
When we hurt the ones we love: Predicting violence against women from men's mate retention

TODD K. SHACKELFORD,^a AARON T. GOETZ,^a DAVID M. BUSS,^b
HARALD A. EULER,^c AND SABINE HOIER^c

^a*Florida Atlantic University*; ^b*University of Texas at Austin*;

^c*University of Kassel, Germany*

Abstract

Mate retention behaviors are designed to solve several adaptive problems such as deterring a partner's infidelity and preventing defection from the mating relationship. Although many mate retention behaviors appear to be innocuous romantic gestures (e.g., displaying resources, giving flowers), some may be harbingers of violence. We investigated the associations between male mate retention and violence against women in romantic relationships. In Study 1, 461 men reported their use of mate retention behaviors and separately completed instruments designed to assess violence in their relationships. Study 2 assessed 560 women's reports of their partners' mate retention behaviors and the degree to which their partners used violence against them. As predicted, and across both studies, men's use of particular mate retention behaviors was related positively to female-directed violence. Study 3 secured 2 separate data sources—husbands' reports of their mate retention and wives' reports of their husbands' violence in a sample of 214 individuals forming 107 couples. The results corroborated those of Studies 1 and 2, with particular male mate retention behaviors predicting violence against romantic partners. The general discussion outlines future directions for research that are likely to result in a more comprehensive understanding of partner violence against women.

Male sexual jealousy is a frequently cited cause of nonlethal and lethal violence in romantic relationships (e.g., Buss, 2000; Daly & Wilson, 1988; Daly, Wilson, & Weghorst, 1982; Dobash & Dobash, 1979; Dutton, 1998; Dutton & Golant, 1995; Walker, 1979, 2000). Evolutionary psychologists hypothesized two decades ago that male sexual jealousy evolved to solve the adaptive problem of paternity uncertainty (Daly et al., 1982; Symons, 1979; for a recent and comprehensive overview of evolutionary psychology, see Buss, 2004).

Unlike women, men face uncertainty in their paternity of 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 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, 2004).

Expressions of male sexual jealousy historically may have been functional in deterring rivals from mate poaching (Schmitt & Buss, 2001) and in deterring a mate from a sexual

We thank Dan Perlman, Sue Sprecher, and seven anonymous reviewers for comments and suggestions that greatly improved this article. In addition, we thank Steve Hecht and three additional anonymous reviewers for valuable statistical advice. The first and second authors contributed equally.

Correspondence should be addressed to Todd K. Shackelford or Aaron T. Goetz, Florida Atlantic University, Department of Psychology, Davie, FL 33314, e-mail: tshackel@fau.edu (TKS); agoetz2@fau.edu (ATG).

infidelity or outright departure from the relationship (Buss, Larsen, Westen, & Semmelroth, 1992; Daly et al., 1982; Symons, 1979). Buss (1988) categorized the behavioral output of jealousy into different “mate retention” categories and tactics, ranging from vigilance over a partner’s whereabouts to violence against rivals (see also Buss & Shackelford, 1997). Performance of mate retention behaviors is assessed by the Mate Retention Inventory (MRI; Buss, 1988). Buss’s (1988) taxonomy partitions the behaviors into two general domains: *Intersexual Manipulations*, which includes behaviors directed toward one’s partner, and *Intrasexual Manipulations*, which includes behaviors directed toward same-sex rivals. Each domain is partitioned into several categories: *Intersexual Manipulations* includes the categories *Direct Guarding*, *Negative Inducements*, and *Positive Inducements*. *Intrasexual Manipulations* includes the category *Public Signals of Possession*. Each mate retention category comprises several mate retention tactics, which, in turn, comprise specific mate retention acts (see Buss, 1988; Buss & Shackelford; and see the Methods subsection under the Studies 1 and 2 section). The current research tests predictions targeting the category level of mate retention behaviors. In a series of exploratory analyses in each study, however, we also address the tactic and act levels of mate retention behaviors.

Because male sexual jealousy has been linked to violence in relationships, and because mate retention behaviors are manifestations of jealousy, men’s use of these behaviors 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. One 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 (for related research that is not conducted within an evolutionary framework and that tends to focus on broader, more general predic-

tors of partner violence, see, e.g., Johnson, 1995; Leone, Johnson, Cohan, & Lloyd, 2004; Smith, White, & Holland, 2003; White, Merrill, & Koss, 2001). A goal of the current research is to identify specific behaviors that portend violence in romantic relationships and thereby 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, Dobash, Cavanagh, and Lewis (1995, 1996) developed two indexes to assess the occurrence and consequences of violence in relationships. 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 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 retention behaviors 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.

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 expect the use of Direct Guarding to be related positively to violence in romantic relationships.

Intersexual Negative Inducements. In addition to Direct Guarding, men sometimes 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." 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. The tactics and acts within this category have a violent theme and, therefore, we expect the use of Intersexual Negative Inducements to be related positively to violence in relationships.

Positive Inducements. Not all mate retention behaviors are expected to predict positively violence toward partners. Some mate retention behaviors 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, we expect 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 expect the use of Public Signals of Possession to be related positively to female-directed violence.

We collected data using Buss's (1988) MRI to measure female-directed mate retention behaviors and Dobash et al.'s (1995, 1996) VAI and IAI to measure female-directed violence. We generated four predictions derived from the hypothesis that men's use of mate retention is variably associated with violence against their partners: Men's use of Direct Guarding and Intersexual Negative Inducements will be related *positively* to their use of partner-directed violence (*Predictions 1 and 2*, respectively); men's use of Positive

Inducements will be related *negatively* to their use of partner-directed violence (*Prediction 3*); and men's use of Public Signals of Possession will be related *positively* to their use of partner-directed violence (*Prediction 4*).

In Study 1, we collected self-reports from several hundred men about their mate retention and their partner-directed violence in a current romantic relationship. Men and women sometimes are discordant about instances of violence in their relationships, such that men tend to underreport the violence they inflict on their partners, whereas women report this violence with relative accuracy (e.g., Dobash, Dobash, Cavanagh, & Lewis, 1998; Magdol et al., 1997). Because women's reports of violence in relationships may reflect more accurately the incidence of such violence, Study 2 secures women's reports of their partners' mate retention 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 in which the linked responses of husbands and their wives are used to conduct additional tests of the four predictions.

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 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 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 ($SD = 7.9$), the mean age of their partners was 23.2 years ($SD = 7.3$), and the mean length of their relationships was 37.3 months ($SD = 59.8$). The mean age of the women was 21.5 years ($SD = 5.4$), the mean age of their part-

ners was 23.7 years ($SD = 6.6$), and the mean length of their relationships was 28.8 months ($SD = 38.1$). 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 drawn from universities received nominal extra credit toward one of several social science courses in exchange for their participation. The remaining half of participants drawn from universities received credit toward a required research participation component of an introductory psychology course. Researchers solicited participants from these courses at the beginning of a class session, noting only that the research was a "study on romantic relationships." Participants drawn from the surrounding community were recruited by word of mouth and via flyers posted in public locations. These flyers stated only that volunteers were needed for a "study on romantic relationships." The researchers' contact information was provided on the flyers. We estimate that 20% of participants in both studies were nonstudents drawn from the community. We did not code for method of data collection, so are unable to include this as a variable in the statistical analyses.

Materials. Participants in both studies completed a survey that included several 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). The MRI was generated using an act nomination procedure (e.g., Buss & Craik, 1983) and subsequently refined by a heuristic application of an evolutionary perspective (Buss, 1988). We argue for the continued use of Buss's mate retention tactics and superordinate categories, which provides continuity with previous work (e.g., Buss, 1988; Buss & Shackelford; Goetz et al., 2005; Shackelford & Buss, 2000) and, in the present research, helps organize mate retention behaviors in a theoretically sensible way that allows for clear tests of the predictions.

The VAI assesses how often men 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 6-point Likert-type scale anchored by 0 (*never*) and 5 (*11 or more times*; Dobash et al., 1995, 1996). Studies by Dobash and colleagues (1995, 1996, 1998) have demonstrated the reliability, validity, and utility of these indexes. The packet completed by participants presented the MRI, VAI, and IAI, in that order, each preceded and followed by other measures designed to test hypotheses not related to the current research.

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 and 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 article reports the results of seven tests of each of the four predictions across three studies (three tests in Study 1, three in Study 2, and one in Study 3). We instituted a Bonferroni correction for α inflation that produced a per-prediction corrected and directional α level of $(.05/7)^2 = .014$ (see Cohen & Cohen, 1983; Hays, 1988).

To test the predictions, we standardized responses to the mate retention tactics and then averaged the relevant tactics to create the superordinate categories defined by Buss (1988). Alpha reliabilities for the four superordinate categories were acceptable: .83, .84,

.81, and .74 for Direct Guarding, Intersexual Negative Inducements, Positive Inducements, and Public Signals of Possession, respectively. Alpha reliabilities for the 16 tactics were less impressive, with a mean of .71 (α ranging from .50 to .84). With $\alpha = .50$, Commitment Manipulation was the only tactic with $\alpha < .60$. Correlations among men's self-reported performance of the four superordinate mate retention categories are shown below the diagonal in Table 1. The table not only reveals substantial positive correlations among the categories but also provides some evidence that these categories assess somewhat different dimensions of mate retention. (A parallel correlation matrix for the 16 constituent tactics produced a similar positive manifold of correlations; analyses are available on request.)

To simplify the analyses, we separately standardized scores on the VAI and IAI and then averaged these standardized scores into a composite Overall Violence Index (OVI; $\alpha = .90$; $r_{1c} = .80$, where r_{1c} is the reliability of a linear composite, following Nunnally & Bernstein, 1994, pp. 269–270). We then correlated men's scores on the mate retention categories with their scores on the OVI. 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 and 2, men's use of Direct Guarding and Intersexual Negative Inducements correlated positively with their scores on the OVI, $r(413) = .16$ and $.20$, respectively (both $ps < .014$). The results did not support Prediction 3: Men's use of Positive Inducements did not correlate negatively with their scores on the OVI, $r(413) = .08$. The results also did not support Prediction 4: Men's use of Public Signals of Possession did not correlate positively with their scores on the OVI, $r(413) = .00$.

We wanted to identify which specific tactics and acts predicted violence in mateships. For these admittedly exploratory analyses (and parallel analyses in Studies 2 and 3), we reduced α from .05 to .01 and implemented

Table 1. Correlations among mate retention categories: Men's self-reports (Study 1, below diagonal), women's partner reports (Study 2, below diagonal, in parentheses), and husband's self-reports (Study 3, above diagonal)

Mate retention category	Mate retention category			
	Direct guarding	Intersexual negative inducements	Positive inducements	Public signals of possession
Direct guarding		0.71	0.41	0.41
Intersexual negative inducements	0.84 (0.80)		0.47	0.52
Positive inducements	0.51 (0.48)	0.59 (0.54)		0.67
Public signals of possession	0.51 (0.48)	0.55 (0.53)	0.73 (0.76)	

Note. $N_s = 413$ men (Study 1), women (Study 2), 107 married couples (Study 3). All correlations are significant at $p < 0.01$ (two-tailed).

two-tailed significance tests to reduce the risk of Type I error (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 first column of Table 2. 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.

To identify whether any of the mate retention tactics uniquely predicted violence (and note parallel analyses in Studies 2 and 3), we entered scores on the 16 tactics into a multiple regression predicting OVI scores. The overall model was significant, $F(16, 398) = 3.08$, $R^2 = 0.11$, $p < .01$, but investigation of the individual standardized regression coefficients indicated that just one tactic uniquely and positively predicted female-directed violence. Men's self-reported Emotional Manipulation predicted violence against their partners ($b = 0.30$, $t = 3.39$, $p < .01$; full analyses are available on request).

To identify the specific mate retention acts that predicted 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 on 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 ($r_s = .23$, $.21$, $.21$, $.20$, and $.20$, respectively; all $p_s < .01$).

According to men's self-reports, their use of Intersexual Negative Inducements and Direct Guarding is related positively to violence against their partners. In addition, 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 more partner-directed violence in their relationships. Finally, Emotional Manipulation is the lone tactic that uniquely predicted men's violence against women. 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 on request).

Results and discussion: Women's partner reports (Study 2)

As in Study 1, we standardized responses to the mate retention tactics and then averaged the relevant tactics to create the mate retention categories defined by Buss (1988). Alpha

Table 2. Correlations between men's mate retention and partner-directed violence

Mate retention category/Mate retention tactic	Study 1: Men's self-reports	Study 2: Women's partner reports	Study 3: Married couples	
	OVI (Rank)	OVI (Rank)	RVI (Rank)	RVI _{partial} (Rank)
Direct guarding				
Vigilance	0.12* (7)	0.38* (3)	0.50* (1)	0.48* (1)
Concealment of mate	0.10 (8)	0.46* (1)	0.18 (11)	0.17 (11)
Monopolization of time	0.18* (3)	0.35* (4)	0.36* (3)	0.35* (3)
Intersexual negative inducements				
Jealousy induction	0.16* (5)	0.19* (7.5)	0.17 (12)	0.13 (12)
Punish mate's infidelity threat	0.19* (2)	0.31* (5)	0.34* (6)	0.30* (8)
Emotional manipulation	0.24* (1)	0.43* (2)	0.43* (2)	0.40* (2)
Commitment manipulation	0.03 (12)	0.14* (10)	0.19 (10)	0.19 (10)
Derogation of competitors	0.17* (4)	0.19* (7.5)	0.34* (6)	0.32* (6.5)
Positive inducements				
Resource display	0.02 (13)	0.05 (14)	0.12 (13.5)	0.10 (14)
Sexual inducements	0.04 (10.5)	0.17* (9)	0.31* (9)	0.29* (9)
Appearance enhancement	0.06 (9)	0.08 (12.5)	0.04 (15)	0.02 (16)
Love and care	0.04 (10.5)	0.01 (16)	-0.03 (16)	-0.03 (15)
Submission and debasement	0.15* (6)	0.21* (6)	0.32* (8)	0.33* (5)
Public signals of possession				
Verbal possession signals	-0.01 (16)	0.03 (15)	0.34* (6)	0.32* (6.5)
Physical possession signals	0.01 (14)	0.08 (12.5)	0.12 (13.5)	0.11 (13)
Possessive ornamentation	0.00 (15)	0.13* (11)	0.35* (4)	0.34* (4)

Note. $N_s = 413$ men (Study 1), 471 women (Study 2), 107 married couples (Study 3); "Rank" is the rank order of the magnitude of the correlation between the mate retention tactic and scores on the OVI (Studies 1 and 2) or the RVI (Study 3; see text). Study 3 secured husband's reports of his own mate retention and his wife's reports of her husband's violence against her. The RVI_{partial} column reports correlations between husband-reported mate retention and wife-reported relationship violence, controlling for wife-reported general male domination and control, as assessed by nonviolent items of the Spouse Influence Report (see text). OVI = Overall Violence Index; RVI = Relationship Violence Index.

* $p < 0.01$ (two tailed).

reliabilities for the four superordinate categories were acceptable: .83, .81, .81, and .81 for Direct Guarding, Intersexual Negative Inducements, Positive Inducements, and Public Signals of Possession, respectively. Alpha reliabilities for the 16 tactics were less impressive, with a mean of .75 (α ranging from .50 to .87). With $\alpha = .50$, Commitment Manipulation was the only tactic with $\alpha < .60$.

Also as in Study 1, we separately standardized scores on the VAI and IAI and then averaged these standardized scores into a composite OVI ($\alpha = .91$; $r_{lc} = .84$). Correlations among the four superordinate categories are shown below the diagonal and in parentheses

in Table 1. Paralleling the correlations for men's self-reports, the table not only reveals substantial positive correlations among the categories for women's partner reports but also provides some evidence that these categories assess somewhat different dimensions of mate retention (a parallel correlation matrix for the 16 constituent tactics produced a similar positive manifold of correlations; analyses are available on request). 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 OVI.

The results supported Predictions 1 and 2: Women's reports of their partners' use of

Direct Guarding and Intersexual Negative Inducements correlated positively with their reports of their partners' scores on the OVI, $r(471) = .45$ and $.33$, respectively (both $ps < .014$). 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 OVI, $r(471) = .14$. 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 OVI, $r(471) = .10$ ($p > .014$). Therefore, Prediction 4 was not supported.

As in Study 1, we wanted to identify which specific tactics and acts predicted violence in mateships. We first correlated scores on each of the mate retention tactics with scores on the OVI. These correlations are shown in the second column in Table 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.

To identify whether any of the mate retention tactics uniquely predicted violence, we entered scores on the 16 tactics into a multiple regression predicting OVI scores. As in Study 1, the overall model was significant, $F(16, 442) = 13.17$, $R^2 = 0.33$, $p < .01$. Investigation of the individual standardized regression coefficients indicated that just three tactics uniquely and positively predicted female-directed violence: Vigilance ($b = 0.21$, $t = 3.08$), Concealment of Mate ($b = 0.32$, $t = 5.64$), and Emotional Manipulation ($b = 0.38$, $t = 6.17$; all $ps < .01$; full analyses are available on request).

To identify the specific mate retention acts that predicted 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 mate retention acts correlated significantly and positively with scores on the OVI (these correlations are available on 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 ($rs = .44$, $.40$, $.39$, $.37$, and $.36$, respectively; all $ps < .01$). Three of these acts are included within the tactic Emotional Manipulation, and accordingly, Emotional Manipulation was the second highest ranking 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. In addition, 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 more partner-directed violence in their relationships. Finally, women's reports of their partners' Vigilance, Concealment of Mate, and Emotional Manipulation each uniquely predicted their partners' violence against them. 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 are available on request).

Comparing the results for men's self-reports (Study 1) and women's partner reports (Study 2)

Comparison of 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 predicted violence. 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 (first column of Table 2) and (b) the ranks of the correlations between women's reports of their partners' performance of mate retention tactics and female-directed violence in Study 2 (second column in Table 2), $r_s(14) = .76$ ($p < .01$).

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 partners (e.g., "He had his friends check up on her"). Because women report relationship violence with relative accuracy and men may be able to report more 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.

Study 3: Husbands' Reports of Their Mate Retention and Wives' Reports of Their Husbands' Violence

In Study 3, we collected husbands' reports of their mate retention and wives' reports of their husbands' violence. Using these data, we tested four predictions paralleling those tested in Studies 1 and 2.

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 the Midwest. All couples married within the designated time period were invited by letter to participate in a study on romantic relationships, in exchange for \$30 per person. Unfortunately, we did not keep a record of how many couples declined the invitation to participate and how many solicitation letters were returned due to change of address (not uncommon in the first few months after couples marry), but we estimate that 25% of couples

contacted participated in the study. The mean age of husbands was 25.5 years ($SD = 6.6$). The mean age of wives was 24.8 years ($SD = 6.2$). 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, Gomes, Higgins, & Lauterbach, 1987), which is designed to assess behaviors that husbands use to influence, manipulate, or control their partners. Items included nonviolent manipulative behaviors and 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 7-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 responses to the mate retention tactics and then averaged the relevant tactics to create the mate retention categories defined by Buss (1988). Alpha reliabilities for the four superordinate categories were acceptable: .76, .73, .71, and .78 for Direct Guarding, Intersexual Negative Inducements, Positive Inducements, and Public Signals of Possession, respectively. Alpha reliabilities for the 16 tactics were less impressive, with a mean of .67 (α ranging from .46 to .82). With $\alpha = .46$ and .49, respectively, Commitment Manipulation and Verbal Possession Signals were the only two tactics with $\alpha < .60$. Correlations among the four superordinate

categories are shown above the diagonal in Table 1. Paralleling the correlations among the categories for men's self-reports and women's partner reports secured in Studies 1 and 2, respectively, the table not only reveals substantial positive correlations among the categories for husband's self-reports but also provides some evidence that these categories assess somewhat different dimensions of mate retention (a parallel correlation matrix for the 16 constituent tactics produced a similar positive manifold of correlations; analyses are available on request).

The female-directed violence variable used in Study 3 differed from that used in Studies 1 and 2. Study 3 did not include the VAI or IAI. To measure violence in Study 3, we standardized and then averaged responses to two acts from the SIR ("He hit me so I will do it" and "He implied the possibility of physical harm if I didn't do") with one act from a different measure ("He hit me when he caught me flirting with someone else"). Responses to these three acts produced a reliable index of wives' reports of their husbands' violence, $\alpha = .70$ (the results do not change when we exclude the SIR item in which violence is implied rather than committed; analyses are available on 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 was related positively to wives' reports of husbands' violence, $r(105) = .43$, $.41$, and $.32$, respectively (all $ps < .014$). Prediction 3 was not supported: Husbands' use of Positive Inducements was not related negatively to wives' reports of husbands' violence, $r(105) = .23$.

An important theoretical question is whether a husband's use of coercive tactics, including violence against his wife, is unique to mate retention or instead might be part of a general pattern of domination and abuse (cf. Dutton, 1995, 1998; Dutton & Golant, 1995). We empirically test this by using scores on the full SIR (excluding the two violence-related items) as a covariate in analyses of the links between mate retention and violence. If a husband's use of coercive tactics is not specific to mate

retention but instead is part of a general pattern of domination and abuse, then the observed links between mate retention and violence should be eliminated once we partial out variance attributable to scores on the SIR (as an index of general domination and control).

We first created a total SIR score (after excluding responses to the two items used to create the violence index) by standardizing and then averaging responses to the 80 constituent items, producing a reliable index of wife-directed general domination and control ($\alpha = 0.97$; see Buss, 1992; Buss et al., 1987). In a second set of tests of the four predictions, we then correlated husbands' reports of their mate retention along the four superordinate categories with wives' reports of husbands' violence, this time partialling out variance attributable to scores on the SIR. Fully replicating the first set of analyses and again 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, even after controlling for SIR scores, $r_{\text{partial}}(105) = .41$, $.38$, and $.31$, respectively (all $ps < .014$). Also consistent with the first set of analyses, Prediction 3 was not supported: Husbands' use of Positive Inducements was not related negatively to wives' reports of husbands' violence, controlling for SIR scores, $r_{\text{partial}}(105) = .22$. These results suggest, therefore, that a husband's use of coercive tactics, including violence against his wife, may be unique to mate retention and is not part of a general pattern of domination and abuse.

As in Studies 1 and 2, we wanted to identify which specific mate retention tactics and acts predicted violence against women. We correlated scores on each of the tactics with violence against wives. These correlations are shown in the third column in Table 2. Vigilance showed the highest ranking correlation with violence against wives, followed by Emotional Manipulation, Monopolization of Time, and Possessive Ornamentation. Love and Care showed the lowest ranking correlation with violence against wives, followed by Appearance Enhancement. We computed a second set of correlations between scores on each of the

mate retention tactics and violence against wives, this time controlling for scores on the full SIR (excluding the two violence-related items, as above). These partial correlations are shown in the fourth column of Table 2. These partial correlations (and associated rankings) reveal a pattern of significant relationships between mate retention tactics and wife-directed violence identical to that found for the zero-order correlations, corroborating the results of the category-level analyses indicating that a husband's use of coercive tactics, including violence against his wife, may be unique to mate retention and is not part of a general pattern of domination and abuse.

To identify whether any of the mate retention tactics uniquely predicted violence, we entered scores on the 16 tactics into a multiple regression predicting wife-directed violence. As in Studies 1 and 2, the overall model was significant, $F(16, 86) = 2.64$, $R^2 = 0.38$, $p < .01$. Investigation of the individual standardized regression coefficients indicated that just one tactic uniquely and positively predicted wife-directed violence. Husband's self-reported Vigilance predicted wife's reports of husband's violence ($b = 0.46$, $t = 2.77$, $p < .01$; full analyses are available on request). We conducted a second multiple regression analysis in which we included as a predictor SIR scores (excluding the two violence-related items, as above) along with scores on the 16 mate retention tactics to predict violence against wives. As in the first set of analyses, the overall model was significant, $F(17, 86) = 2.47$, $R^2 = 0.38$, $p < .01$. Investigation of the individual standardized regression coefficients indicated that just one tactic uniquely and positively predicted wife-directed violence, just as was found in the first set of analyses. Husband's self-reported Vigilance predicted wife's reports of husband's violence ($b = 0.47$, $t = 2.75$, $p < .01$; full analyses are available on request). Furthermore, SIR scores did not uniquely predict wife-directed violence ($b = 0.05$, $t = 0.44$). These results corroborate the results of other analyses that included SIR scores, indicating that a husband's use of coercive tactics, including violence against his wife, may be unique to mate retention and is not part of a general pattern of domination and abuse.

To identify the specific mate retention acts that predicted 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 on 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 ($r_s = .50, .46, .44, .40$, and $.40$, respectively, all $p_s < .01$). Two of these five acts are included in the tactic Vigilance and, accordingly, Vigilance was the highest ranking tactic-level predictor of violence in Study 3. Controlling for SIR scores (as above) produced the same pattern of results (analyses are available on request).

Comparing the results of Study 3 with the results of Study 1 and Study 2

Comparison of the correlations between men's mate retention and female-directed violence obtained from men's reports (Study 1) to 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 predicted violence in mateships. 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 Table 2). 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. 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, $r_s(14) = .39$ (*ns*). Some of the discrepancy between the two studies about which tactics 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.

Comparison of the correlations obtained from women's reports (Study 2) to those obtained from husbands' reports and their wives' reports (Study 3) revealed some agreement on which tactics predicted violence in mateships. Spearman's rank order correlation indicated a positive and statistically significant relationship between the ranks of the correlations of the mate retention tactics with female-directed violence (as assessed by the OVI) in Study 2 and the ranks of the correlations of the mate retention tactics with female-directed violence in Study 3, $r_s(14) = .60$ ($p < .01$). An additional point of agreement across the two studies is that men's use of Vigilance uniquely predicted men's violence against women. As noted for comparisons of the results of Studies 1 and 3, some of the discrepancy between Studies 2 and 3 on which tactics predicted violence in mateships could be attributable to the fact that the measures of violence differed across the two studies. In the General Discussion, we summarize the key findings generated from these three studies.

General Discussion

Some mate retention behaviors 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 displays of commitment and devotion, however, also may be harbingers of violence against a romantic partner. The current studies examined how mate retention is 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) and the reports of 107 married men and women (Study 3). Before highlighting the results of these studies, we first briefly review

a few limitations of this research as well as several important directions for future work.

Limitations and future directions

One limitation of the current research is that we are not able to make clear statements of causality. All three studies effectively secured data at a single point in time. We have identified interpretable correlational relationships between men's mate retention behaviors and female-directed partner violence, but strong statements of causality require data collected using a longitudinal methodology. Future work, for example, could use a diary method to collect daily, repeated assessments from both members of a couple. Such a design could include assessments of men's mate retention and men's female-directed violence from both members of the couple. A diary methodology would allow for a focused investigation of other interesting questions, including, for example, whether men's mate retention predicts violence after controlling for actual relationship threats, notably a man's suspicion or knowledge of his partner's infidelities. In other words, does men's mate retention mediate (or partially mediate) the link between suspected or actual female infidelity and men's violence against their partners?

Guided heuristically by an evolutionary psychological perspective, we squarely focused on men's mate retention and men's violence against women. Women also engage in mate retention and sometimes behave violently toward their romantic partners (Buss, 1988; Buss & Shackelford, 1997; Campbell, 1993, 1995; Mouzos & Shackelford, 2004; Shackelford, 2001). It would be useful to investigate whether women's mate retention also might be linked to their partner-directed violence. These data could be collected from both members of a couple in the context of the diary methodology discussed above.

A key goal of the current research was to test four predictions about the links between men's mate retention along the four superordinate categories identified by Buss (1988; and see Buss & Shackelford, 1997). Across the three studies, the reliability of each category was acceptable, with α uniformly exceeding

.70. We also cast a broader empirical net and investigated the links between female-directed violence and men's mate retention along the 16 individual tactics identified by Buss (1988; and see Buss & Shackelford). The tactic reliabilities were less impressive, and for at least one tactic in each study, α was less than .60. We advise readers to interpret the results associated with these few tactics with special caution.

Summary of current research

We hypothesized that because male sexual jealousy is a primary cause of violence in romantic relationships, and because mate retention behaviors are manifestations of jealousy, men's mate retention will be associated with female-directed violence. 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 violence (Predictions 1, 2, and 4, respectively); men's use of Positive Inducements, in contrast, will be related *negatively* to female-directed violence (Prediction 3).

Predictions 1 and 2 are 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 female-directed violence (Predictions 1 and 2, respectively). In addition, men who report using frequently the tactics of Emotional Manipulation, Punish Mate's Infidelity Threat, Monopolization of Time, Derogation of Competitors, Jealousy Induction, and Vigilance also report inflicting more violence on their partners.

Predictions 1 and 2 also are 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 is related positively to female-directed violence (Predictions 1 and 2, respectively). In addition, women who report that their partners frequently use the tactics Concealment of Mate, Emotional Manipulation, Vigilance, Monopolization of Time, and Punish Mate's Infidelity Threat also report more violence in their relationships.

Predictions 1, 2, and 4 are supported by the data collected in Study 3. According to hus-

bands' reports of their mate retention and their wives' reports of violence, husbands' use of Direct Guarding, Intersexual Negative Inducements, and Public Signals of Possession are related positively to female-directed violence (Predictions 1, 2, and 4, respectively). In addition, husbands who report 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. Additional analyses suggest that a husband's use of coercive behaviors, including violence against his wife, is not part of a general pattern of domination and abuse (cf. Dutton, 1995, 1998; Dutton & Golant, 1995), but instead may be unique to mate retention psychology and behavior.

With few exceptions, we find 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 and men's violence against their partners. We identified overlap between the predictors of violence across the studies. For example, men's use of Emotional Manipulation, Monopolization of Time, and Punish Mate's Infidelity Threat predict 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 do not predict relationship violence. For example, Love and Care and Resource Display consistently fail to predict female-directed violence. These parallel patterns of results provide corroborative support for the hypothesis that men's use of certain mate retention behaviors 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 tactics in the Positive Inducements category and female-directed violence are exclusively positive. A 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 behaviors, both positive (benefit provision) and negative (cost infliction). Consistent with this speculation, Ellis and Malamuth (2000) provide some evidence that men's commitment to and investment in their romantic relationship is related positively to their use of female-directed violence. The uniformly positive correlations across all three studies between men's use of Positive Inducements and the other three categories of mate retention also are consistent with this speculation. (The similarly positive manifold of correlations among the 16 mate retention tactics across all three studies might explain why so few tactics *uniquely* predicted men's relationship violence in each of the studies.)

Mate retention tactics as predictors of relationship violence

The tactic Emotional Manipulation was the highest ranking predictor of relationship violence in Study 1, based on men's self-reports, and the second highest ranking predictor in Studies 2 and 3, based on women's partner reports and spousal reports, respectively. In addition, Emotional Manipulation was the only tactic that uniquely predicted violence in Study 1 and one of just three tactics that uniquely predicted violence in Study 2. 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 postviolence "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 is so heavily invested 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 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 was a highly ranked 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 relationship identified in the current studies between Monopolization of Time and violence is consistent with Wilson et al.'s (1995) demonstration that violence against women is linked closely to their partners' autonomy-limiting behaviors. Wilson et al. 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. (2005) found that men partnered to women who are more likely to be sexually unfaithful also are more likely to perform Sexual Inducements to retain their partners. Goetz et al. 2005 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 both are motivated by sexual jealousy (Daly & Wilson, 1988; Daly et al., 1982; Goetz et al., 2005), 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 are 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 are 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 of 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 Vigilance,

which is the highest ranking tactic-level predictor of violence in Study 3 and the only tactic that uniquely predicted violence against women. Given that (a) two of the top five act-level predictors of violence are acts of Vigilance, (b) the highest ranking tactic-level predictor of violence is Vigilance, (c) seven of the nine acts included within the Vigilance tactic are correlated significantly with violence (correlations are available on request), and (d) Vigilance is the only tactic that uniquely predicted partner violence, 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. 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 Wilson et al.’s 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 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 mate retention behaviors 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 that 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 male sexual proprietariness (Wilson & Daly, 1992). 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, which contributes 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.

References

- Buss, D. M. (1988). From vigilance to violence: Tactics of mate retention in American undergraduates. *Ethology and Sociobiology*, 9, 291–317.
- Buss, D. M. (1992). Manipulation in close relationships: Five personality factors in interactional context. *Journal of Personality*, 60, 477–499.
- Buss, D. M. (2000). *The dangerous passion*. New York: The Free Press.
- Buss, D. M. (2004). *Evolutionary psychology* (2nd ed.). Boston: Allyn & Bacon.
- Buss, D. M., & Craik, K. H. (1983). The act frequency approach to personality. *Psychological Review*, 90, 105–126.
- Buss, D. M., Gomes, M., Higgins, D. S., & Lauterbach, K. (1987). Tactics of manipulation. *Journal of Personality and Social Psychology*, 52, 1219–1229.
- Buss, D. M., Larsen, R. J., Westen, D., & Semmelroth, J. (1992). Sex differences in jealousy: Evolution, physiology and psychology. *Psychological Science*, 3, 251–255.
- Buss, D. M., & Shackelford, T. K. (1997). From vigilance to violence: Mate retention tactics in married couples. *Journal of Personality and Social Psychology*, 72, 346–361.
- Campbell, A. (1993). *Men, women, and aggression*. New York: Basic Books.
- Campbell, A. (1995). A few good men: Evolutionary psychology and female adolescent aggression. *Ethology and Sociobiology*, 16, 99–123.
- Cohen, J., & Cohen, P. (1983). *Applied multiple regression/correlation analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum.
- Daly, M., & Wilson, M. (1988). *Homicide*. Hawthorne, NY: Aldine de Gruyter.
- Daly, M., Wilson, M., & Weghorst, J. (1982). Male sexual jealousy. *Ethology and Sociobiology*, 3, 11–27.
- Dobash, R. E., & Dobash, R. P. (1979). *Violence against wives*. New York: The Free Press.
- Dobash, R. E., Dobash, R. P., Cavanagh, K., & Lewis, R. (1995). Evaluating criminal justice programmes for violent men. In R. E. Dobash, R. P. Dobash, & L. Noaks (Eds.), *Gender and crime* (pp. 358–389). Cardiff, UK: University of Wales Press.
- Dobash, R. E., Dobash, R. P., Cavanagh, K., & Lewis, R. (1996). *Research evaluation of programmes for violent men*. Edinburgh, Scotland: Scottish Office Central Research Unit.
- Dobash, R. E., Dobash, R. P., Cavanagh, K., & Lewis, R. (1998). Separate and intersecting realities: A comparison of men's and women's accounts of violence against women. *Violence Against Women*, 4, 382–414.
- Dutton, D. G. (1995). *The domestic assault of women* (Rev. ed.). Vancouver, Canada: University of British Columbia Press.
- Dutton, D. G. (1998). *The abusive personality*. New York: Guilford Press.
- Dutton, D. G., & Golant, S. K. (1995). *The batterer*. New York: Basic Books.
- Ellis, B. J., & Malamuth, M. M. (2000). Love and anger in romantic relationships: A discrete systems model. *Journal of Personality*, 68, 525–556.
- Goetz, A. T., Shackelford, T. K., Weekes-Shackelford, V. A., Euler, H. A., Hoier, S., Schmitt, D. P., & LaMunyon, C. W. (2005). Mate retention, semen displacement, and human sperm competition: A preliminary investigation of tactics to prevent and correct female infidelity. *Personality and Individual Differences*, 38, 749–763.
- Hays, W. L. (1988). *Statistics* (4th ed.). Fort Worth, TX: Holt, Rinehart, & Winston.
- Johnson, M. P. (1995). Patriarchal terrorism and common couple violence: Two forms of violence against women. *Journal of Marriage and the Family*, 57, 283–294.
- Leone, J. M., Johnson, M. P., Cohan, C. L., & Lloyd, S. E. (2004). Consequences of male partner violence for

- low-income women. *Journal of Marriage and Family*, 66, 472–490.
- Magdol, L., Moffitt, T. E., Caspi, A., Newman, D. L., Fagan, J., & Silva, P. A. (1997). Gender differences in partner violence in a birth cohort of 21-year-olds: Bridging the gap between clinical and epidemiological approaches. *Journal of Consulting and Clinical Psychology*, 65, 68–78.
- Mouzos, J., & Shackelford, T. K. (2004). A comparative, cross-national analysis of partner-killing by women in cohabiting relationships and marital relationships in Australia and the United States. *Aggressive Behavior*, 30, 206–216.
- Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). New York: McGraw-Hill.
- Parker, G. A. (1970). Sperm competition and its evolutionary consequences in the insects. *Biological Reviews*, 45, 525–567.
- Schmitt, D. P., & Buss, D. M. (2001). Human mate poaching: Tactics and temptations for infiltrating existing mateships. *Journal of Personality and Social Psychology*, 80, 894–917.
- Shackelford, T. K. (2001). Partner-killing by women in cohabiting relationships and marital relationships. *Homicide Studies*, 5, 252–265.
- Shackelford, T. K., & Buss, D. M. (1997). Cues to infidelity. *Personality and Social Psychology Bulletin*, 23, 1034–1045.
- Shackelford, T. K., & Buss, D. M. (2000). Marital satisfaction and spousal cost-infliction. *Personality and Individual Differences*, 28, 917–928.
- Smith, P. H., White, J. W., & Holland, L. J. (2003). A longitudinal perspective on dating violence among adolescent and college-age women. *American Journal of Public Health*, 93, 1104–1109.
- Symons, D. (1979). *The evolution of human sexuality*. New York: Oxford University Press.
- Walker, L. E. (1979). *The battered woman*. New York: Harper & Row.
- Walker, L. E. (2000). *The battered woman syndrome* (2nd ed.). New York: Springer.
- White, J. W., Merrill, L. L., & Koss, M. P. (2001). Predictors of premilitary courtship violence in a Navy recruit sample. *Journal of Interpersonal Violence*, 16, 910–927.
- Wilson, M., & Daly, M. (1992). The man who mistook his wife for a chattel. In J. Barkow, L. Cosmides, & J. Tooby (Eds.), *The adapted mind* (pp. 289–322). New York: Oxford University Press.
- Wilson, M., Johnson, H., & Daly, M. (1995). Lethal and nonlethal violence against wives. *Canadian Journal of Criminology*, 37, 331–361.