



ELSEVIER

Available online at www.sciencedirect.com



Personality and Individual Differences 44 (2008) 1422–1431

PERSONALITY AND
INDIVIDUAL DIFFERENCES

www.elsevier.com/locate/paid

Male mate retention mediates the relationship between female sexual infidelity and female-directed violence

Farnaz Kaighobadi *, Valerie G. Starratt, Todd K. Shackelford, Danielle Popp

Department of Psychology, Florida Atlantic University, 2912 College Avenue, Davie, FL 33314, USA

Received 25 November 2007; received in revised form 12 December 2007; accepted 18 December 2007

Available online 11 February 2008

Abstract

Previous research has documented relationships between (1) female sexual infidelity and men's non-violent mate retention behaviors, and (2) men's non-violent mate retention behaviors and partner-directed violence. In the two studies, we examined two additional relationships: (1) the relationship between accusations of female sexual infidelity and men's partner-directed violence and (2) whether men's direct guarding mate retention behaviors mediates the relationship between accusations of female sexual infidelity and men's partner-directed violence. The results indicate that (1) accusations of female sexual infidelity predict men's partner-directed violence, (2) men's reports of direct guarding mediates the relationship between accusations of partner sexual infidelity and partner-directed violence (Study 1, $N = 165$) and (3) women's reports of men's direct guarding partially mediates the same relationship (Study 2, $N = 306$). The discussion addresses sex differences identified in the mediation analyses, notes limitations of the research, and highlights directions for future research.

© 2007 Elsevier Ltd. All rights reserved.

Keywords: Sexual infidelity; Direct guarding; Violence; Intimate relationships

* Corresponding author. Tel.: +1 954 236 1179.

E-mail address: fkaighob@fau.edu (F. Kaighobadi).

1. Introduction

Over human evolutionary history, men have faced the adaptive problem of female sexual infidelity and subsequent cuckoldry – or the unwitting investment in genetically unrelated offspring. The reproductive costs of cuckoldry, including loss of time, energy, resources, and alternative mating opportunities, are potentially so great that men are hypothesized to have evolved psychological mechanisms that function to motivate anti-cuckoldry tactics. Mate retention behaviors are one such class of anti-cuckoldry tactics. These behaviors vary in the costs inflicted upon partners, ranging from subtle manipulation to outright physical violence (Buss & Shackelford, 1997). Partner-directed violence is a more severe class of anti-cuckoldry tactics that functions to keep a partner invested in the current relationship and to prevent her from sexual infidelity and possible cuckoldry.

1.1. *Suspensions of female sexual infidelity and female-directed violence*

Existing theoretical and empirical literature suggests a positive relationship between suspicions of female infidelity, a measure of cuckoldry risk, and violence against women in intimate relationships (e.g., Buss, 2000; Daly & Wilson, 1988; Daly, Wilson, & Weghorst, 1982). For example, recent studies have reported positive correlations between suspicions of female infidelity and men's partner-directed sexual coercion, a specific class of partner-directed violence (Goetz & Shackelford, 2006; Starratt, Goetz, Shackelford, & McKibbin, in press). Additional research has documented a positive relationship between men's sexual coercion of their partner and men's partner-directed violence (Shackelford & Goetz, 2004). Although this literature indicates that suspicions of female infidelity predict men's sexual coercion and that men's sexual coercion in turn predicts men's partner-directed violence, we are unaware of any research that has assessed the direct relationship between accusations of female infidelity and men's partner-directed violence. We investigated this relationship in tests of the first hypothesis:

Hypothesis 1: Men's accusations of female infidelity predict men's partner-directed violence.

1.2. *Mediating role of direct guarding*

Previous research also documents positive associations between perceived risk of female sexual infidelity and men's mate retention behaviors (Buss & Shackelford, 1997; Starratt, Shackelford, Goetz, & McKibbin, 2007) and between accusations of sexual infidelity and men's mate retention behaviors (McKibbin, Goetz, Shackelford, Schipper, Starratt, & Stewart-Williams, 2007). Buss and Shackelford (1997) hypothesized that the use of some non-violent mate retention behaviors may portend violence in relationships. Consistent with this hypothesis, Shackelford, Goetz, Buss, Euler, and Hoier (2005) reported that men's use of particular non-violent mate retention tactics (e.g., emotional manipulation) was related positively to female-directed violence.

Hypothesis 1 posits a positive relationship between accusations of female sexual infidelity and partner-directed violence. Given that both female sexual infidelity and partner-directed violence are related to non-violent mate retention behaviors, it may be that the latter significantly influences the hypothesized relationship. The current study investigates whether performance of certain non-violent mate retention behaviors mediates the relationship between men's accusations of female sexual infidelity and men's partner-directed violence.

Hypothesis 2: The relationship between accusations of female sexual infidelity and female-directed violence is mediated by non-violent mate retention behaviors.

2. Study 1: Men's self-reports

2.1. Methods

2.1.1. Participants

Participants were 165 men in a committed, sexual relationship with a woman. The mean age of the participants was 26.2 years ($SD = 8.8$), the mean age of the participants' partners was 25.3 years ($SD = 8.4$), and the mean relationship duration was 51.5 months ($SD = 57.4$). Participants were drawn from universities and surrounding communities. About half of the participants were university students approached at the beginning of several psychology, sociology, and biology class meetings. The remaining participants were community members who were known and recruited by students of the university. Unfortunately, we did not record whether a participant was a current student and so cannot include this as a variable in the analyses. No additional demographic information is available on these participants.

2.1.2. Materials

Participants completed a survey that included several sections. The first section solicited demographic information, including the participant's age, his partner's age, and the duration of his current relationship. The second section assessed men's partner-directed insults using the Partner-Directed Insults Survey (PDIS; Goetz, Shackelford, Schipper, & Stewart-Williams, 2006). The PDIS evaluates both the content of the specific insults as well as the frequency with which the participant uses these insults against his partner. Each of 47 insults is categorized into one of four components. The current research considered only one component of this scale, Accusations of Sexual Infidelity, as an assessment of men's suspicions of their partner's sexual infidelity (e.g., "I accused my partner of having sex with many other men").

Instructions for the PDIS are as follows: "Men sometimes try to hurt their female partner's feelings by saying insulting things to them. The following list includes insulting things that a man might say to his partner. In the column labeled 'How often (Use scale),' write the number from the scale below to indicate HOW OFTEN you have said each insulting thing to your partner." Responses are recorded using a 6-point ordered-category scale with values ranging from 0 (*I have never said this insulting thing to my partner*) to 5 (*I have said this insulting thing to my partner 25 or more times*). Scores for each component are calculated by summing the response values for each item in that component. Previous research has established the reliability, validity, and utility of the PDIS as an assessment of the content and frequency of the insults that men direct at their intimate partners (e.g., Goetz et al., 2006).

Participants next completed the Mate Retention Inventory (MRI; Buss, 1988), which assesses the frequency of men's use of 104 mate retention acts in the past month, with answers ranging from 0 (*never*) to 3 (*often*). The current research used only responses to the 18 acts included in the Direct Guarding category, because these acts represent the most direct form of mate guarding (e.g., "Called my partner at unexpected times to see who she was with," "Refused to introduce my

partner to my same sex friends,” and “Insisted that my partner stays home rather than going out”). Previous research has established the reliability, validity and utility of MRI categories as an assessment of mate retention behaviors (e.g., Shackelford, Goetz, & Buss, 2005).

To assess female-directed violence, participants completed the Violence Assessment Index (VAI; Dobash, Dobash, Cavanagh, & Lewis, 1995), which assesses the performance of 26 violent acts men performed against their partners (e.g., “Pushed, grabbed or shoved partner”). Responses are recorded using a 6-point ordered-category scale anchored by 0 (*never*) and 5 (*11 or more times*). Dobash et al. (1995), Dobash, Dobash, Cavanagh, and Lewis (1996, Dobash, Dobash, Cavanagh, and Lewis (1998) have demonstrated the reliability, validity, and the utility of this index.

2.1.3. Procedure

Three criteria had to be met to qualify for participation. The prospective participant had to be (1) male, (2) at least 18 years of age, and (3) in a committed, sexual relationship with a woman. If these criteria were met, the researcher handed the participant a consent form, the survey, and a security envelope. The participant was instructed to read and sign the consent form, complete the survey, place the completed survey in the envelope, and then seal the envelope.

3. Results and discussion

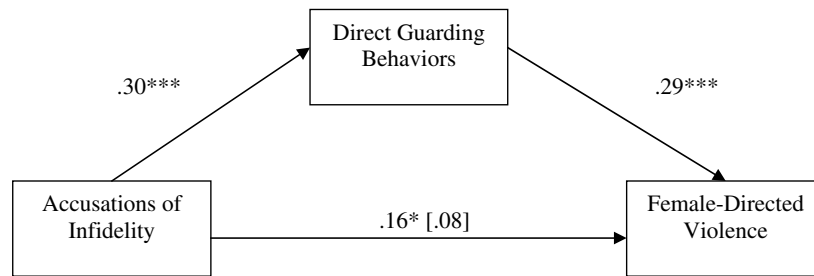
Means and standard deviations for all measures are provided in Table 1. Alpha reliabilities for the Accusations of Sexual Infidelity component of PDIS scale and the Direct Guarding category of the MRI scale were .83 and .88, respectively. The alpha reliability for VAI total scores (sum of responses to 26 items) was .76. We conducted a regression analysis to test Hypothesis 1. Consistent with the hypothesis, men’s self-reported scores on the Accusations of Female Infidelity component of the PDIS predicted men’s violence against their partners, as assessed by total scores on the VAI scale [$\beta = .16$, $F(1, 162) = 4.45$, $p < .001$].

Hypothesis 2 was tested following Baron and Kenny (1986) guidelines for mediation. First, tests of Hypothesis 1 indicated that men’s accusations of their partner’s sexual infidelity predicted female-directed violence. Second, the results of a regression analysis indicated that men’s accusations of their partner’s sexual infidelity predicted men’s direct guarding behaviors [$\beta = .30$,

Table 1
Means and standard deviations of all measures

Variables	Men’s self-reports (Study 1, $N = 165$)		Women’s partner- reports (Study 2, $N = 306$)		t
	M	SD	M	SD	
Accusations of sexual infidelity	1.80	4.03	1.47	3.63	.91
Direct guarding behaviors	5.55	7.22	5.97	8.20	–.56
Female-directed violence	5.98	8.90	5.89	9.63	.10

Note: All t values are nonsignificant, $p > .05$.



* $p < .05$, *** $p < .001$

Fig. 1. Summary of mediating regression analyses with β weights based on men's self-reports. The relationship between accusations of infidelity and female-directed violence was no longer significant (.08) after controlling for variance accounted for by direct guarding behaviors. According to men's self reports, men's direct guarding behaviors significantly mediate the relationship between accusations of sexual infidelity and violence.

$F(1, 162) = 15.55, p < .001$]. Third, accusations of sexual infidelity and performance of direct guarding behaviors were entered together into a regression predicting female-directed violence. The model was significant, [$F(2, 161) = 9.47, R^2 = .11, p < .001$]. Direct guarding behaviors uniquely predicted variance in female-directed violence ($\beta = .29, t = 3.76, p < .001$). Finally, we examined whether the relationship between accusations of sexual infidelity and female-directed violence remained after controlling for performance of direct guarding behaviors. The relationship between accusations of sexual infidelity and scores on the VAI was not significant after controlling for performance of direct guarding behaviors [F -change(1, 161) = .97, R^2 -change = .005, $p = .33$]. The β coefficient in the initial regression between accusations of sexual infidelity and VAI scores was reduced from .16 to .08 after controlling for the mediator (see Fig. 1). The Sobel (1982) test verified that performance of direct guarding behaviors was a significant mediator of the relationship between accusations of sexual infidelity and female-directed violence ($z = 2.71, p < .01$).

4. Study 2: Women's partner-reports

Men's self-reports of their partner-directed insults and violence may not provide accurate assessments of these behaviors (e.g., Dobash, Dobash, Cavanagh, & Lewis, 1998; Magdol et al., 1997). Men may be reluctant to report their partner-directed insults and violence or they may underreport the most egregious insults or the most severe violence (e.g., Dobash et al., 1998). Women's reports of their partner's insults and violence against them may reflect more accurately the incidence of such behaviors. However, men might be in a position to provide more accurate reports of their mate retention behaviors as women might not be aware of some of men's mate retention behaviors (e.g., "Read her personal mail"). Using an independent sample of women in a committed, sexual relationship, Study 2 secured women's reports of their partner's accusations of infidelity, direct guarding behaviors, and female-directed violence. These independent reports offered an additional test of the hypotheses tested in Study 1.

4.1. Methods

4.1.1. Participants

Participants were 306 women in a committed, sexual relationship with a man. The mean age of the participants was 26.0 years ($SD = 7.8$), the mean age of the participants' partners was 29.3 years ($SD = 9.5$), and the mean relationship duration was 60.6 months ($SD = 65.0$). Participants were obtained in the same manner as in Study 1. None of the women in Study 2 were partners of the men in Study 1.

4.1.2. Materials

The materials for Study 2 paralleled the materials for Study 1. Participants reported their partner's use of insults (accusations of sexual infidelity), direct guarding behaviors, and violence using partner-report versions of the PDIS, MRI and VAI.

4.1.3. Procedures

Three criteria must have been met to qualify for participation. The prospective participant had to be (1) female, (2) at least 18 years of age, and (3) currently involved in a committed, sexual relationship with a man. The same procedure was followed as in Study 1.

5. Results and discussion

Means and standard deviations for all measures are provided in Table 1. Alpha reliabilities for the Accusations of Sexual Infidelity component of PDIS scale and the Direct Guarding category of the MRI scale were .87 and .89, respectively. The alpha reliability for VAI total scores was .76. We conducted a regression analysis to test Hypothesis 1. Consistent with the hypothesis, women's reports of their partner's scores on the Accusations of Female Infidelity component of the PDIS predicted female-directed violence, as assessed by total scores on the VAI scale [$\beta = .33$, $F(1, 299) = 37.45$, $p < .001$].

Paralleling Study 1, Baron and Kenny (1986) guidelines for testing mediation were used to test Hypothesis 2. First, tests of Hypothesis 1 indicated that women's partner-reports of accusations of infidelity predicted female-directed violence. Second, the results of a regression analysis indicated that men's accusations of female infidelity predicted men's direct guarding [$\beta = .25$, $F(1, 300) = 20.03$, $p < .001$]. Third, women's reports of their partner's accusations of infidelity and direct guarding behaviors were entered together into a regression predicting female-directed violence. The model was significant [$F(2, 298) = 26.47$, $R^2 = .15$, $p < .001$]. Direct guarding behaviors uniquely predicted variance in female-directed violence ($\beta = .21$, $t = 3.73$, $p < .001$). Finally, we examined whether the relationship between accusations of sexual infidelity and female-directed violence remained after controlling for women's reports of their partner's direct guarding behaviors. The relationship between accusations of sexual infidelity and VAI persist for women's reports but was reduced after controlling for the performance of direct guarding behaviors [F -change = 26.23, R^2 -change = .08, $p < .001$]. The β coefficient in the initial regression between accusations of infidelity and VAI was reduced from .33 to .28 after controlling for the mediator (see Fig. 2). Table 2 provides a summary of the mediation analysis. The Sobel test verified that

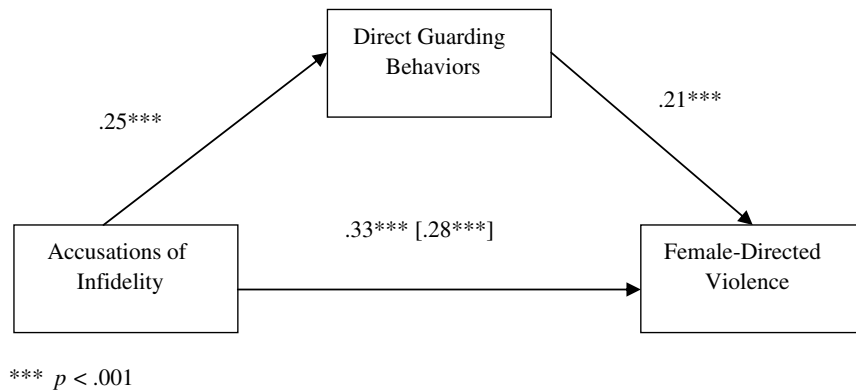


Fig. 2. Summary of mediating regression analyses with β weights based on women's partner-reports. The relationship between accusations of infidelity and female-directed violence was significantly reduced (.28) after controlling for variance accounted for by direct guarding behaviors. According to women's partner reports, men's direct guarding behaviors significantly mediate the relationship between accusations of sexual infidelity and violence.

Table 2
Summary of mediation analyses

Model	Men's self-reports (Study 1, $N = 165$)		Women's partner-reports (Study 2, $N = 306$)	
	R^2	β	R^2	β
Step 1				
Accusations of infidelity → Female-directed violence	.03*	.16*	.11**	.33**
Step 2				
Accusations of infidelity → Direct guarding behaviors	.09**	.30**	.06**	.25**
Step 3				
Direct guarding behaviors → Female-directed violence	.11**	.29**	.15**	.21**
Step 4				
Accusations of infidelity → Female-directed violence (after controlling for direct guarding behaviors)	.01	.08	.08**	.28**

* $p < .05$.

** $p < .001$.

direct guarding is a partial but significant mediator of the relationship between women's reports of their partner's accusations of sexual infidelity and female-directed violence ($z = 2.85, p < .01$).

5.1. Comparison of men's self-reports (Study 1) and women's partner-reports (Study 2)

We investigated whether the target relationships differed when using men's self-reports and women's partner-reports. As indicated in Table 1, there is no difference between the means for men's self-reports and women's partner-reports for the target variables. Furthermore, we tested the difference between regression coefficients for the two groups. Paternoster, Brame, Mazerolle, and

Piquero (1998) recommended a z formula ($\frac{b_1 - b_2}{\sqrt{SEb_1^2 - SEb_2^2}}$) to test the difference between two regression coefficients across two independent groups. The regression coefficients did not differ from Study 1 to Study 2 for accusations of sexual infidelity predicting direct guarding behaviors ($z = .13$, $p > .05$), accusations of sexual infidelity predicting female-directed violence ($z = 1.45$, $p > .05$), and direct guarding behaviors predicting violence ($z = 1.0$, $p > .05$). However, when comparing the coefficients for the mediation between the two groups, women's partner-reports of accusations of sexual infidelity accounted for more variance in men's partner-directed violence than men's self-reports after controlling for direct guarding behaviors ($b_{\text{women}} = .75$, $b_{\text{men}} = .17$, $z = 1.98$).

6. General discussion

The results using men's self-reports (Study 1) and women's partner-reports (Study 2) replicate previous findings on the relationships between suspicions of female sexual infidelity, men's non-violent mate retention behaviors, and men's partner-directed violence. Specifically, men's accusations of their partner's sexual infidelity predict their direct guarding behaviors and men's direct guarding behaviors predict their partner-directed violence.

The results from both studies also support the two central hypotheses. Consistent with Hypothesis 1, the results indicate a positive relationship between accusations of female sexual infidelity and female-directed violence. Thus, accusations of female sexual infidelity not only predict men's non-violent direct guarding mate retention behaviors, but also men's partner-directed violence. Consistent with Hypothesis 2, the results from Study 1 indicate that men's self-reports of their direct guarding behaviors mediate the relationship between their accusations of their partner's sexual infidelity and their partner-directed violence. The results of Study 2 indicate that women's partner-reports of men's direct guarding behaviors partially mediate the relationship between men's accusations of women's infidelity and men's partner-directed violence.

In attempting to explain why men's mate retention might mediate the relationship between female sexual infidelity and female-directed violence, we speculate that men might perform non-violent and violent mate retention behaviors in a temporal hierarchical fashion. Less severe, less costly behaviors might be deployed first, followed by more severe behaviors such that the hierarchy of events leading to female-directed violence is initiated with men's suspicions of infidelity followed by non-violent mate retention behaviors and ending in acts of violence. It is also plausible that an unmeasured personality variable or a certain sociosexual attitude might be accounting for the variance in both men's direct guarding behaviors and partner-directed violence.

A comparison of the results of Studies 1 and 2 indicates that men's self-reports of direct guarding behaviors has a stronger mediating effect than women's partner-reports of direct guarding behaviors. We offer two speculations for this sex difference. First, women may be more attuned to the link between men's accusations of infidelity and their partner-directed violence because this violence can be very costly to women, sometimes even deadly (Daly & Wilson, 1988). However, women may be unaware of men's performance of many direct guarding behaviors, such as, "Had my friends check up on her" or "Snooped through her personal belongings." Men are reporting on their actual mate retention behaviors whereas women are reporting only those behaviors known to them, with the result that women's reports might not mediate as strongly the

relationship between accusations of infidelity and female-directed violence. Second, because the men in Study 1 were not partnered to the women in Study 2, it is possible that these samples might have had different experiences in the context of their intimate relationships.

A limitation of the current research is the lack of paired partner reports. Because the men and women in Studies 1 and 2 were not partnered, we cannot assess the possibility that apparent sex differences in the strength of the empirical links are attributable to differences in the veracity of men's self-reports and women's partner-reports. Future research would benefit from obtaining cross-spouse reports to address such concerns. A second limitation is that we cannot infer strong causal relationships because the data reflect single assessments. Further research using a methodology that includes repeated assessments over time may provide insight into the nature of the links between suspicions of female infidelity, male mate retention behaviors, and female-directed violence.

Despite these limitations, the current research documents relationships between men's suspicions of their partner's sexual infidelity, non-violent male mate retention behaviors, and men's partner-directed violence. Suspicions of female sexual infidelity predict men's non-violent and violent mate retention behaviors. There may be a temporal hierarchy of behaviors initiated by accusations of female infidelity, followed by men's non-violent direct guarding behaviors and ending with men's violence against their partners.

References

- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*, 1173–1182.
- Buss, D. M. (1988). From vigilance to violence: Tactics of mate retention in American undergraduates. *Ethology and Sociobiology*, *9*, 291–317.
- Buss, D. M. (2000). *The dangerous passion*. New York: The Free Press.
- 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.
- 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., 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.
- Goetz, A. T., & Shackelford, T. K. (2006). Sexual coercion and forced in-pair copulation as sperm competition tactics in humans. *Human Nature*, *17*, 265–282.
- Goetz, A. T., Shackelford, T. K., Schipper, L. D., & Stewart-Williams, S. (2006). Adding insult to injury: Development and initial validation of the Partner-Directed Insults Scale. *Violence and Victims*, *21*, 691–706.
- 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.
- McKibbin, W. F., Goetz, A. T., Shackelford, T. K., Schipper, L. D., Starratt, V. G., & Stewart-Williams, S. (2007). Why do men insult their intimate partners? *Personality and Individual Differences*, *43*, 231–241.

- Paternoster, R., Brame, R., Mazerolle, P., & Piquero, A. (1998). Using the correct statistical test for the equality of regression coefficients. *Criminology*, *36*, 859–866.
- Shackelford, T. K., & Goetz, A. T. (2004). Men's sexual coercion in intimate relationships: Development and initial validation of the Sexual Coercion in Intimate Relationships Scale. *Violence and Victims*, *19*, 541–556.
- Shackelford, T. K., Goetz, A. T., & Buss, D. M. (2005). Mate retention in marriage: s evidence of the reliability of the Mate Retention Inventory. *Personality and Individual Differences*, *39*, 415–425.
- Shackelford, T. K., Goetz, A. T., Buss, D. M., Euler, H. A., & Hoier, S. (2005). When we hurt the ones we love: Predicting violence against women from men's mate retention tactics. *Personal Relationships*, *12*, 447–463.
- Sobel, M. E. (1982). Asymptotic confidence intervals for indirect effects in structural equation models. In S. Leinhardt (Ed.), *Sociological methodology* (pp. 290–312). Washington, DC: American Sociological Association.
- Starratt, V.G., Goetz, A.T., Shackelford, T.K., & McKibbin, W.F. (in press). Men's partner-directed insults and sexual coercion in intimate relationships. *Journal of Family Violence*.
- Starratt, V. G., Shackelford, T. K., Goetz, A. T., & McKibbin, W. F. (2007). Male mate retention behaviors vary with risk of partner infidelity and sperm competition. *Acta Psychologica Sinica*, *39*, 523–527.