
Predicting violence against women from men's mate-retention behaviors

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Introduction

Male sexual jealousy is a frequently cited cause of non-lethal and lethal violence in romantic relationships (e.g. Buss, 2000; Daly & Wilson, 1988; Daly, Wilson, & Weghorst; 1982; Dutton, 1998). Evolutionary psychologists hypothesized two decades ago that male sexual jealousy may have evolved to solve the adaptive problem of paternity uncertainty (Daly *et al.*, 1982; Symons, 1979). Unlike women, men face uncertainty about the paternity of their children because fertilization occurs within women. Without direct cues to paternity, men risk cuckoldry, and therefore might unwittingly invest in genetically unrelated offspring. Cuckoldry is a reproductive cost inflicted on a man by a woman's sexual infidelity or temporary defection from her regular long-term relationship. Ancestral men also would have incurred reproductive costs by a long-term partner's permanent defection from the relationship. These costs include loss of the time, effort, and resources the man has spent attracting his partner, the potential misdirection of his resources to a rival's offspring, and the loss of his mate's investment in offspring he may have had with her in the future (Buss, 2000).

Expressions of male sexual jealousy historically may have been functional in deterring rivals from mate poaching (Schmitt & Buss, 2001) and deterring a mate from a sexual infidelity or outright departure from the relationship (Buss *et al.*, 1992; Daly *et al.*, 1982; Symons, 1979). Buss (1988) categorized the behavioral output of jealousy into different "mate-retention" tactics, ranging from vigilance over a partner's whereabouts to violence against rivals (see also Buss & Shackelford, 1997). Performance of these tactics is assessed by the Mate

Retention Inventory (MRI; Buss, 1988). Buss's taxonomy (1988) partitioned the tactics into two general categories: *intersexual manipulations* and *intrasexual manipulations*. Intersexual manipulations include behaviors directed toward one's partner, and intrasexual manipulations include behaviors directed toward same-sex rivals. Intersexual manipulations include direct guarding, negative inducements, and positive inducements. Intrasexual manipulations include public signals of possession.

Because male sexual jealousy has been linked to violence in relationships, and because mate-retention tactics are behavioral manifestations of jealousy, men's use of these tactics is predicted to be associated with violence toward their partners. Indeed, Buss and Shackelford (1997) hypothesized that the use of some mate-retention tactics may be early indicators of violence in romantic relationships. Unfortunately, little is known about *which specific acts and tactics* of men's mate-retention efforts are linked with violence. The primary exception is the study by Wilson, Johnson, and Daly (1995), which identified several predictors of partner violence – notably, verbal derogation of the mate and attempts at sequestration such as limiting access to family, friends, and income. This chapter highlights some of our recent research (see Shackelford *et al.*, 2004), which was designed to identify specific behaviors that portend violence in romantic relationships, and to contribute to a better understanding of violence against women. Identifying the predictors of partner violence would be theoretically valuable, and may provide information relevant to developing interventions designed to reduce partner violence or to help women avoid such violence.

Assessing violence in romantic relationships

Dobash *et al.* (1995, 1996) developed three indexes to assess the occurrence and consequences of violence in relationships. Violence toward partners is not limited to physical assaults, but also includes nonphysical controlling and coercive behaviors. To measure the occurrence of nonphysical controlling and coercive behaviors in relationships, Dobash *et al.* (1996) developed the Controlling Behavior Index (CBI), which includes assessments of threats, psychological maltreatment, and verbal violence. The Violence Assessment Index (VAI; Dobash *et al.*, 1995) measures specific methods of assault, objects used in assaults, and parts of the body to which assaults are directed. The types of violence assessed range from pushing to choking. Because the effects of violence can range from minor wounds (e.g. a scratch) to more severe damage (e.g. an internal injury), Dobash *et al.* (1995) developed the Injury Assessment Index (IAI) to measure the physical consequences of violence against partners. The IAI is

comprehensive in that it measures the specific injury (e.g. bruise, cut) and the location of the injury on the body (e.g. face, limb).

Predictors of violence in romantic relationships

DIRECT GUARDING

Tactics within the direct guarding category of the MRI include vigilance, concealment of mate, and monopolization of time. An exemplary act for each tactic is, respectively, “He dropped by unexpectedly to see what she was doing,” “He refused to introduce her to his same-sex friends,” and “He monopolized her time at the social gathering.” Each of these tactics implicates what Wilson and Daly (1992) term “male sexual proprietariness,” which refers to the sense of entitlement men sometimes feel that they have over their partners and, more specifically, their partners’ sexual behavior. Male sexual proprietariness motivates behaviors in men designed to regulate and restrict women’s sexual autonomy. A sexually proprietary male psychology has been proposed to be an adaptive solution to the problems of intrasexual competition for mates and cuckoldry (Buss *et al.*, 1992; Daly *et al.*, 1982; Symons, 1979). Ancestral men who attempted to limit their partners’ sexual autonomy were likely to have been more reproductively successful because, on average, they were better able to deter rivals from encroaching and to deter mates from straying, than were men who made no such attempts. From a woman’s point of view, however, these mate-guarding actions may inflict costs on her by restricting her freedom of sexual choice, restricting her mobility, limiting her social contacts, and impeding her ability to pursue her own interests unfettered.

Wilson *et al.* (1995) demonstrated that violence against women is linked closely to their partners’ autonomy-limiting behaviors. Women who affirmed items such as “He is jealous and doesn’t want you to talk to other men,” were more than twice as likely to have experienced serious violence by their partners. Of those women who were questioned further about their experiences with serious violence, 56% reported being fearful for their lives and 72% required medical attention following an assault. Because direct guarding is associated specifically with men’s autonomy-limiting behaviors, we expected direct guarding to be related positively to violence in romantic relationships.

INTERSEXUAL NEGATIVE INDUCEMENTS

In addition to direct guarding, men attempt to retain their partners by using intersexual negative inducements. Punish mate’s infidelity threat, for example, includes acts such as “He yelled at her after she showed interest in

another man.” This tactic has a violent theme and, therefore, we expected it to be related positively to violence in relationships. Because jealousy is a primary cause of violence against women, those women who openly threaten infidelity, consequently inducing jealousy in their partners, are predicted to be more likely to suffer violence at the hands of their partners.

POSITIVE INDUCEMENTS

Not all mate-retention tactics are expected to predict positively violence toward partners. Some of these tactics include behaviors that are not in conflict with a romantic partner’s interests and, indeed, may be encouraged and welcomed by a partner (Buss, 1988, 2000). One might not expect, for example, that men who attempt to retain their partners by using positive inducements will behave more violently toward their partners than men who do not deploy such tactics. For example, men who affirm love and care acts (e.g. “I was helpful when she really needed it”) and resource display acts (e.g. “I bought her an expensive gift”) may not be expected to use violence against their partners. Men who have resources might be able to retain their partners using methods that are not available to men lacking resources. Indeed, Daly and Wilson (1988) predicted that men who cannot retain mates through positive inducements may be more likely to resort to violence. Following Daly and Wilson (1988), we expected the use of positive inducements to be related negatively to female-directed violence.

PUBLIC SIGNALS OF POSSESSION

Tactics within the public signals of possession category include verbal possession signals (e.g. “He mentioned to other males that she was taken”), physical possession signals (e.g. “He held her hand when other guys were around”), and possessive ornamentation (e.g. “He hung up a picture of her so others would know she was taken”). Public signals of possession reflect male sexual proprietariness and, therefore, we expected the use of public signals of possession to be related positively to female-directed violence.

Shackelford *et al.* (2004) collected data using Buss’s (1988) MRI to measure female-directed mate-retention behaviors, and Dobash *et al.*’s (1995, 1996) CBI, VAI, and IAI to measure female-directed controlling behaviors, violence, and injuries, respectively. We generated four predictions derived from the hypothesis that men’s use of mate-retention tactics is variably associated with violence against their partners.

Prediction 1: men’s use of direct guarding will be related *positively* to their use of controlling behaviors (Prediction 1.1), violence (1.2), and injuries inflicted on their partners (1.3).

Prediction 2: men's use of intersexual negative inducements will be related *positively* to their use of controlling behaviors (2.1), violence (2.2), and injuries inflicted on their partners (2.3).

Prediction 3: men's use of positive inducements will be related *negatively* to their use of controlling behaviors (3.1), violence (3.2), and injuries inflicted on their partners (3.3).

Prediction 4: men's use of public signals of possession will be related *positively* to their use of controlling behaviors (4.1), violence (4.2), and injuries inflicted on their partners (4.3).

In study 1 (Appendix 4.1), we collected self-reports from several hundred men about their use of mate-retention tactics and their partner-directed violence in a current romantic relationship. Men and women sometimes are discordant about instances of violence in their relationship (e.g. Dobash *et al.*, 1998; Magdol *et al.*, 1997). The consensus among researchers is that men underreport the violence they inflict on their partners, whereas women report this violence with relative accuracy. Because women's reports of violence in relationships reflect more accurately the incidence of such violence, study 2 (Appendix 4.1) secured women's reports of their partners' use of mate-retention tactics and partner-directed violence. For reportorial efficiency, we report the conduct and results of studies 1 and 2 together. We then report the results of a third study (Appendix 4.2) in which the linked responses of husbands and their wives were used to conduct additional tests of the four predictions.

General discussion

Some mate-retention tactics often are welcomed by their recipients. Holding his partner's hand in public, for example, may signal to a woman her partner's commitment and devotion to her. Frequent use of some tactics of commitment and devotion, however, may also be harbingers of violence against a romantic partner. The current studies examined how mate-retention tactics are related to violence in romantic relationships, using the reports of independent samples of several hundred men and women in committed, romantic relationships (studies 1 and 2; Appendix 4.1), and using the reports of 107 married men and women (study 3; Appendix 4.2).

We hypothesized that, because male sexual jealousy is a primary cause of violence in romantic relationships, and because mate-retention tactics are behavioral manifestations of jealousy, men's use of mate-retention tactics will be associated with female-directed controlling behaviors, violence, and injuries. We derived and tested four predictions from this hypothesis: men's use of direct

guarding, intersexual negative inducements, and public signals of possession will be related *positively* to female-directed control, violence, and injuries (predictions 1, 2, and 4, respectively); men's use of positive inducements, in contrast, will be related *negatively* to female-directed control, violence, and injuries (prediction 3).

Predictions 1 and 2 were supported by the data collected in study 1. According to men's self-reports, their use of direct guarding and intersexual negative inducements is related positively to controlling behaviors, violence, and injuries (predictions 1 and 2, respectively). One facet of prediction 4 was supported by the data in study 1: men's self-reported use of public signals of possessions is related positively to their controlling behaviors. In addition, men who reported using frequently the tactics of emotional manipulation, punish mate's infidelity threat, monopolization of time, derogation of competitors, jealousy induction, and vigilance also reported inflicting more violence on their partners.

Predictions 1 and 2 also were supported by the data collected in study 2. According to women's reports of their partners' behaviors, men's use of direct guarding and intersexual negative inducements was related positively to female-directed controlling behaviors, violence, and injuries (predictions 1 and 2, respectively). Paralleling the results of Study 1, one facet of prediction 4 was supported by the data in study 2: men's use of public signals of possessions was related positively to their controlling behaviors. In addition, women who reported that their partners use frequently the tactics concealment of mate, emotional manipulation, vigilance, monopolization of time, and punish mate's infidelity threat also reported more violence in their relationships.

Predictions 1, 2, and 4 were supported by the data collected in study 3. According to husbands' reports of their mate-retention tactics and their wives' reports of violence, husbands' use of direct guarding, intersexual negative inducements, and public signals of possession were related positively to female-directed violence (predictions 1, 2, and 4, respectively). In addition, husbands who reported using frequently the tactics vigilance, emotional manipulation, monopolization of time, possessive ornamentation, and concealment of mate had wives' who report more violence in their relationships.

With few exceptions, we found the same pattern of results using three independent samples. Moreover, these samples were not just independent, but provided different perspectives (the male perpetrator's, the female victim's, and a combination of the two) on the same behaviors - men's mate-retention behaviors and men's violence against their partners. We identified overlap between the best predictors of violence across the studies. For example, men's use of emotional manipulation, monopolization of time, and punish mate's infidelity threat are among the best predictors of female-directed violence,

according to independent reports provided by men and women, and according to reports provided by husbands and their wives. The three perspectives also converged on which tactics are the weakest predictors of relationship violence. For example, love and care and resource display are among the weakest predictors of female-directed violence. These parallel patterns of results provide corroborative support for the hypothesis that men's use of certain mate-retention tactics is associated with female-directed violence.

Some mate-retention behaviors involve the provisioning of benefits rather than the infliction of costs (Buss, 1988; Buss & Shackelford, 1997). Prediction 3 was designed to test Daly and Wilson's (1988) hypothesis that men who are unable to employ positive inducements such as gift-giving and the provisioning of material resources to retain a mate will be more likely to use violence as a means of mate retention. Violence against their partners therefore was predicted to be related negatively to men's use of positive inducements. The current research provides no support for this prediction and, in fact, provides some evidence for the reverse relationship. Across the three studies, the significant correlations identified between positive inducements and controlling behavior, violence, and injuries are exclusively positive. A *post hoc* speculation for these results is that men faced most severely with the adaptive problem of a partner's defection may ratchet up their use of all mate-retention tactics, both positive (benefit provision) and negative (cost infliction).

MATE-RETENTION TACTICS AS PREDICTORS OF RELATIONSHIP VIOLENCE

The tactic of emotional manipulation was the highest-ranking predictor of violence in romantic relationships in study 1, and the second highest-ranking predictor in studies 2 and 3. The items that comprise the emotional manipulation tactic include, "He told her he would 'die' if she ever left," and "He pleaded that he could not live without her." Such acts seem far removed from those that might presage violence. The robust relationship between female-directed violence and men's use of emotional manipulation can be interpreted in at least two ways. Emotional manipulation may be a post-violence "apologetic" tactic. Perhaps men who behave violently toward their partners are apologizing and expressing regret for their violent behavior. Indeed, Walker (2000) has observed that, following a violent episode, men often are apologetic, expressing remorse and pleading for forgiveness.

Another possibility is that emotional manipulation may occur before relationship violence, making it a true harbinger of violence. Perhaps a man who tells his partner that he would die if she ever left him has invested so heavily in the relationship and perceives that he has so much to lose if the relationship

ended that he reacts violently when the relationship is threatened. Men who are of much lower mate value than their partners, for example, may have so much to lose that they become violent when their partner defects temporarily (i.e. commits a sexual infidelity) or permanently (i.e. ends the relationship). Future research would benefit from determining whether the use of emotional manipulation occurs before or after relationship violence. A longitudinal study, for example, could assess men's use of mate-retention tactics in the beginning of a relationship and then subsequently assess men's violence against their partners. If men who became violent toward their partners as the relationship progressed did not use emotional manipulation at the start of the relationship but only after they became violent, this would suggest that emotional manipulation may be an apologetic tactic used to seek forgiveness for a violent transgression.

Monopolization of time also ranked as a strong predictor of violence across the three studies. Example acts included in this tactic are "He spent all his free time with her so that she could not meet anyone else" and "He would not let her go out without him." The positive relationships identified in the current studies between monopolization of time and violence is consistent with the demonstration by Wilson *et al.* (1995) that violence against women is linked closely to their partners' autonomy-limiting behaviors. Wilson *et al.* (1995) found that women who affirmed items such as "He tries to limit your contact with family or friends" are twice as likely to have experienced serious violence by their partners.

We identified significant correlations between the mate-retention tactic sexual inducements and relationship violence in studies 2 and 3. Sexual inducements includes items such as "He gave in to her sexual requests," and "He performed sexual favors to keep her around." Guided by sperm-competition theory (Parker, 1970), Goetz *et al.* (in press) found that men partnered to women who are more likely to be sexually unfaithful are also more likely to perform sexual inducements to retain their partners. Goetz *et al.* (in press) interpreted a man's use of sexual inducements to be a "corrective" tactic designed to place his sperm in competition with rival sperm that may be present in his partner's reproductive tract. Men's use of sexual inducements and female-directed violence are both motivated by sexual jealousy (Daly & Wilson, 1988; Daly *et al.*, 1982; Goetz *et al.*, in press), and this may account for the consistent relationships between men's use of sexual inducements and female-directed violence.

MATE-RETENTION ACTS AS PREDICTORS OF RELATIONSHIP VIOLENCE

The highest-ranking correlations between single acts and relationship violence are not particularly consistent across the three studies. The data of

studies 1 and 2 were secured from a single data source (men and women, respectively). The data of study 3 arguably have greater credibility, because reports of mate retention and violence were provided by different data sources. For this reason, and for reportorial efficiency, we limit our discussion of the results of act-level analyses to study 3. More specifically, we discuss three of the highest-ranking correlations between single acts of mate retention and violence based on husbands' reports of their mate retention and their wives' reports violence.

The acts "Dropped by unexpectedly to see what my partner was doing" and "Called to make sure my partner was where she said she would be" are the third and fifth highest-ranking predictors of violence, respectively. These acts are included in the tactic of vigilance, which is the highest-ranking tactic-level predictor of violence in study 3. Given that (1) two of the top five act-level predictors of violence are acts of vigilance, (2) the numerically best tactic-level predictor of violence is vigilance, and (3) seven of the nine acts included within the vigilance tactic are correlated significantly with violence (correlations available upon request), a man's vigilance over his partner's whereabouts is likely to be a key signal of his partner-directed violence. The acts within the vigilance tactic are examples of autonomy-limiting behaviors – behaviors motivated by male sexual proprietariness and designed to restrict women's sexual autonomy (Wilson & Daly, 1992). Wilson *et al.* (1995) demonstrated that men's use of autonomy-limiting behaviors is associated with female-directed violence. Wilson *et al.* (1995) found that 40% of women who affirmed the statement "He insists on knowing who you are with and where you are at all times" reported experiencing serious violence at the hands of their husbands. The vigilance acts highlighted above contain both the *who* and the *where* components of the Wilson *et al.*'s (1995) statement regarding a partner's autonomy-limiting behaviors.

The act "Told my partner that I would 'die' if my partner ever left" is the fourth highest-ranking predictor of violence. This act is included in the tactic of emotional manipulation, which is the second highest-ranking tactic-level predictor of violence in study 3. It is not known whether a man who affirms this item is attempting to persuade his wife not to end the relationship because he committed some abhorrent act, such as partner violence, or might be telling his wife this because he is of much lower mate value than she and, therefore, would have much to lose if the relationship ended. In the former interpretation the act is a consequence of violence and in the latter violence is a consequence of a threat to the valued relationship. Future research should examine whether this and other acts of emotional manipulation occur before or after violence has occurred.

Concluding remarks

Mates gained must be retained to actualize the promise inherent in the initial mate selection and successful courting. Mate poaching, infidelity, and defection from a mateship undoubtedly were recurrent adaptive problems over human evolutionary history. Men's psychology of jealousy and the attendant tactics of mate retention appear to be evolved solutions to these adaptive problems. Adaptive solutions need not succeed invariantly; they evolve if they succeed, on average, across the sample space of relevant instances, better than competing designs present in the population at the time. Increased effort devoted to mate retention is predicted to occur when the adaptive problems it was designed to solve are most likely to be encountered – when a mate is particularly desirable, when there exist mate poachers, when there is a mate-value discrepancy, and when the partner displays cues to infidelity or defection (Buss & Shackelford, 1997; Shackelford & Buss, 1997).

Violence directed toward a mate appears to be one manifestation of men's attempts to control a partner and her sexuality. The current studies contribute to knowledge about this pervasive problem on two levels, conceptually and practically. Conceptually, we have identified several expected predictors of men's use of violence that contribute in some measure to a broader theory of men's use of violence. At a practical level, results of these studies can potentially be used to inform women and men, friends and relatives, of danger signs – the specific acts and tactics of mate retention that portend the possibility of future violence in relationships in order to prevent it before it has been enacted.

Appendix 4.1 Studies 1 and 2: men's and women's reports of female-directed mate retention and violence

In three studies, we secured men's and women's reports of men's mate-retention tactics and use of violence in their current romantic relationships. Studies 1 and 2 secured, in independent samples, men's self-reports and women's partner-reports, respectively.

METHODS

Participants

Four hundred and sixty one men and 560 women in a committed, sexual, heterosexual relationship participated in studies 1 and 2, respectively. Participants were drawn from universities and surrounding communities. The mean age of the men was 24.2 years ($SD = 7.9$ years), the mean age of their partners was 23.2 years ($SD = 7.3$ years), and the mean length of their

relationships was 37.3 months ($SD = 59.8$ years). The mean age of the women was 21.5 years ($SD = 5.4$ years), the mean age of their partners was 23.7 years ($SD = 6.6$ years), and the mean length of their relationships was 28.8 months ($SD = 38.05$ years). None of the women in study 2 were partners of the men who participated in study 1, making the two studies independent. About half the participants received nominal extra credit toward one of several social science courses in exchange for their participation. The remaining half of participants received credit toward a required research participation component of an introductory psychology course. We did not code for method of data collection, so were unable to include this as a variable in the statistical analyses.

Materials

Participants in both studies completed a survey that included four indexes. The MRI (Buss, 1988) assesses how often men performed 104 mate-retention acts in the past month, ranging from 0 (never) to 3 (often). Previous research has established the reliability, validity, and utility of the MRI as an assessment of mate-retention behaviors (e.g. Buss, 1988; Buss & Shackelford, 1997; Gangestad, Thornhill, & Garver, 2002). The MRI was generated using an act-nomination procedure (e.g. Buss & Craik, 1983) and subsequently refined by the heuristic application of an evolutionary perspective (Buss, 1988). Recent evidence indicates that the tactics identified by Buss (1988) are captured generally by a formal factor analysis (see Gangestad *et al.*, 2002). Even if this were not the case, however, we argue for the continued use of Buss's (1988) mate-retention tactics and super-ordinate categories, which provide continuity with previous work (e.g. Buss, 1988; Buss & Shackelford, 1997; Gangestad *et al.*, 2002; Goetz *et al.*, in press; Shackelford & Buss, 2000) and, in the context of the current research, organizes mate-retention behaviors in a theoretically sensible way that allowed for clear tests of the predictions.

The CBI assesses how often men performed 21 controlling acts against their partners in the past month, the VAI how often they performed 26 violent acts against their partners, and the IAI how often their partners sustained each of 20 injuries as a result of their violence against their partners. For each index, responses are recorded using a six-point Likert-type scale anchored by 0 (Never) and 5 (11 or more times; Dobash *et al.*, 1995; 1996). Studies by Dobash and colleagues (e.g. 1995, 1996, 1998) have demonstrated the reliability, validity, and utility of the three indexes.

Procedure

To qualify for participation, prospective participants had to be at least 18 years old and currently involved in a committed, sexual, heterosexual

relationship. Upon the prospective participant's arrival at the scheduled time and location, the researcher confirmed that the prospective participant met the two participation criteria. If the criteria were met, the researcher handed the participant a consent form, the survey, and two brown security envelopes. The participant was instructed to read and sign the consent form, complete the survey, place the completed survey in one envelope, the consent form in the other envelope, and then seal the envelopes. The participant was instructed to place the sealed envelopes in two boxes – one for surveys, one for consent forms.

RESULTS AND DISCUSSION: MEN'S SELF-REPORTS (STUDY 1)

This section reports the results of seven tests each of the four predictions across three studies (three tests in study 1, three in study 2, and one in study 3 [Appendix 4.2]). We instituted a Bonferroni correction for α inflation that produced a per-prediction corrected and directional α level of $(0.05/7)2 = 0.014$ (see Cohen & Cohen, 1983; Hays, 1988).

To test the predictions, we first standardized with unit-weighting responses to the mate-retention tactics and then averaged the relevant tactics to create the super-ordinate categories defined by Buss (1988). Alpha reliabilities for the tactics and categories were acceptable, ranging from $\alpha = 0.50$ to 0.84, with a mean of 0.71 (see Table 4.1). We then correlated men's scores on the mate-retention categories with their scores on the CBI, VAI, and IAI. For analyses involving tactics and categories, we excluded responses to the mate-retention act "I hit my partner when I caught my partner flirting with someone else" to prevent detection of spurious relationships between mate retention and violence (this exclusion was implemented for parallel analyses in studies 2 and 3).

Consistent with predictions 1.1 and 1.3, men's use of direct guarding correlated positively with their scores on the CBI and IAI; $r(413) = 0.41$ and 0.14, respectively (both P values < 0.014). Prediction 1.2 was not supported statistically: Men's use of direct guarding was positively but not significantly correlated with their scores on the VAI; $r(413) = 0.12$ (not significant). Consistent with predictions 2.1, 2.2, and 2.3, men's use of intersexual negative inducements correlated positively with their scores on the CBI, VAI, and IAI; $r(413) = 0.46$, 0.20, and 0.15, respectively (all P values < 0.014). The results did not support prediction 3. Men's use of positive inducements did not correlate negatively with their scores on the CBI, VAI, or IAI; $r(413) = 0.22$ ($P < 0.014$), 0.09 (not significant), and 0.05 (not significant), respectively. Consistent with prediction 4.1, men's use of public signals of possession correlated positively with their scores on the CBI; $r(413) = 0.20$ ($P < 0.014$). Predictions 4.2 and 4.3 were not supported: men's use of public signals of possession did not correlate positively

Table 4.1. Study 1: correlations between men's self-reported mate retention and scores on the CBI, VAI, IAI, and OVI.

Mate-retention category (α)/ mate-retention tactic (α)	CBI	VAI	IAI	OVI	Rank
Direct guarding (0.83)	0.41*	0.12	0.14*	0.16*	
Vigilance (0.82)	0.43*	0.13	0.08	0.12*	7
Concealment of mate (0.67)	0.28*	0.06	0.11	0.10	8
Monopolization of time (0.72)	0.36*	0.14*	0.16*	0.18*	3
Intersexual negative inducements (0.84)	0.46*	0.20*	0.15*	0.20*	
Jealousy induction (0.70)	0.31*	0.11	0.15*	0.16*	5
Punish mate's infidelity threat (0.81)	0.49*	0.19*	0.13	0.19*	2
Emotional manipulation (0.80)	0.42*	0.23*	0.17*	0.24*	1
Commitment manipulation (0.50)	0.20*	0.08	-0.03	0.03	12
Derogation of competitors (0.76)	0.35*	0.13	0.15*	0.17*	4
Positive inducements (0.81)	0.22*	0.09	0.05	0.08	
Resource display (0.84)	0.09	0.06	-0.03	0.02	13
Sexual inducements (0.64)	0.24*	0.03	0.05	0.04	10.5
Appearance enhancement (0.77)	0.16*	0.08	0.03	0.06	9
Love and care (0.66)	0.09	0.04	0.02	0.04	10.5
Submission and debasement (0.68)	0.24*	0.13*	0.12	0.15*	6
Public signals of possession (0.74)	0.20*	0.04	-0.03	0.00	
Verbal possession signals (0.61)	0.17*	0.03	-0.04	-0.01	16
Physical possession signals (0.72)	0.13*	0.02	-0.01	0.01	14
Possessive ornamentation (0.65)	0.20*	0.04	-0.03	0.00	15

Note: $N = 413$; $\alpha =$ alpha reliability. Rank is the rank order of the magnitude of the correlation between the mate-retention tactic and scores on the OVI.

* $P < 0.014$

with their scores on the VAI or IAI; $r(413) = 0.04$ and -0.03 (both not significant), respectively.

We wanted to identify which tactics and acts best predicted (numerically) the occurrence and consequences violence in mateships. To simplify the analyses and to obtain a broadband assessment of the relationships of mate retention with violence and injury, we separately standardized with unit-weighting scores on the VAI and IAI and then averaged these standardized scores into a composite Overall Violence Index (OVI; $\alpha = 0.90$). The CBI was not included in the composite variable because several of the constituent items do not directly assess violence. For these exploratory analyses (and parallel analyses in studies 2 and 3, as well as tests of differences between men and women along the target variables), we instituted a liberal adjustment for type I error by reducing

α from 0.05 to 0.01 and implementing two-tailed significance tests (Cohen & Cohen, 1983; Hays, 1988).

We first correlated scores on the mate-retention tactics with scores on the OVI. These correlations are shown in the far-right column of Table 4.1. Emotional manipulation showed the highest-ranking correlation with scores on the OVI, followed by punish mate's infidelity threat, monopolization of time, derogation of competitors, and jealousy induction. Verbal possession signals showed the lowest-ranking correlation with scores on the OVI, followed by possessive ornamentation and physical possession signals. The relationships between men's mate retention and their scores on the VAI and IAI paralleled those with the OVI and, therefore, are not discussed further but are displayed in the middle two columns of Table 4.1. For reportorial completeness, Table 4.1 presents the correlations between men's mate retention and scores on the VAI, IAI, CBI, and OVI.

To identify the specific mate-retention acts that were the best predictors of violence, we computed correlations between each of the mate-retention acts and scores on the OVI. These act-level analyses revealed that 27 of the 104 mate-retention acts correlated significantly and positively with scores on the OVI (these correlations are available upon request). The acts "Cried in order to keep my partner with me," "Told my partner that I would change in order to please her," "Told others my partner was a pain," "Told my partner that the other person they were interested in has slept with everyone," and "Would not let my partner go out with me" were the five highest-ranking correlations (r values = 0.23, 0.21, 0.21, 0.20, and 0.20, respectively; all P values < 0.01). The tactics that include these acts are among the top eight tactic-level predictors of relationship violence.

According to men's self-reports, their use of intersexual negative inducements and direct guarding is related positively to violence against their partners. Also, men who reported using the mate-retention tactics of emotional manipulation, punish mate's infidelity threat, monopolization of time, derogation of competitors, jealousy induction, and vigilance reported the most violence in their relationships. The same pattern of findings emerged when we controlled for the man's age, his partner's age, and the length of their relationship (analyses are available upon request).

RESULTS AND DISCUSSION: WOMEN'S PARTNER-REPORTS (STUDY 2)

As in study 1, we first standardized with unit weighting the mate-retention tactics and then averaged the relevant tactics to create the mate-retention categories defined by Buss (1988). Alpha reliabilities for the tactics

and categories were acceptable, ranging from $\alpha = 0.50$ to 0.87 , with a mean of 0.71 (see Table 4.1). We then correlated women's reports of their partners' scores on each of the mate-retention categories with women's reports of their partners' scores on the CBI, VAI, and IAI.

The results supported predictions 1.1, 1.2, and 1.3: women's reports of their partners' use of direct guarding correlated positively with their reports of their partners' scores on the CBI, VAI, and IAI; $r(471) = 0.68, 0.45, \text{ and } 0.37$, respectively (all P values < 0.014). The results also supported predictions 2.1, 2.2, and 2.3: women's reports of their partners' use of intersexual negative inducements correlated positively with their reports of their partners' scores on the CBI, VAI, and IAI; $r(471) = 0.62, 0.33, \text{ and } 0.26$, respectively (values all P values < 0.014). The results did not support prediction 3: women's reports of their partners' use of positive inducements did not correlate negatively with their reports of their partners' scores on the CBI, VAI, or IAI; $r(471) = 0.32$ ($P < 0.014$), 0.16 , ($P < 0.014$), and 0.10 (not significant), respectively. Consistent with prediction 4.1, women's reports of their partners' use of public signals of possession correlated positively with their reports of their partners' scores on the CBI; $r(471) = 0.26$ ($P < 0.014$). Predictions 4.2 and 4.3 failed to receive support: women's reports of their partners' use of public signals of possession correlated positively but not significantly with their reports of their partners' scores on the VAI and IAI; $r(471) = 0.09$ and 0.08 , respectively (both P values > 0.014).

As in study 1, we wanted to identify which tactics and acts best predicted (numerically) the occurrence and consequences of violence in mateships. Following the procedure used in study 1, we standardized separately with unit-weighting scores on the VAI and IAI and then averaged these standardized scores into a composite OVI; $\alpha = 0.91$. We first correlated scores on each of the mate-retention tactics with scores on the OVI. These correlations are shown in the far right column of Table 4.2. Concealment of mate showed the highest-ranking correlation with scores on the OVI, followed by emotional manipulation, vigilance, monopolization of time, and punish mate's infidelity threat. Love and care showed the lowest-ranking correlation with scores on the OVI, followed by verbal possession signals and resource display. As in study 1, the relationships between women's reports of men's mate retention and scores on the VAI and IAI paralleled those with the OVI and, therefore, are not discussed further but are displayed in the middle two columns of Table 4.2. For reportorial completeness, Table 4.2 presents the correlations between women's reports of men's mate retention and scores on the VAI, IAI, CBI, and OVI.

To identify the specific mate-retention acts that were the best predictors of violence, we computed correlations between each of the mate-retention acts and scores on the OVI. These act-level analyses revealed that 63 of the 104

Table 4.2. Study 2: correlations between women's reports of men's mate retention and scores on the CBI, VAI, IAI, and OVI.

Mate-retention category (α)/ mate-retention tactic (α)	CBI	VAI	IAI	OVI	Rank
Direct guarding (0.83)	0.68*	0.45*	0.37*	0.45*	
Vigilance (0.83)	0.59*	0.38*	0.31*	0.38*	3
Concealment of mate (0.68)	0.56*	0.43*	0.40*	0.46*	1
Monopolization of time (0.81)	0.62*	0.36*	0.25*	0.35*	4
Intersexual negative inducements (0.81)	0.62*	0.33*	0.26*	0.33*	
Jealousy induction (0.72)	0.36*	0.19*	0.12	0.19*	7.5
Punish mate's infidelity threat (0.74)	0.59*	0.30*	0.24*	0.31*	5
Emotional manipulation (0.86)	0.61*	0.40*	0.40*	0.43*	2
Commitment manipulation (0.50)	0.30*	0.16*	0.09	0.14*	10
Derogation of competitors (0.79)	0.49*	0.21*	0.12	0.19*	7.5
Positive inducements (0.81)	0.32*	0.16*	0.10	0.14*	
Resource display (0.87)	0.12	0.06	0.03	0.05	14
Sexual inducements (0.65)	0.36*	0.20*	0.12	0.17*	9
Appearance enhancement (0.83)	0.20*	0.10	0.05	0.08	12.5
Love and care (0.73)	0.10	0.02	0.01	0.01	16
Submission and debasement (0.78)	0.42*	0.22*	0.16*	0.21*	6
Public signals of possession (0.81)	0.26*	0.09	0.08	0.10	
verbal possession signals (0.73)	0.20*	0.02	0.02	0.03	15
Physical possession signals (0.81)	0.19*	0.07	0.08	0.08	12.5
Possessive ornamentation (0.70)	0.28*	0.14*	0.11	0.13*	11

Note: $N = 471$; $\alpha =$ alpha reliability. Rank is the rank order of the magnitude of the correlation between the mate-retention tactic and scores on the OVI.

* $P < 0.014$.

mate-retention acts correlated significantly and positively with scores on the OVI (these correlations are available upon request). The acts "Did not let me talk to others of the opposite sex," "Cried when I said I might go out with someone else," "Cried in order to keep me with him," "Threatened to harm himself if I ever left," and "Read my personal mail" were the five highest-ranking correlations (r values = 0.44, 0.40, 0.39, 0.37, and 0.36, respectively; all P values < 0.01). Three of these acts are included within the tactic emotional manipulation, and accordingly, emotional manipulation was the second-highest tactic-level predictor of violence.

According to women's reports of their partners' behaviors, use of direct guarding and intersexual negative inducements is related positively to female-directed violence. Contrary to expectation, the use of positive inducements also is related positively to female-directed violence. Women who reported that their

partners more frequently use the mate-retention tactics concealment of mate, emotional manipulation, vigilance, monopolization of time, and punish mate's infidelity threat reported the most violence in their relationships. The same pattern of findings emerged when we controlled for the woman's age, her partner's age, and the length of their relationship (analyses available upon request).

COMPARING THE RESULTS FOR MEN'S SELF-REPORTS (STUDY 1) AND WOMEN'S PARTNER-REPORTS (STUDY 2)

Table 4.3 presents descriptive statistics for the target variables for men's and women's reports and displays the results of tests for sex differences along these target variables. Women in study 1 (i.e. the surveyed men's partners) were older than the women in study 2 (i.e. the surveyed women), but men from the two studies did not differ in age. The length of the relationship reported by men in study 1 was longer than the length of the relationship reported by women in study 2. Reports of men's use of direct guarding, public signals of possession, and scores on the VAI, IAI, and OVI did not differ significantly between the two samples.

Relative to women's reports of their partners' behavior, men self-reported more frequent use of intersexual negative inducements, positive inducements, and controlling behavior. Although not anticipated, the sex difference in reported frequency of controlling behaviors is not surprising upon examination of the acts included in the CBI. More than half of the acts do not require the woman's physical presence or knowledge, for example "Deliberately keep her short of money" and "Check her movements." In addition, such acts might be more effective if the woman is not aware of their occurrence. The discrepancy between men and women's reports of men's intersexual negative inducements and positive inducements merits further investigation.

Comparing the correlations obtained from men's reports (study 1) to those obtained from women's reports (study 2) reveals that the sexes provide corroborative reports about which tactics numerically best predicted violence. Only the correlations between the mate-retention tactics and the OVI are discussed here (other correlation comparisons are available upon request). Spearman's rank order correlation indicates a strong positive relationship between (a) the ranks of the correlations between men's reports of their performance of mate-retention tactics and female-directed violence in study 1 (far-right column of Table 4.1) and (b) the ranks of the correlations between women's reports of their partner's performance of mate-retention tactics and female-directed violence in study 2 (far-right column of Table 4.3); $r_s(14) = 0.76$ ($p < 0.01$).

Table 4.3. Descriptive statistics for target variables in studies 1 and 2.

Target variable	Men's reports (study 1)		Women's reports (study 2)		t
	Mean	SD	Mean	SD	
Man's age (years)	24.2	7.9	23.7	6.6	0.99
Woman's age (years)	23.0	7.3	21.5	5.4	3.83*
Length of relationship (months)	37.2	59.7	28.7	38.4	2.74*
Men's direct guarding ^a	2.5	2.5	2.1	2.5	2.05
Men's intersexual negative inducements ^b	2.1	2.2	1.6	2.0	3.75*
Men's positive inducements ^c	6.5	2.6	5.7	2.8	4.35*
Men's public signals of possession ^d	5.5	2.5	5.7	3.2	-0.85
Men's CBI score ^{e,f}	9.7	9.2	6.5	8.9	5.31*
Men's VAI score ^f	3.3	5.5	3.3	7.6	0.07
Men's IAI score ^{g,h}	0.3	1.0	0.5	1.8	-1.83
Men's OVI score ^h	1.8	3.0	2.0	4.8	-0.68

Note: For study 1, $N = 461$; for study 2, $N = 560$. The t values were produced by independent means tests.

^a Composite variable (see text), ranging from 0 (least frequent use of direct guarding) to 54 (most frequent use).

^b Composite variable (see text), ranging from 0 (least frequent use of intersexual negative inducements) to 84 (most frequent use).

^c Composite variable (see text), ranging from 0 (least frequent use of positive inducements) to 78 (most frequent use).

^d Composite variable (see text), ranging from 0 (least frequent use of public signals of possession) to 45 (most frequent use).

^e CBI (see text), ranging from 0 (minimum use of controlling behaviors) to 105 (maximum use).

^f VAI (see text), ranging from 0 (minimum use of violence) to 125 (maximum use).

^g IAI (see text), ranging from 0 (minimum occurrence of injuries) to 95 (maximum occurrence).

^h Composite variable (see text), average of the VAI and IAI.

* $P < 0.01$ (two-tailed).

Men in Study 1 did not consistently underreport the violence they inflicted on their partners, relative to women's reports provided in study 2. The men that participated in study 1, however, were not partnered to the women that participated in study 2. Previous literature on discrepancy in reports is based on comparisons of the reports of partnered men and women (e.g. Dobash *et al.*, 1998; Magdol *et al.*, 1997). The use of independent samples of men and women in the current studies makes difficult a direct comparison with previous literature.

Study 1 secured men's reports of their mate retention and violence in romantic relationships. Many of the correlations between the use of mate retention and violence were statistically significant but small in magnitude. Study 2 secured women's reports of their partners' mate retention and violence. The correlations identified in Study 2 between men's use of mate retention and violence were generally larger numerically than those identified in study 1. Using women's reports of their partners' mate retention may be problematic, however, because men may be in a better position to report on their own mate-retention behaviors, some of which occur outside the awareness of their partner (e.g. "He had his friends check up on her"). Because women report relationship violence with relative accuracy and men may be better able to report accurately their use of mate-retention behaviors, we conducted a third study to secure these reports in a sample of married couples. Married couples served as participants for study 3. Husbands reported their use of mate-retention behaviors and their wives reported husbands' use of violence.

Appendix 4.2 Study 3: husbands' reports of their mate retention and wives' reports of husbands' violence

In study 3, we collected husbands' reports of their mate-retention behaviors and wives' reports of their husbands' violence. Using these data, we tested four predictions paralleling those tested in studies 1 and 2 (Appendix 4.1).

METHODS

Participants

Participants were 214 individuals, 107 men and 107 women, who had been married less than 1 year. Participants were obtained from the public records of marriage licenses issued within a large county in midwestern USA. All couples married within the designated time period were invited to participate in this study. The mean age of husbands was 25.5 years ($SD = 6.6$ years). The mean age of wives was 24.8 years ($SD = 6.2$ years). Additional details about this sample can be found in Buss (1992).

Materials

Husbands completed the MRI (Buss, 1988). Wives completed the Spouse Influence Report (SIR; Buss, 1992; Buss *et al.*, 1987), which is designed to assess behaviors that husbands use to influence or manipulate their partners. Items ranged from nonviolent manipulative behaviors to violent manipulative behaviors. Example items include "He tells me how happy he'll be if I do it," and "He

yells at me so I'll do it." Responses are recorded on a seven-point Likert-type scale anchored by 1 (not at all likely to do this) and 7 (extremely likely to do this).

Procedure

Participants engaged in two separate episodes of assessment. First, they received through the mail a battery of instruments to be completed at home. Husbands completed the MRI and other measures designed for different studies. Second, participants came to a testing session 1 week after receiving the first battery. Spouses were separated to preserve independence and to prevent contamination due to discussion. During this session, wives' completed the SIR and other measures designed for different studies.

RESULTS AND DISCUSSION

As in studies 1 and 2, we standardized with unit weighting the mate-retention tactics and then averaged the relevant tactics to create the mate-retention categories defined by Buss (1988). Alpha reliabilities for the tactics and categories were acceptable, ranging from $\alpha = 0.46$ to 0.83, with a mean of 0.67 (see Table 4.4). The female-directed violence variable used in study 3 differed from that used in studies 1 and 2. Study 3 did not include the CBI, VAI, or IAI. To measure violence in study 3, we standardized with unit weighting and then averaged responses to one act from the MRI ("He hit me when he caught me flirting with someone else," which was excluded from other analyses of mate retention) with two acts from the SIR ("He hit me so I will do it," "He implied the possibility of physical harm if I didn't do"). Responses to these three acts produced a reliable index of wives' reports of their husbands' violence; $\alpha = 0.70$ (mean inter-item correlation, $r [105] = 0.43$; the results do not change when we exclude the SRI item in which violence is implied rather than committed; analyses available upon request).

We then correlated husbands' reports of their mate retention with wives' reports of violence. Consistent with predictions 1, 2, and 4, husbands' self-reported use of direct guarding, intersexual negative inducements, and public signals of possession were related positively to wives' reports of husbands' violence; $r (105) = 0.43, 0.41, \text{ and } 0.32$ (all P values < 0.014). Prediction 3 was not supported: husbands' use of positive inducements was not related negatively to wives' reports of husbands' violence; $r (105) = 0.23$ (not significant).

As in studies 1 and 2, we wanted to identify which of the mate-retention tactics and acts best predicted (numerically) violence against women. We correlated scores on each of the tactics with violence against wives. These correlations are shown in Table 4.4. Vigilance showed the highest-ranking correlation with violence against wives, followed by emotional manipulation,

Table 4.4. Study 3: correlations between husbands' self-reported mate retention and their wives' reports of violence.

Mate retention category (α)/mate-retention tactic (α)	Relationship violence	Rank
Direct guarding (0.76)	0.43*	
Vigilance (0.74)	0.50*	1
Concealment of mate (0.67)	0.18	11
Monopolization of time (0.78)	0.36*	3
Intersexual negative inducements (0.73)	0.41*	
Jealousy induction (0.68)	0.17	12
Punish mate's infidelity threat (0.82)	0.34*	6
Emotional manipulation (0.75)	0.43*	2
Commitment manipulation (0.46)	0.19	10
Derogation of competitors (0.67)	0.34*	6
Positive inducements (0.71)	0.23	
Resource display (0.67)	0.12	13.5
Sexual inducements (0.66)	0.31*	9
Appearance enhancement (0.66)	0.04	15
Love and care (0.66)	-0.03	16
Submission and debasement (0.61)	0.32*	8
Public signals of possession (0.78)	0.32*	
Verbal possession signals (0.49)	0.34*	6
Physical possession signals (0.71)	0.12	13.5
Possessive ornamentation (0.67)	0.35*	4

Note: $N = 107$; $\alpha =$ alpha reliability. Rank is the rank order of the magnitude of the correlation between the mate-retention tactic and scores on the relationship violence index.

* $P < 0.014$.

monopolization of time, and possessive ornamentation. Love and care showed the lowest-ranking correlation with violence against wives, followed by appearance enhancement.

To identify the specific mate-retention acts that were the best predictors of violence, we computed correlations between each of the mate-retention acts and the relationship violence score. These act-level analyses revealed that 38 of the 104 mate-retention acts correlated significantly and positively with relationship violence (these correlations are available upon request). The acts "Told my partner that someone of my same sex was out to use my partner," "Hung up a picture of my partner so that others would know my partner was taken," "Dropped by unexpectedly to see what my partner was doing," "Told my partner that I would 'die' if my partner ever left," and "Called to make sure my partner was where she said she would be" were the five highest-ranking correlations

(r values = 0.50, 0.46, 0.44, 0.40, and 0.40, respectively, all P values < 0.01). Two of these five acts are included in the tactic vigilance and, accordingly, vigilance was the best tactic-level predictor of violence in study 3.

COMPARING THE RESULTS OF STUDY 3 WITH THE RESULTS OF STUDIES 1 AND 2

Comparing the correlations between men's mate retention and female-directed violence obtained from men's reports (study 1) with those obtained from husbands' and their wives' reports (study 3) reveals that, of the study comparisons, these two perspectives were in least agreement on which tactics best predicted violence. Correlations between violence against women and men's use of emotional manipulation and monopolization of time, however, were among the highest-ranking correlations in both studies (see Tables 4.1 and 4.4). Emotional manipulation produced the highest-ranking correlation in study 1 and the second-highest ranking correlation in study 3, and monopolization of time produced the third-highest ranking correlation in both studies 1 and 3. Only the correlations between the mate-retention tactics and the measures of violence are discussed here (other correlation comparisons are available upon request). Spearman's rank order correlation revealed a positive but not statistically significant relationship between the ranks of the correlations of female-directed violence (as assessed by the OVI) with the mate-retention tactics in study 1 and the ranks of the correlations of female-directed violence with these tactics in study 3; $r_s(14) = 0.39$ (not significant). Some of the discrepancy between the two studies about which tactics best predicted violence might be attributable to the fact that the measures of violence differed in studies 1 and 3. The use of identical measures of violence may have reduced this discrepancy.

Comparing the correlations obtained from women's reports (study 2) with those obtained from husbands' reports and their wives' reports (study 3) revealed some agreement on which tactics best predicted violence in mateships. Spearman's rank order correlation indicated a positive and statistically significant relationship between the ranks of the correlations between the mate-retention tactics with female-directed violence (as assessed by the OVI) in study 2 and the ranks of the correlations between the mate-retention tactics with female-directed violence in study 3; $r_s(14) = 0.60$, ($P < 0.01$). As noted for comparisons of the results of studies 1 and 3, some of the discrepancy between studies 2 and 3 on which tactics best predicted violence in mateships could be attributable to the fact that the measures of violence differed across the two studies. In the general discussion section of this chapter we summarize the key findings generated from these three studies.

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