homosexual and heterosexual, respectively) are concordant with their self-reported patterns of sexual attraction, or lack of sexual attraction, to men and women (Latty, Sullivan, & Bailey, 2004; Rullo, Kinnish, & Strassberg, 2006) as well as their genital arousal in response to sexual stimuli (Chivers, 2006; Chivers, Rieger, Latty, & Bailey, 2004). Finally, a number of studies have shown that, compared to heterosexual men, homosexual men are more concerned with a partner's hypothetical emotional infidelity than they are with a partner's hypothetical sexual infidelity (Bailey et al., 1994; Bringle, 1995; Harris, 2002). However, Harris (2002) has shown that no such sexual orientation differences exist in men, in terms of their reactions towards a partner's *actual* emotional or sexual infidelity, and has argued that these results cast doubt on the validity of the hypothetical measures used in previous research.

Lesbians show a more mosaic pattern, with some aspects of mating psychology being sex-typical and others being sex-atypical. They tend to be sex-typical for interest in uncommitted sex, sexual versus emotional infidelity concerns, importance of a partner's physical attractiveness, and sociosexuality (Bailey et al., 1994; Harris, 2002). In contrast, lesbians have been shown to differ from heterosexual women in terms of their interest in visual sexual stimuli, the importance they place on a partner's status (Bailey et al., 1994), as well as their partner age preferences (Kenrick et al., 1995; Silverthorne & Quinsey, 2000). Also, lesbians' sexual orientation identities (i.e., status as homosexual) are concordant with their self-reported patterns of sexual attraction, or lack of sexual attraction, to men and women (Rullo et al., 2006) as well as their genital arousal in response to stimuli depicting individuals engaged in masturbation (Chivers, 2006) whereas heterosexual women are not concordant with their sexual orientation identities (i.e., status as heterosexual) for these measures.

Here, we examined mate retention behavior and assessed how men and women in homosexual relationships behaved

relative to men and women in heterosexual relationships. To date, only a few studies have analyzed the influence of sexual relationship type on mate retention behavior. Vasey (2004) showed that female Japanese macaques (*Macaca fuscata*) employed male-typical tactics of aggressive competition and sexual coercion to retain same-sex sexual partners when male competitors tried to usurp those partners. In contrast, Hunt, Newman, Warner, Wingfield, and Kaiwi (1985) showed that, in female western gulls (*Larus occidentalis*) that form same-sex pairs, the partners did not exhibit male-typical mate retention behaviors. For example, they did not court each other in a male-typical manner (e.g., head tossing and courtship feeding), and they did not react to intruders in a male-typical manner.

Our objectives in this investigation were twofold. First, we sought to identify mate retention tactics for which heterosexual sex differences existed. Second, with respect to those mate retention tactics, we examined whether, and in what ways, homosexual men and women behaved in a sex-typical or sex-atypical manner. We considered how this information could be used to narrow the range of candidate hypotheses for baseline heterosexual sex differences in mate retention tactics where they existed. In light of the previous work on the mating psychology of homosexual men, we were particularly interested in determining whether they tended to be sex-typical in terms of their mate retention behavior. Likewise, we were particularly interested in assessing whether the mate retention behavior of homosexual women was sex-atypical, in keeping with previous findings pertaining to their mating psychology, or sex-typical, in line with some of the available cross-species data.

Method

Participants

Participants were recruited by advertising the study in four ways: (1) on public notice boards at the University of Lethbridge, (2) on public notice boards at the University of Alberta, (3) at the Toronto Pride festival, and (4) by e-mailing 110 lists belonging to university and community gay, lesbian, bisexual, and transgender (GLBT) as well as GLBT ally organizations located across Canada. In all cases, it was stated that the study focused on understanding how sexual behavior and sexual preference influence behavior within relationship contexts. Those people interested in participating completed a paper and pencil questionnaire by either coming in to our on-campus research office or receiving the questionnaire through the mail. A third option of completing the questionnaire on the Internet was also available.

A total of 355 individuals who indicated that they were involved in a relationship, or had been during the past year, were included as participants in the study. Each participant provided information regarding his or her relationship partner's mate retention behavior. Participants' partners were divided into four groups based on sex and whether the relationship context was homosexual or heterosexual. The number of partners for each group was: 83 women in heterosexual relationships, 120 men in heterosexual relationships, 73 women in homosexual relationships, and 79 men in homosexual relationships (hereto referred to as heterosexual women, heterosexual men, homosexual women, and homosexual men, respectively).

We assessed whether the four groups differed with respect to variables that may have influenced mate retention behavior. Hence, we tested for group differences in age of participant (in years), age of partner (in years), age disparity (age of participant – age of partner), length of relationship (in months), and relationship closeness (measured using a 7-point Likert scale with 1 = "not close at all," and 7 = "extremely close"). One-way analysis of variance (ANOVA) showed that group differences existed for age of participant, $F(3, 351) = 31.33$, $p < .001$, age of partner, $F(3, 351) = 25.67$, $p < .001$, age disparity, $F(3, 351) = 2.69$, $p < .05$, and relationship closeness, $F(3, 351) = 2.87$, $p < .05$, but not for length of relationship, $F(3, 351) = 1.67$, $p = .17$. The means $\pm$ SD for all of these variables according to sex of partner (i.e., man or woman) and relationship type (i.e., heterosexual or homosexual) are shown in Table 1. Fisher's Least Significant Difference (LSD) for multiple comparisons was used in *post hoc* tests to determine specific group differences.

Male participants in heterosexual relationships were older than female participants in heterosexual relationships ($p < .01$), but younger than male participants in homosexual relationships ($p < .001$) and female participants in homosexual relationships ($p < .001$). Female participants in heterosexual relationships were also younger than both male participants in homosexual relationships ($p < .001$) and female participants in homosexual relationships ($p < .001$). There was no significant difference for male and female participants in homosexual relationships ($p = .35$).

The ages of male and female partners in heterosexual relationships did not differ ($p = .41$). Male partners in heterosexual relationships were younger than the partners in male homosexual relationships ($p < .001$) and female homosexual relationships ($p < .001$). Female partners in heterosexual relationships were younger than the partners in male homosexual relationships ($p < .001$) and female homosexual relationships ($p < .001$) as well. There was no difference for male and female partners in homosexual relationships ($p = .67$).

For age disparity (participant – partner), male partners in heterosexual relationships differed from female partners in heterosexual relationships ($p < .05$) and male partners in

Table 1 Means and SDs for relationship variables according to partner sex and relationship type

	HeM		HeW		HoM		HoW	
	M	SD	M	SD	M	SD	M	SD
Age of Participant (in years)	20.89	3.23	23.73	7.75	30.47	11.84	28.97	8.34
Age of Partner (in years)	22.10	4.55	23.01	6.88	29.94	10.24	29.4	9.34
Age Disparity (Participant – Partner)	– 1.25	3.11	.51	2.75	.41	7.84	.01	5.74
Relationship Length (in months)	22.05	36.72	24.61	43.26	32.41	46.84	32.95	37.24
Relationship Closeness[a]	5.86	1.43	5.63	1.29	5.28	1.75	5.67	1.39

Note. Heterosexual men (HeM), heterosexual women (HeW), homosexual men (HoM), and homosexual women (HoW).

[a]Absolute range, 1–7.

homosexual relationships ($p < .05$), but not female partners in homosexual relationships ($p = .54$). Female partners in heterosexual relationships did not differ from male partners in homosexual relationships ($p = .90$) or female partners in homosexual relationships ($p = .54$). Male partners in homosexual relationships did not differ from female partners in homosexual relationships ($p = .63$).

For relationship closeness, male partners in heterosexual relationships had higher ratings than male partners in homosexual relationships ($p < .01$), but similar ratings to female partners in heterosexual relationships ($p = .28$) and female partners in homosexual relationships ($p = .93$). Female partners in heterosexual relationships did not differ on this measure from male partners in homosexual relationships ($p = .13$) or female partners in homosexual relationships ($p = .38$). The ratings for male partners in homosexual relationships were lower than the ratings for female partners in homosexual relationships ($p < .05$).

Measures

A version of the Mate Retention Inventory Questionnaire (MRIQ) similar to the one developed by Buss (1988b) was used in the current study. The MRIQ was created by using an act nomination procedure developed by Buss and Craik (1983). Buss (1988b) asked university undergraduates to list specific behaviors that they or people they knew performed as means of avoiding the loss of relationship partners to others. Buss (1988b) then used the nominated acts to create the MRIQ and organized the acts into two broad types: (1) "Intersexual Manipulations" (occurring between members of the dyadic relationship) and (2) "Intrasexual Manipulations" (occurring between one member of the dyadic relationship and a third party). These two broad categories were further subdivided into five separate subcategories: "Positive Inducements occurring Intersexually," "Direct Guarding," "Negative Inducements Occurring Intersexually," "Public Signals of Possession," and "Negative Inducements Occurring Intrasexually." Within each of the five subcategories were discrete types of behavioral tactics, of which there were 19 in total. Thus, the two broad categories, five subcategories, and 19 tactics comprised the mate retention behavior taxonomy. This taxonomy can be seen in Table 2. Shackelford, Goetz, and Buss (2005) established the psychometric validity of the MRIQ by showing concordance among self and partner ratings of how often individuals engaged in the different mate retention tactics.

Participants were given the following instructions: "On the following pages are listed a series of acts or behaviors. In this study, we are interested in how often, if at all, your partner has performed each act within the past year, within the context of your relationship with her/him. Please circle the word that represents your most accurate estimate of how often (s)he has performed each act within the past year. If (s)he has not performed the act at all within the past year, circle "Never;" circle "Rarely," "Sometimes," "Often" to represent your best estimate of the relative frequency with which (s)he has performed each act in the past year." Ratings of "Never," "Rarely," "Sometimes," and "Often" were coded as 1, 2, 3, and 4, respectively. The version of the MRIQ used in this study included 103 of the 105 behaviors included in the original questionnaire developed by Buss (1988b). The original version contained two items regarding pregnancy in the "Commitment Manipulation" category, one of which was removed to avoid redundancy. Also, the one remaining item pertaining to either becoming pregnant or impregnating one's partner was not included for men in homosexual relationships due to a lack of applicability. One of the two acts referring to wearing fashionable clothes in the "Appearance Enhancement" category was also removed to avoid redundancy. See Buss (1988b) for a complete list of the acts that comprise the mate retention tactic taxonomy.

Results

Standardized inter-item reliabilities (alphas) were calculated. Alpha coefficients for each of the mate retention tactics according to group, as well as overall, are presented in Table 2. In general, reliability values were appreciable.

Due to group differences in age of participant, age of partner, age disparity, and relationship closeness, these variables were controlled for in the analyses pertaining to mate

Table 2 Standardized inter-item reliabilities (alphas) for each of the mate retention tactics according to group and all groups combined

Category	HeM	HeW	HoM	HoW	Combined
Intersexual Manipulations					
Direct Guarding					
Vigilance	.85	.84	.88	.82	.86
Concealment of Mate	.81	.78	.66	.79	.75
Monopolize Mate's Time	.87	.83	.81	.75	.83
Negative Inducements					
Commitment Manipulation	.38	.32	.61	.52	.50
Threaten Infidelity	.74	.90	.76	.80	.79
Emotional Manipulation	.90	.87	.86	.84	.87
Punish Infidelity Threat	.83	.80	.74	.78	.81
Derogation of Competitors	.82	.86	.84	.71	.84
Positive Inducements					
Emphasizing Love and Care	.76	.68	.60	.65	.69
Sexual Inducements	.73	.69	.45	.68	.66
Submission and Debasement	.73	.60	.69	.70	.67
Resource Display	.81	.88	.81	.79	.84
Appearance Enhancement	.86	.73	.70	.77	.79
Intrasexual Manipulations					
Public Signals of Possession					
Possessive Ornamentation	.40	.63	.58	.56	.53
Verbal Signals of Possession	.50	.49	.75	.61	.59
Physical Signals of Possession	.77	.75	.73	.79	.77
Negative Inducements					
Derogation of Mate to Competitors	.51	.69	.74	.62	.63
Intrasexual Threats	.86	.83	.75	.74	.84
Violence	.96	.64	.73	.71	.82

Note. Heterosexual men (HeM), heterosexual women (HeW), homosexual men (HoM), and homosexual women (HoW).

retention behavior. The main effects of sex and sexual orientation and the interaction of these factors were not relevant to assessing how homosexual individuals behaved relative to same- and opposite-sex heterosexual individuals. Therefore, the mate retention behavior of the four groups was compared using one-way analysis of covariance (ANCOVA). The relevant direct group comparisons were performed using Fisher's LSD, but only when the results of the ANCOVAs were statistically significant as a means of limiting the likelihood of Type I error.

Table 3 lists the results of the one-way ANCOVAs (F-values) for each of the mate retention categories as well as the means ± SE for each of the four groups. These analyses yielded statistically significant effects of group toward mate retention behavior for 14 of the 19 mate retention tactics. Below, we detail the specific group differences that existed for these 14 tactics according to the sub-categories to which they belonged.

Intersexual manipulations: Direct guarding

The levels of significance for group differences as well as the effect sizes (Cohen's d) for heterosexual women, homosexual men, and homosexual women relative to heterosexual men for all tactics within the subcategory of "Direct Guarding" are presented in Fig. 1. Heterosexual men engaged in the tactics of "Vigilance" and "Monopolize Mate's Time" more than homosexual women. Heterosexual women engaged in "Vigilance" more than homosexual men and women, and "Monopolize Mate's Time" more than members of the other three groups.

Intersexual manipulations: Negative inducements

The levels of significance for group differences as well as the effect sizes (Cohen's d) for heterosexual women, homosexual men, and homosexual women relative to heterosexual men for all tactics within the subcategory of "Negative Inducements Occurring Intersexually" are presented in Fig. 2. Heterosexual men engaged in "Punish Infidelity Threat" and "Derogation of Competitors" less than heterosexual women. Heterosexual men performed "Commitment Manipulation" less than homosexual men, and "Emotional Manipulation" more than homosexual men. In comparison to homosexual women, heterosexual men engaged in "Emotional Manipulation" and "Punish Infidelity Threat" more often. Heterosexual women engaged in "Commitment Manipulation" less than homosexual men, but engaged in "Emotional Manipulation," "Punish Infidelity Threat," and "Derogation of Competitors" more than homosexual men. Heterosexual women

Table 3 Results of the one-way ANCOVAs (F-values) comparing the mate retention behavior of heterosexual men (HeM), heterosexual women (HeW), homosexual men (HoM), and homosexual women (HoW)

Category[a]	HeM		HeW		HoM		HoW		
	M	SE	M	SE	M	SE	M	SE	F
Intersexual Manipulations									
Direct Guarding									
Vigilance	1.67	.05	1.78	.06	1.60	.06	1.45	.06	5.17**
Concealment of Mate	1.26	.05	1.28	.05	1.33	.06	1.13	.06	2.36
Monopolize Mate's Time	1.55	.06	1.77	.07	1.47	.08	1.30	.08	6.35***
Negative Inducements									
Commitment Manipulation	1.65	.06	1.60	.07	1.91	.08	1.53	.08	4.79**
Threaten Infidelity	1.48	.05	1.40	.07	1.50	.07	1.36	.07	1.02
Emotional Manipulation	1.56	.06	1.56	.07	1.37	.07	1.29	.07	3.77*
Punish Infidelity Threat	1.50	.05	1.66	.06	1.36	.06	1.28	.06	6.94***
Derogation of Competitors	1.36	.05	1.63	.06	1.45	.06	1.22	.06	9.31***
Positive Inducements									
Emphasizing Love and Care	3.32	.05	3.32	.06	3.19	.06	3.46	.06	3.24*
Sexual Inducements	1.97	.06	2.16	.06	1.98	.07	1.83	.07	3.98**
Submission and Debasement	1.91	.05	1.80	.06	1.71	.06	1.53	.07	6.58***
Resource Display	2.63	.06	2.16	.07	2.29	.07	2.41	.07	10.66***
Appearance Enhancement	2.51	.07	3.19	.08	2.52	.08	2.49	.08	20.07***
Intrasexual Manipulations									
Public Signals of Possession									
Possessive Ornamentation	1.60	.05	1.52	.06	1.53	.07	1.66	.07	1.03
Verbal Signals of Possession	2.17	.06	2.33	.07	2.02	.07	2.04	.07	4.19**
Physical Signals of Possession	2.90	.06	2.92	.07	2.60	.07	2.83	.07	4.15**
Negative Inducements									
Derogation of Mate to Competitor	1.09	.03	1.15	.03	1.17	.03	1.08	.03	2.17
Intrasexual Threats	1.31	.04	1.27	.05	1.19	.05	1.13	.05	2.89*
Violence	1.06	.02	1.06	.02	1.02	.02	1.04	.02	<1

Note. Means and SEs, weighted by the covariates, for each of the four groups.

[a]Absolute range, 1–4, where 1 = never and 4 = often.

*$p < .05$; **$p < .01$; ***$p < .001$.

engaged in "Emotional Manipulation," "Punish Infidelity Threat," and "Derogation of Competitors" more than homosexual women. Homosexual men engaged in "Commitment Manipulation" and "Derogation of Competitors" more than homosexual women.

Intersexual manipulations: Positive inducements

The levels of significance for group differences as well as the effect sizes (Cohen's d) for heterosexual women, homosexual men, and homosexual women relative to heterosexual men for all tactics within the subcategory of "Positive Inducements Occurring Intersexually" are presented in Fig. 3. In comparison to heterosexual women, heterosexual men engaged in "Resource Display" more often and "Sexual Inducements" and "Appearance Enhancement" less often. Heterosexual men engaged in "Submission and Debasement" and "Resource Display" more often than both homosexual men and women. Heterosexual women engaged in "Appearance Enhancement" more than homosexual men. In comparison to homosexual women, heterosexual women engaged in "Sexual Inducements," "Submission and Debasement," and "Appearance Enhancement" more often, but "Resource Display" less often. In comparison to homosexual women, homosexual men engaged in "Emphasize Love and Care" less often, and "Submission and Debasement" more often.

Intrasexual manipulations: Public signals of possession

The levels of significance for group differences as well as the effect sizes (Cohen's d) for heterosexual women, homosexual men, and homosexual women relative to heterosexual men for all tactics within the subcategory of "Public Signals of Possession" are presented in Fig. 4. Homosexual men engaged in "Physical Signals of Possession" less often than the other three groups. In addition to these differences, heterosexual women engaged in "Verbal Signals of Possession" more than both homosexual men and women.

Intrasexual manipulations: Negative inducements

The levels of significance for group differences as well as the effect sizes (Cohen's d) for heterosexual women, homosexual men, and homosexual women relative to heterosexual men for all tactics within the subcategory of "Negative Inducements Occurring Intrasexually" are presented in Fig. 5. Both heterosexual men and women engaged in "Intrasexual Threats" more often than homosexual women.

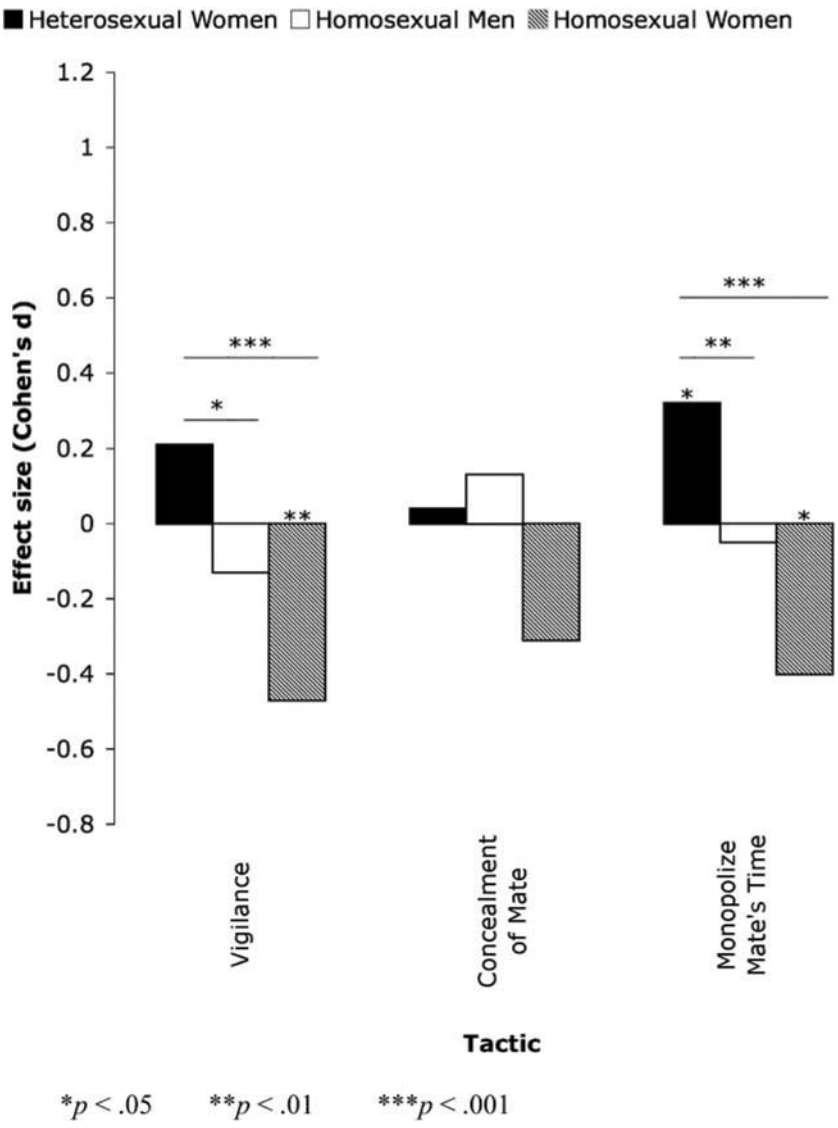

Fig. 1 Intersexual Manipulations: Direct Guarding. Effect size differences (Cohen's *d*) for heterosexual women, homosexual men, and homosexual women relative to heterosexual men

Discussion

In this study, we examined the influence of sex and sexual orientation on one aspect of mating psychology: mate retention. Previous research has demonstrated that, aside from their sex-atypical sexual partner preference, homosexual men tend to be sex-typical for numerous other aspects of mating psychology (Bailey et al., 1994; Chivers, 2006; Chivers et al., 2004; Harris, 2002; Kenrick et al., 1995; Rullo et al., 2006; Silverthorne & Quinsey, 2000). In contrast, in addition to their sex-atypical sexual partner preference, homosexual women tend to be sex-atypical for numerous other aspects of their mating psychology (Bailey et al., 1994; Chivers, 2006; Harris, 2002; Kenrick et al., 1995; Rullo et al., 2006; Silverthorne & Quinsey, 2000). Our results echo these previously established patterns of sex-typicality in homosexual male mating psychology versus sex-atypicality in homosexual female mating psychology.

Six of the 19 mate retention tactics we analyzed were sexually dimorphic. In light of our stated goals for this study, we restrict our discussion to a consideration of these six mate retention tactics for which heterosexual sex differences were documented. Heterosexual men engaged in the tactic of "Resource Display" more often to remain attractive to their partners. Heterosexual women deterred their male partners from forming relationships with other women by engaging in the tactics of "Monopolize Mate's Time," "Punish Infidelity Threat," "Derogation of Competitors," and "Sexual Inducements" and engaged in the tactic of "Appearance Enhancement" more often to remain attractive to their partners. Our results parallel previous findings for sex differences in these six mate retention tactics (Buss, 1988b; Buss &

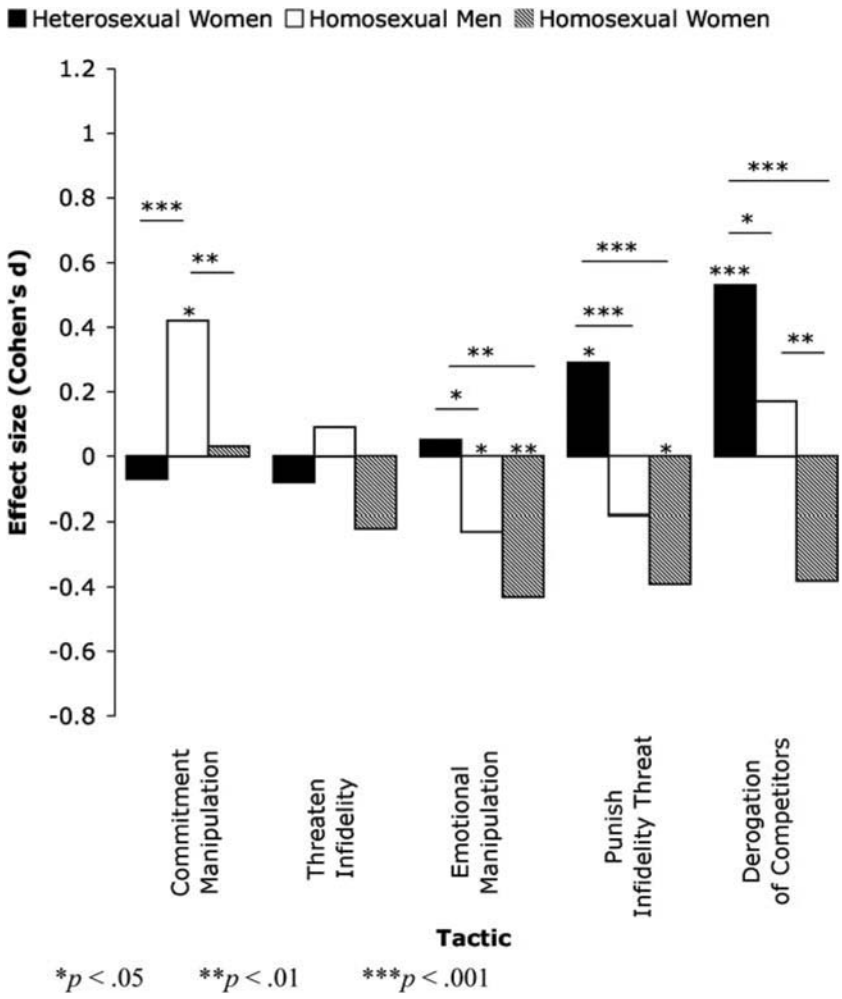

Fig. 2 Intersexual Manipulations: Negative Inducements. Effect size differences (Cohen's *d*) for heterosexual women, homosexual men, and homosexual women relative to heterosexual men

Dedden, 1990; Buss & Shackelford, 1997). To date, sex differences in human mate retention tactics have only been investigated from an evolutionary perspective (Buss, 1988b; Buss & Dedden, 1990; Buss & Shackelford, 1997). The specific patterns observed in this study were consistent with evolutionary predictions concerning sex differences in the use of mate retention tactics and their relationship to the dimorphic reproductive strategies of men and women.

The data indicated that there were no sexual orientation differences in men for most of the sexually dimorphic mate retention tactics we documented. This pattern indicates an overall trend toward sex-typical mate retention behavior in homosexual men. Homosexual men engaged in the tactics of "Monopolizing Mate's Time," "Punish Infidelity Threat," "Derogation of Competitors," and "Appearance Enhancement" at similar frequencies in comparison to heterosexual men, but not heterosexual women. For the tactic "Sexual Inducements," homosexual men did not differ significantly from heterosexual men or women, which might be interpreted as indicative of sex-atypicality intermediate between heterosexual men and women. However, the effect size difference between heterosexual and homosexual men for "Sexual Inducements" was considerably smaller (Cohen's $d = .02$) than the effect size difference between heterosexual women and homosexual men (Cohen's $d = .31$), suggesting that this latter comparison would more likely yield a statistically significant difference with a larger sample size. Therefore, it would be most appropriate to categorize homosexual men's performance of "Sexual Inducements" as sex-typical.

Given that homosexual men performed these five mate retention tactics at similar frequencies in comparison to heterosexual men, certain hypotheses for the behavior of heterosexual men can be downgraded as possible explanatory frameworks. For example, the argument that heterosexual men have less need to engage in "Derogation of Competitors" compared to women because men are more physically aggressive seems questionable. This is because homosexual men exhibit significantly less physical aggression compared to heterosexual men (Ellis, Hoffman, & Burke, 1990; Gladue & Bailey, 1995), yet they still engage in "Derogation of Competitors" at levels similar to those of heterosexual men. Instead, we suggest, in line with Bailey et al.

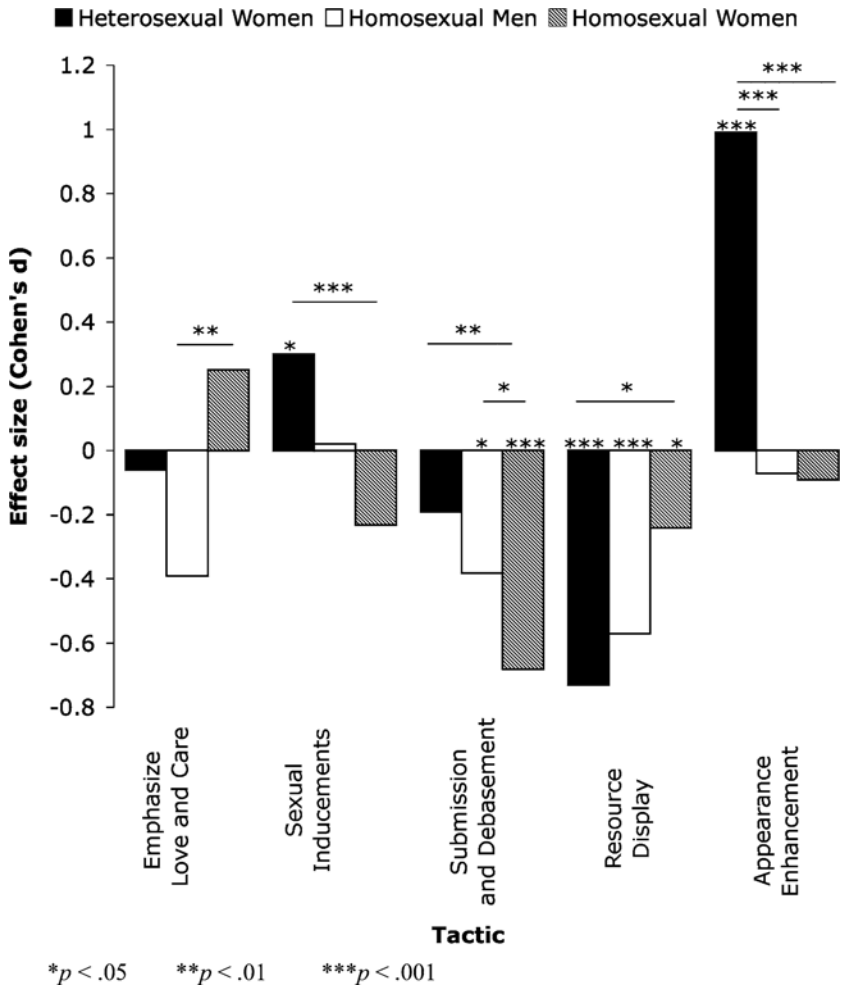

Fig. 3 Intersexual Manipulations: Positive Inducements. Effect size differences (Cohen's *d*) for heterosexual women, homosexual men, and homosexual women relative to heterosexual men

(1994), that hypotheses that emphasize the role of cognitive, social, or biological factors common to both homosexual and heterosexual men represent the best avenues for future investigation into the developmental processes underlying men's mate retention behavior for these five tactics. For example, due to their similar level of interest in uncommitted sex, heterosexual and homosexual men may spend increased amounts of time, relative to heterosexual women, searching for novel sexual partners and, as a result, less time is available to be spent engaging in the tactic "Monopolizing Mate's Time."

In men, a sexual orientation difference was found for only one of the sexually dimorphic mate retention tactics that we documented. Homosexual men performed "Resources Display" significantly less than their heterosexual counterparts, but they did not differ from heterosexual women for this tactic. In light of this pattern, hypotheses for the behavior of heterosexual men that emphasize similarities between all men, regardless of sexual orientation, can be eliminated as possible explanatory frameworks. For example, the argument that heterosexual men engage in "Resource Display" more than women simply because men, in general, are more socially powerful and, therefore, in control of resources, does not seem viable given that homosexual men differ from heterosexual men, but not heterosexual women, for "Resource Display." Rather, as Bailey et al. (1994) suggest, it is likely that this type of sex-atypical pattern in mating psychology will be best explained by cognitive, social, or biological factors common to both homosexual men and heterosexual women. One potential explanation for why this difference exists is that men, regardless of sexual orientation, are relatively unconcerned with a reproductive partner's social status (Bailey et al., 1994) and, by extension, signals of status such as "Resource Display." Consequently, homosexual men and heterosexual women likely have little to gain from attempting to retain male partners by offering resources. In contrast, heterosexual men routinely engage in "Resource Display" because the targets of their sexual interest, heterosexual women, are interested in the procurement of resources (Schmitt, 2005).

In women, sexual orientation differences existed for all six of the sexually dimorphic mate retention tactics that we

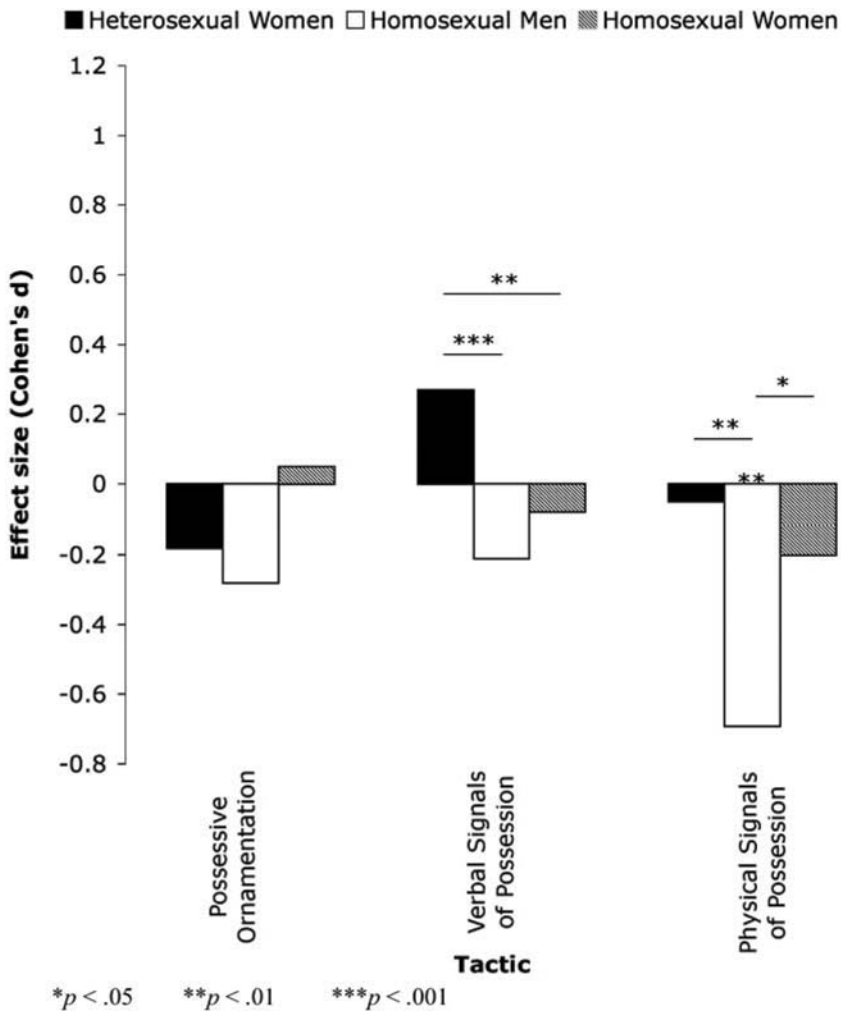

Fig. 4 Intrasexual Manipulations: Public Signals of Possession. Effect size differences (Cohen's *d*) for heterosexual women, homosexual men, and homosexual women relative to heterosexual men

documented. Three general patterns emerged. First, homosexual women differed significantly from heterosexual women, but not from heterosexual men, in terms of "Derogation of Competitors," "Sexual Inducements," and "Appearance Enhancement," indicating a male-typical pattern of sex-atypicality among homosexual women for these three tactics. Given that homosexual women perform these three mate retention tactics at similar frequencies to heterosexual men, a number of hypotheses for heterosexual sex differences can be eliminated as possible explanatory frameworks for the behavior of heterosexual women. For example, the argument that heterosexual women engage in "Appearance Enhancement" more than heterosexual men because they have been socialized by their parents to strive for cultural ideals of feminine physical beauty seems unlikely. This is because heterosexual and homosexual women experience similar patterns of socialization in childhood (Bell, Weinberg, & Hammersmith, 1981), yet homosexual women engage in significantly less "Appearance Enhancement" than their heterosexual counterparts.

In line with Bailey et al. (1994), it is likely that this type of sex-atypical pattern in mating psychology will be best explained by cognitive, social, or biological factors common to both homosexual women and heterosexual men. For example, women, regardless of sexual orientation, tend to be less interested in a partner's physical attractiveness than men (Bailey et al., 1994). Consequently, both homosexual women and heterosexual men have little to gain by employing "Appearance Enhancement" as a mate retention tactic compared to heterosexual women. In contrast, heterosexual women routinely engage in "Appearance Enhancement" because the targets of their sexual interest, heterosexual men, value physical attractiveness (Schmitt, 2005). Alternatively, homosexual women and heterosexual men may be similar in that they reject female-typical modes of "Appearance Enhancement," albeit for somewhat different reasons. Homosexual women may do so because they repudiate gender role expectations for women that emphasize physical beauty (Brown, 1987; Swami & Tovee, 2006). In contrast, heterosexual men may do so because they are socialized to adopt

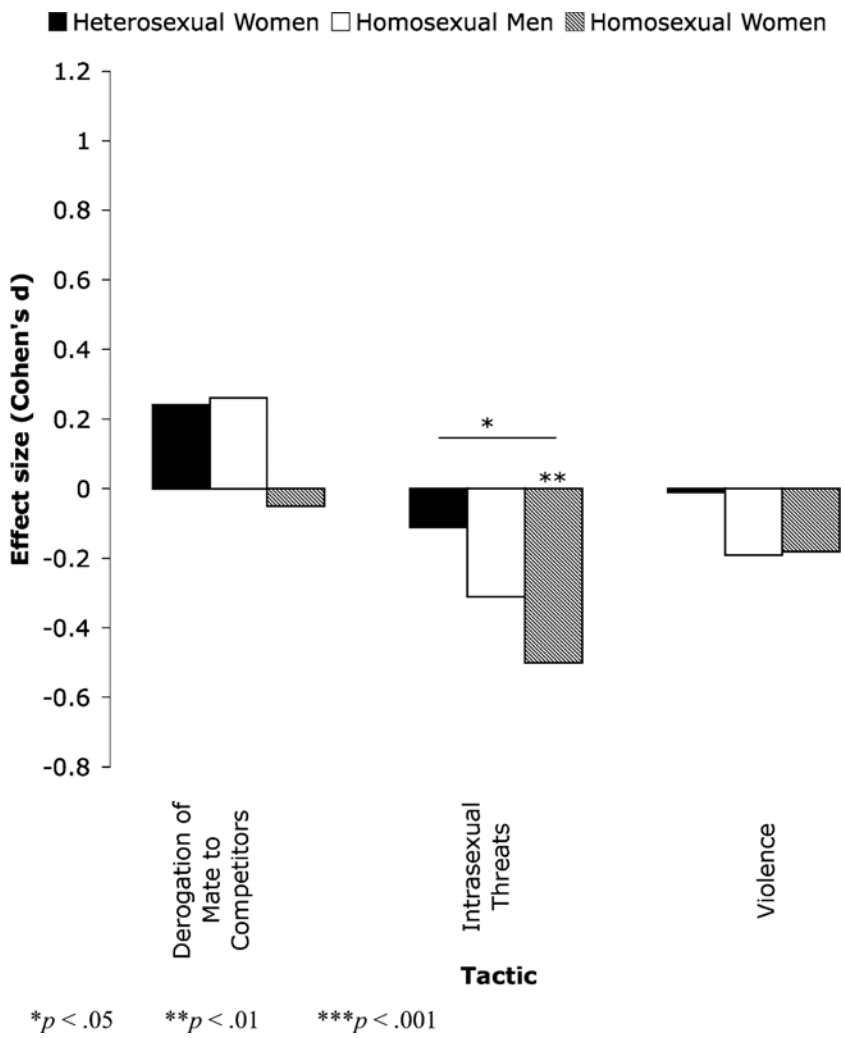

Fig. 5 Intrasexual Manipulations: Negative Inducements. Effect size differences (Cohen's *d*) for heterosexual women, homosexual men, and homosexual women relative to heterosexual men

male-typical modes of gender role presentation, while, at the same time repudiate female-typical modes of gender role presentation (e.g., Bem, 1981; Simon & Gagnon, 1987).

Second, homosexual women engaged in "Resource Display" significantly less than heterosexual men and significantly more than heterosexual women, indicating a pattern of intermediate sex-atypicality. As such, a number of hypotheses for the heterosexual sex difference observed for "Resources Display" are rendered questionable. For example, drawing on the work of feminist scholars (e.g., Dworkin, 1981), one might argue that heterosexual women exhibit low levels of "Resource Display," relative to heterosexual men, simply because patriarchal society limits the power of all women and, as such, their ability to access resources. However, this explanation seems, at the very least, inadequate because homosexual and heterosexual women share the same social (i.e., patriarchal) environments, yet homosexual women exhibit significantly higher levels of "Resource Display" compared to their heterosexual counterparts.

How, then, might these heterosexual sex differences in "Resource Display" be best understood in relation to the intermediate pattern exhibited by homosexual women? It is possible that homosexual women, unlike their heterosexual counterparts, reject traditional feminine stereotypes that emphasize economic dependency, while embracing more stereotypical masculine gender roles that emphasize economic self-sufficiency (Faderman, 1991). The valuation of economic self-sufficiency by homosexual women may result in them placing less emphasis on the acquisition of resource from their partners while predisposing them towards a pattern of increased "Resource Display" indicative of greater economic self-sufficiency. It is important to note, however, that homosexual women are significantly less interested in the social status of their partners than heterosexual women (Bailey et al., 1994). Consequently, it seems reasonable to suggest that homosexual women's tendency to engage in signals of social status, such as "Resource Display," might be dampened down relative to heterosexual men, thereby

resulting in the pattern of intermediate sex-atypicality reported here.

Third, homosexual women exhibited an exaggerated male-typical pattern for the tactics of "Monopolizing Mate's Time" and "Punish Infidelity Threat." Specifically, heterosexual women engaged in these two tactics significantly more than both heterosexual men and homosexual women, and heterosexual men engaged in these two tactics significantly more than homosexual women. Thus, a number of hypotheses for the heterosexual sex differences observed for these two tactics can be downgraded as potential explanations. For example, it might be argued that because heterosexual men are more interested in uncommitted sex and multiple sexual partners than heterosexual women (Schmitt, 2005), the latter are at greater risk of abandonment by their mates and, therefore, engage in "Monopolizing Mate's Time" and "Punish Infidelity Threat" more often. However, this hypothesis does not seem feasible. Homosexual and heterosexual women's interests in having multiple sexual partners and uncommitted sex do not differ (Bailey et al., 1994), yet homosexual women engage in the two mate retention tactics in question even less than heterosexual men. Cognitive, social, or biological factors not shared by heterosexual persons and homosexual women remain as tenable explanations for the heterosexual sex differences found for these two tactics. For example, it is possible that homosexual women engage in "Monopolizing Mate's Time" and "Punish Infidelity Threat" less than heterosexual men and women because they place less importance on sexual exclusivity within the context of romantic relationships (Peplau & Cochran, 1983).

It is noteworthy that homosexual women engaged in less mate retention behavior, overall, than the other three comparison groups. Clinicians often describe homosexual women as being "extremely close" to their romantic/sexual partners and unusually focused on their relationships (e.g., Burch, 1982; Elise, 1986; Kaufman, Harrison, & Hyde, 1984; Krestan & Bepko, 1980; Lindenbaum, 1985; McCandlish, 1982; Mencher, 1997; Schreurs & Buunk, 1996). If this is indeed the case, then homosexual woman may have a relatively lower risk of being abandoned by their relationship partners, thus mitigating the need to engage in higher levels of mate retention behavior. However, this hypothesis is not supported given that heterosexual individuals reported similar levels of relationship closeness as homosexual women, yet engaged in higher levels of mate retention behavior. Moreover, we controlled for perceived relationship closeness in all of the analyses that we applied to the mate retention data presented here. Therefore, it is unlikely that the relatively low levels of mate retention behavior exhibited by homosexual women in this study are attributable to higher levels of relationship closeness in this group.

All this being said, a clinical subset of homosexual women are known to engage in relationships that are "excessively close" and that are characterized by an inability on the part of the partners to function autonomously (e.g., Burch, 1982; Elise, 1986; Kaufman et al., 1984; Krestan & Bepko, 1980; Lindenbaum, 1985; McCandlish, 1982; Schreurs & Buunk, 1996). Clinicians argue that, within such relationships, one or both partners may seek to achieve autonomy by having sexual or romantic affairs (Burch, 1982; Elise, 1986; Krestan & Bepko, 1980; Lindenbaum, 1985). Based on these observations, we predict that homosexual women engaged in these types of excessively close relationships will exhibit high levels of mate retention behavior. Indeed, there is some evidence that women in this clinical subset engage in elevated levels of behavior that could be construed as mate guarding and vigilance. For example, one partner, or the other, may insist on sharing all activities, ranging from doing laundry to socializing with friends (Elise, 1986; Kaufman et al., 1984). During work hours, one partner may maintain regular contact with the other via telephone calls (Kaufman et al., 1984). Our sample of homosexual women was drawn from the general population and, as such, we would not predict that they would exhibit elevated levels of mate retention behavior comparable to the type of clinical lesbian populations described here.

We stress that the hypotheses we eliminate and generate here are not exhaustive. Rather, they are intended to illustrate how the study of sexual orientation differences in mate retention behavior can inform our understanding of basic heterosexual sex differences in mate behavior by circumscribing the field of candidate hypotheses. This approach can help guide future research towards viable and testable hypotheses for heterosexual sex differences in this domain that fit with the insights provided by sexual orientation differences.

The possibility of sample bias is an issue common to many studies involving homosexual participants. In the current study, more homosexual participants, relative to heterosexual participants, completed the study through the mail and Internet. This means homosexual participants may have lived in a greater variety of geographic regions. In Canada, social environments can vary considerably over geographic regions (Bone, 2001). Consequently, the demographic backgrounds of homosexual participants and their relationship partners may have differed from those of heterosexual participants and their relationship partners. For example, there may have been greater regional, ethnic, and socioeconomic diversity among homosexual participants and their relationship partners. Whether such variables affected the findings we presented here is equivocal. The extent to which heterosexual and homosexual participants and their partners differed in terms of such variables, if at all, is not certain. Also, the effects of such variables on the mate retention tactics considered here are not known, as, to date, they have not been examined empirically.

An additional variable that may have affected the results of the current study is parental status. Given the putative importance of mate retention behavior for reproductive success (Buss, 1988a; Buss, 1988b; Buss & Shackelford, 1997; Mellen, 1981), it seems reasonable to suggest that having offspring may affect such behavior. Seeing as homosexual individuals are less likely to be parents, this factor may have confounded our heterosexual-homosexual comparisons. In any case, the effect of parental status on the development of the mate retention tactics considered here has yet to be investigated systematically. Examination of this topic represents a potentially important line of future research for further understanding the development of men and women's mate retention behavior. Furthermore, because age likely correlates with parental status, the effect of parental status may have particularly important implications for understanding mate retention behavior differences among older heterosexual and homosexual individuals.

Our data add to a long list of studies examining the mating psychology of homosexual men and women, which, when pooled together, reveal a consistent pattern. Overall, apart from sexual partner preference, the mating psychology of homosexual men appears to be sex-typical whereas that of homosexual women appears to be sex-atypical. Therefore, in men, but not women, the development of sexual partner preference seems to be isolated from the development of additional aspects of mating psychology. In other words, the developmental processes that produce mating psychologies seem to have generalized effects in women, but not in men. Theoretical frameworks for explaining the development of same-sex sexual partner preference in men and women will be strengthened if they also explain why additional aspects of mating psychology are gender-shifted in homosexual women, but not homosexual men.

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