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Original Article

Testing the Cuckoldry Risk Hypothesis of Partner Sexual Coercion in Community and Forensic Samples

Joseph A. Camilleri, Psychology Department, Westfield State College, Westfield, USA. Email: jcamilleri@wsc.ma.edu (Corresponding author).

Vernon L. Quinsey, Department of Psychology, Queen's University, Kingston, Canada.

Abstract: Evolutionary theory has informed the investigation of male sexual coercion but has seldom been applied to the analysis of sexual coercion within established couples. The cuckoldry risk hypothesis, that sexual coercion is a male tactic used to reduce the risk of extrapair paternity, was tested in two studies. In a community sample, indirect cues of infidelity predicted male propensity for sexual coaxing in the relationship, and direct cues predicted propensity for sexual coercion. In the forensic sample, we found that most partner rapists experienced cuckoldry risk prior to committing their offence and experienced more types of cuckoldry risk events than non-sexual partner assaulters. These findings suggest that cuckoldry risk influences male sexual coercion in established sexual relationships.

Keywords: cuckoldry risk, partner sexual coercion, partner rape.

Introduction

Partner sexual coercion poses a unique problem for evolutionary theories about rape. Goetz and Shackelford (2006) argued that partner rape is inconsistent with the conceptualization of rape as either an adaptation to increase reproductive success through forced mateships with multiple partners, or as a byproduct of selection to prefer multiple partners (e.g., Palmer, 1991; Shields and Shields, 1983; Thornhill and Palmer, 2000; Thornhill and Thornhill, 1983), because partner rape does not increase partner number. The theoretical solution to this problem requires moving beyond non-partner rape hypotheses by examining the function of sexually coercive tactics in relationships.

Function of partner sexual coercion

The idea that partner sexual coercion is a response to cuckoldry has been proposed elsewhere (Buss, 2003; Camilleri, 2004; Goetz and Shackelford, 2006; Goetz, Shackelford, and Camilleri, 2008; Lalumière, Harris, Quinsey, and Rice, 2005; Quinsey and Lalumière,

1995; Thornhill and Palmer, 2000; Wilson and Daly, 1992), and is consistent with sperm competition theory. This theory posits that, in species where females mate with more than one male during the same fertile cycle, morphological and behavioral traits that reduce risks of cuckoldry resulting from such competition are selectively advantageous (Birkhead, 2000). Lalumière et al. (2005), for example, reviewed how in some polygamous species, males produce more sperm in the presence of other males (e.g., beetles and crabs) and force copulation if the male returns to see another male near his partner, as, for example in mallards.

Sperm competition can also exist in socially monogamous species where extra pair copulations occur (Griffith, 2007; Westneat and Stewart, 2003), and there is ample evidence that humans have such a mating system. For example, 20% to 40% of American women report having cheated on their partner, and prevalence estimates of offspring from extra-pair copulations range from 1% to 30% across cultures, averaging around 10% (reviewed in Buss, 2000, 2003; Shackelford, Pound, Goetz, and LaMunyon, 2005). Johnson and colleagues (2001) also found that 9% of all women and 15% of women between the ages of 16 and 24 years reported having concurrent sexual relationships, and Gallup, Burch, and Berens Mitchell (2006) found 25% of women in a college sample reported at least one extra-pair copulation. Genetic studies have shown that promiscuity and sociosexuality in humans have heritable components (Bailey, Kirk, Zhu, Dunne, and Martin, 2000; Lyons et al., 2004) and there is some evidence for a genetic contribution to variability in female infidelity (Cherkas, Oelsner, Mak, Valdes, and Spector, 2004). These findings support hypotheses that suggest extra-pair copulation by women is an adaptive characteristic (Thornhill and Gangestad, 2008).

Because cuckoldry is a real risk to men's reproductive fitness, sperm competition may account for certain sex differences in human psychology and morphology. Thus far, the influence of sperm competition in humans has been studied in terms of sexual interest (Pound, 2002), attraction and interest in a sexual partner (Shackelford et al., 2002), sexual behaviors (Shackelford, Pound, and Goetz, 2005), mate retention (Starratt, Shackelford, Goetz, and McKibbin, 2007), and penis morphology (Gallup et al., 2003). Partner sexual coercion is understood as another possible adaptation to sperm competition (for a more comprehensive review of the human sperm competition literature, see Shackelford, Pound, Goetz, and LaMunyon, 2005).

There is some evidence supporting the idea that partner sexual coercion is a response to cuckoldry risk. Shields and Hanneke (1983) found that 47% of women who were beaten and raped by their husband reported having had sex with another man, whereas only 23% of those beaten but not raped and 10% of nonvictimized wives admitted to engaging in such behavior. Although these differences are consistent with the cuckoldry risk hypothesis, their causal status remains unclear. Goetz and Shackelford (2006) directly tested partner sexual coercion as a sperm competition tactic, finding a correlation between past sexual coercion and perceived partner infidelities. Even though their study provided the first direct evidence for the cuckoldry risk hypothesis for partner sexual coercion, there are several components of that hypothesis that require further investigation. We outline these components in the following sections.

Sex specificity

Differential sexual selection implies the presence of a characteristic in one sex but not the other. In some cases, different selection pressures between the sexes results in similar psychological phenotypes (e.g., Shackelford, Goetz, LaMunyon, Quintus, and Weekes-Shackelford, 2004), but psychological mechanisms shaped by sexual selection are typically sex-specific. Unlike studies that asked men about perpetration and women about victimization (e.g., Goetz and Shackelford, 2006), we were interested in asking men and women questions about perpetration because if partner sexual coercion in response to cuckoldry risk is a male-specific mechanism, we should not observe this relationship among women. This design provides an important means for falsifying this hypothesis. In each test of the cuckoldry risk hypothesis, we predicted that the relationship between cuckoldry risk and sexual coercion would be found among men, not among women.

Temporal sensitivity to cuckoldry risk

A correlation between past instances of cuckoldry risk and a history of sexually coercive behavior does not entirely address the facultative function of a cuckoldry risk mechanism. Considering the potential costs of sexually coercive behavior (e.g., substantial physical injury resulting in pregnancy difficulties or dissolution of the relationship), use of such a tactic should only take place in response to a recent and substantial risk of cuckoldry. This is consistent with the intra-pair proclivity model of female infidelity (Gallup and Burch, 2006; Gallup, Burch, and Berens Mitchell, 2006), which predicts heightened male sexual interest immediately after female infidelity. Thus, tests of the temporal sensitivity of the cuckoldry risk mechanism are required. We therefore predicted that men who are currently at risk of cuckoldry should exhibit a greater interest in using sexual coercion to obtain sex from their partner than men who are not currently at risk.

Variability in severity

Due to the costs associated with severe forms of sexual coercion, men may use more subtle strategies to obtain sex from a reluctant partner (Goetz and Shackelford, 2006). Thus, men should use severe forms of coercion either when cuckoldry is known, or as a last resort with a partner who decides to leave or already left the relationship. Otherwise, less severe tactics—we will refer to them as *sexual coaxing* (i.e. noncoercive tactics used for sexual persuasion)—may be used when cuckoldry is suspected or when circumstances have increased the risk of cuckoldry (for further discussion on the differences between sexual coercion and sexual coaxing, see Camilleri, Quinsey, and Tapscott, in press). We therefore predicted that men would be more likely to use sexual coercion when there is a direct risk of cuckoldry, and more likely to use sexual coaxing when the risk of cuckoldry is indirect.

Cuckoldry risk among partner rapists

Although using self-reported propensity for partner sexual coercion is useful for quasi-experimental designs, evidence from men convicted of raping their romantic partner addresses external validity of the cuckoldry risk hypothesis. The risk of infidelity has also been implicated in these cases of domestic violence (reviewed in Buss, 2000), though few have elucidated the etiological differences between men who physically assault their partner and men who commit partner sexual assault (see Camilleri and Quinsey, 2009). Following Daly and Wilson (1992), and Goetz and Shackelford (2006), we hypothesized

that domestic assault functions as "coercive control" to prevent female infidelity, whereas domestic sexual assault functions as a response to infidelity. Thus, we predicted that both partner rapists and nonsexual partner assaulters would have experienced a number of cuckoldry risk events prior to committing their offence, and that partner rapists would have experienced more cuckoldry risk events prior to committing their offence than nonsexual partner assaulters. More accurate categories would include infidelity certainty, suspected infidelity, opportunity for infidelity, and no evidence of cuckoldry, but due to the small sample size in the present study, there was not enough variability in these reports for an accurate test. We therefore treated more types of cuckoldry risk events as indicating greater risk of cuckoldry.

Predictions

In Study 1 we tested the predictions that men's current propensity for partner sexual coaxing would be related to recent and indirect cues to cuckoldry risk, that men's current propensity for partner sexual coercion would be related to recent and direct cues to cuckoldry risk, and that no such relationships would be found among women. In Study 2 we tested the prediction that both partner rapists and partner assaulters experienced cuckoldry risk events prior to their offence and that partner rapists experienced more of these events.

STUDY 1: COMMUNITY SAMPLE

Methods

Participants

Of the 477 participants in this study, 370 participants were included in our analyses because they met our eligibility criteria: were sexually active in a heterosexual relationship, and provided usable responses (i.e., provided a value between 0 and 1.00 for the proportion of time with partner since last having intercourse). Participants were recruited from both the Psychology Department participant pool (n_{males} = 95, $n_{females}$ = 115) and the local community (n_{males} = 79, $n_{females}$ = 81) to maximize the variability in age (*min* = 17 years, *max* = 78 years, *M* = 27.8, *SD* = 14), relationship type (dating/not living together, *n* = 243; marital/living together, *n* = 126), and relationship length (*min* < 1 year, *max* = 47 years, *M* = 5.01, *SD* = 8.86).

Materials

Data for this study were collected using a survey format. This survey collected information on (i) indirect and direct cuckoldry risk, (ii) propensity for sexual coercion and sexual coaxing, and (iii) other demographic information. Two versions of the survey were developed, tailoring questions and scales according to participant sex.

Indirect Cuckoldry Risk

Cuckoldry risk, sometimes referred to as sperm competition risk, was assayed indirectly as the proportion of time with one's partner since last having intercourse (PROP). This was calculated by dividing the number of hours with one's partner since last intercourse by the number of hours since last intercourse. Another influential variable, the

time since last having intercourse with one's partner (TIME), has also been measured in studies of sperm competition, but the reasons given for inclusion of this variable differed between researchers. For example, Baker and Bellis (1993) treated TIME and PROP as independent predictors, whereas Shackelford et al. (2002) treated TIME as a control. Although the relationship between TIME and sperm competition is not well understood (Shackelford et al., 2005), we argue that the relationship between PROP and any cuckoldry risk criterion is moderated by TIME. That is, PROP should weaken as a predictor as the time since having sex becomes more recent because having sex recently substantially reduces any risk.

Direct Cuckoldry Risk

Whereas indirect measures of cuckoldry risk evaluate variability in the opportunity for extra-pair copulations, direct measures of cuckoldry risk evaluates actual cues to infidelity. To evaluate direct cuckoldry risk we adapted items from Shackelford and Buss's (1997) factor analysis on cues to infidelity. From a pool of 170 cues, they identified 65 cues (e.g., she began avoiding talking about a certain other man in conversations with you) that loaded onto 14 factors. A direct cuckoldry risk total score (DCRS-tot) was calculated by summing the number of items answered in the affirmative. A higher score on the DCRS-tot indicates higher cuckoldry risk. To approximate when these events occurred, the most recent event for each factor was selected, then an average of those times were calculated (DCRS-tim). In this case, a lower score indicates high cuckoldry risk because on average, these events took place recently.

Sexual Coercion and Sexual Coaxing

Because we tested how sexual coercion varies over time, we could not use measures of sexual coercion that includes historical items, such as the Sexual Coercion in Intimate Relationships Scale (Shackelford and Goetz, 2004). The Tactics to Obtain Sex Scale (TOSS; Camilleri, Quinsey, and Tapscott, in press) was used because it contains subscales that measure current propensity for sexual coercion (COERCE) and sexual coaxing (COAX). Participants rated 35 acts used to obtain sex from a reluctant sexual partner on a 5-point scale that ranges from *definitely not* to *definitely* in terms of the likelihood they would use the act and how effective they think the act would be in obtaining sex if their partner refused intercourse that evening. The COERCE subscale contains items such as "physically restrain" and "slap or hit," whereas the COAX subscale has items such as "massage her/his neck or back" and "softly kiss her/his ears, neck, or face." Scores for each item were summed, then total scores for each subscale were calculated. The TOSS is sensitive to proximal changes in interest for using such acts, COERCE correlates with reported use of sexual coercion in relationships, and both subscales have excellent internal reliability (Cronbach's alphas > .89) and construct validity (Camilleri et al., in press).

Procedure

Participants visited our laboratory and provided informed consent prior to completing the survey. Each participant completed the survey in a private room, and the researcher was available throughout the session to answer any questions. Upon completion of the survey, participants were debriefed.

Data Management

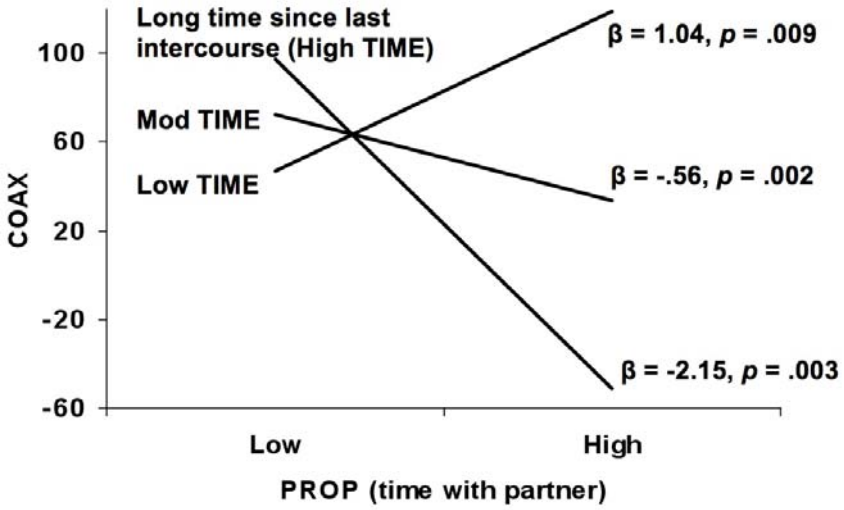
We used multiple regression analyses to test several predictions so we followed Cohen, Cohen, West, and Aiken's (2003) data cleaning procedures for regression analyses. Checking for leverage, discrepancy, and influence identified 13 outliers that were removed from the data. Inclusion of these outliers weakened the effects but did not change the interpretation of our results. A violation of the homoscedasticity assumption was corrected by using a square root transformation on COERCE, and so all analyses with COERCE use this transformation. All significant interactions were followed up using simple slopes analyses (Aiken and West, 1991), which allowed us to interpret interactions between continuous variables.

Results

Indirect Cuckoldry Risk

A significant main effect for TIME, $F_{1,160} = 10.44$, $p = .001$, and for PROP, $F_{1,160} = 10.05$, $p = .002$, on COAX are uninterpretable because of an interaction between TIME and PROP, $F_{1,160} = 8.38$, $p = .004$. Observing the simple slopes (regressing COAX on PROP at different levels of TIME, see Aiken and West, 1991) found that the less time spent with a partner since last having intercourse, the greater the interest in using sexual coaxing but only when the time since last having intercourse was moderate or long (see Figure 1). Interestingly, when the time since last having intercourse was short, the relationship between PROP and COAX was reversed. Neither TIME, PROP, nor the interaction between them predicted COERCE, *p*s > .11. Consistent with our prediction, there were no main effects or interactions among female participants, *p*s > .14.

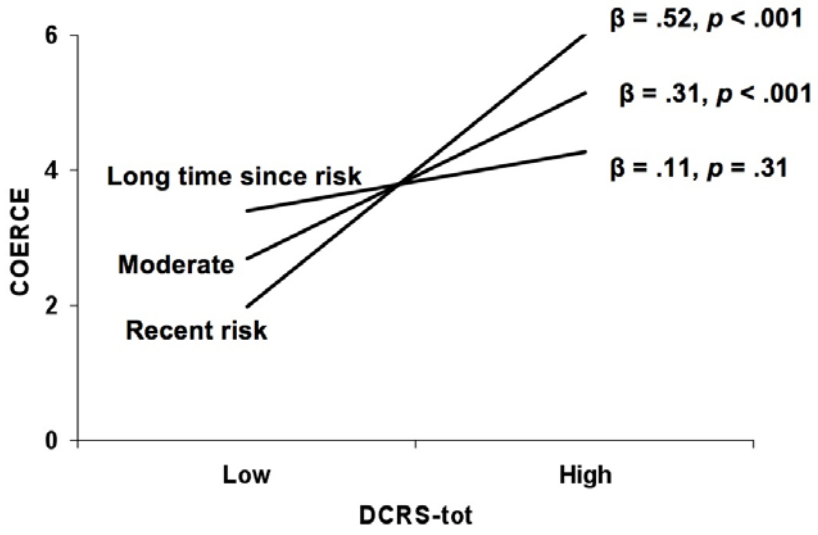
Figure 1. Simple slopes of the relationship between PROP and COAX when the time since last intercourse was high (+1 SD), moderate (mean), and low (-1 SD) (for graphing procedures see Aiken and West, 1991; Cohen et al., 2003).



Direct Cuckoldry Risk

There was a significant main effect for DCRS-tot on COERCE, $F_{1,142} = 15.66$, $p < .001$ but not COAX, $F_{1,142} = .30$, $p = .58$. DCRS-tim did not predict COAX, $F_{1,142} = 2.32$, $p = .13$, or COERCE, $F_{1,142} = .24$, $p = .63$. These results were also qualified by a significant interaction between DCRS-tot and DCRS-tim on COERCE, $F_{1,142} = 5.80$, $p = .02$. Our prediction was supported from a follow-up simple slopes analysis—there was a positive relationship between the number of cuckoldry risk experiences and propensity for sexual coercion only when these events took place more recently (see Figure 2). Apart from a marginally significant relationship between DCRS-tot and COAX, $F_{1,149} = 3.33$, $p = .07$, there were no significant main effects or interactions among female participants, ps > .12.

Figure 2. Simple slopes of the relationship between DCRS-tot and COERCE when the average time since the risk events took place was long (+1 SD), moderate (mean), and recent (-1 SD).



STUDY 2: FORENSIC SAMPLE

Methods

Offender sample

Archived files of 55 offenders who were either committed or assessed at a maximum security psychiatric facility were reviewed. Files of nonsexual partner assaulters ($n = 30$) were randomly selected, whereas all available partner rapist files were reviewed ($n = 25$) due to their low base rate. Sample sizes varied across analyses due to data availability.

Measures

To evaluate cuckoldry risk among convicted partner rapists and partner assaulters, archived case files were reviewed by two raters for descriptions of the circumstances prior to the offence. One rater was blind to study hypotheses. The degree to which offenders

experienced cuckoldry risk events was tabulated by summing the number of risk event types that preceded the assault. These events, selected because they are established cues to infidelity (Shackelford and Buss, 1997; Shackelford et al., 2002), include: suspected, known, or threatened infidelity; left/leaving partner for another man; experiencing jealousy; sexual refusal or loss of sexual interest; separated or threatened separation; refused going back to partner; or perpetrator reported a long period since last having intercourse with his partner. Absence of cuckoldry risk events were coded only if crime synopsis information was available and none of the risk items were applicable. The average percent agreement across risk categories between the two raters was 91.2%.

Results

Partner rapists (M = 1.88, SD = .81) experienced significantly more cuckoldry risk events prior to committing their offence than nonsexual partner assaulters (M = 1.28, SD = .46), $t_{23.25} = 2.61$, $p = .02$ (adjusted for unequal variance).

Twenty-two of the 25 partner rapists had archived information about the crime. All cuckoldry risk categories were experienced by these men: 27.2% suspected, knew, or were threatened with infidelity; 9% had a partner who left or planned to leave for another man; 13.6% reported being jealous; 22.7% had a partner who refused or lost interest in sex; 40.9% were separated or threatened with separation; 18.2% had an ex-partner who did not want to renew the relationship; and only 4.5% reported not having sexual intercourse with their partner recently. When combining across cuckoldry risk items, a large proportion of partner rapists experienced cuckoldry risk events (72.7%).

Twenty-nine of the 30 nonsexual partner assaulters had a crime synopsis in their files. Of these men, 5 of the 7 cuckoldry risk categories were experienced: 31% suspected, knew, or were threatened with infidelity; 6.9% had a partner who left or was leaving for another man; 6.9% reported being jealous; 6.9% had a partner who refused or lost interest in sex; 27.6% were separated or threatened with separation; and none of the partner assaulters reported having an ex-partner who did not want to renew the relationship or did not have sexual intercourse with his partner in a long time. When combining across cuckoldry risk items, a large proportion of nonsexual partner assaulters experienced cuckoldry risk events (62.1%). Though the difference between partner rapists and partner assaulters in the proportion of men who experienced any cuckoldry risk event was in the expected direction, the difference was not significant, Pearson $\chi^2 = 0.14$, $p = 0.71$.

Discussion

The purpose of these two studies was to provide a test of the partner sexual coercion as a response to cuckoldry risk hypothesis by examining several important characteristics of cuckoldry risk and the responses to such behavior. Each of these characteristics will be described and we will conclude our discussion by addressing how partner sexual coercion is related to other behaviors designed to manage cuckoldry risk.

Response to cuckoldry risk is not arbitrary

The strategy used to obtain sex from a reluctant sexual partner depends on the available cues. Men were more likely to favor benign tactics when cues to cuckoldry risk

were indirect—when men did not have sex in a while and spent a larger proportion of time away from their partner, they were more likely to show an interest for sexual coaxing. On the other hand, men who experienced more direct cues to infidelity reported a greater propensity for sexual coercion when these cues occurred more recently. The facultative use of these tactics makes sense when understanding the circumstances surrounding each type of cue.

Indirect cues in the absence of direct cues do not mean one's partner is interested in other men, particularly if she is still sexually responsive. A female partner who refuses sex under this scenario, however, may signal infidelity. Thus, sexual coaxing is a tactic that would likely change a partner's interest, and if disinterest is persistent there is still a low enough risk where the cost of switching to sexual coercion outweighs the benefit (especially if a coaxing strategy is successful each time). This strategy minimizes cuckoldry risk while maintaining the benefit of retaining a mate. Alternatively, a greater interest in coaxing may simply be a manifestation of another more common adaptation to sperm competition—increasing sexual frequency (Shackelford, Goetz, Guta, and Schmitt, 2006). A male who has not maintained frequent copulations due to physical separation may be more inclined to use sexual coaxing to "make up for lost time."

On the other hand, experiencing recent cues to infidelity in addition to unrelenting sexual disinterest is more diagnostic of imminent or recent infidelity. Women, for example, report waiting 48 hours after an extra-pair copulation before resuming sexual activity with their partner (Gallup et al., 2006). Under such circumstances, a coaxing strategy is likely a futile one. More forceful tactics become less costly if they serve as a last-ditch effort to copulate with a partner who is dissolving the relationship or has already left.

A greater interest in using tactics to obtain sex under cuckoldry risk conditions is not arbitrary because they enhance the probability of successful fertilizations. Supporting this view is the concept of *last male sperm precedence* (Birkhead, 2000), where males who are last to copulate are most likely to achieve successful fertilization. Although last male sperm precedence is typically found in bird and insect species, mating order effects have been studied in mammals as well (Ginsberg and Huck, 1989). In humans, there is some evidence that sperm displacement by males is a functional response to sperm competition (Gallup et al., 2003; Goetz et al., 2005).

Cuckoldry risk is dynamic

Facultative mechanisms can either be developmentally fixed (i.e. tactic changes but remains constant), or developmentally flexible (i.e. tactic switches over time). Our results suggest the cuckoldry risk mechanism meets criteria for the latter. Both the proportion of time with one's partner and the number of cuckoldry risk incidents were related to interest in obtaining sex only under certain temporal conditions. A strategy that maintains the same coercive sexual strategy over long periods of time does not provide a selective advantage due to the costs associated with such behavior, including victim injury, familial revenge, and possible dissolution of the relationship. Though males may be willing to incur these costs if the relationship is already on the brink of "breaking up," switching back to a non-coercive sexual strategy would minimize additional costs over the long term, whether it is with the same partner or with any subsequent partners.

Satisfying our hypothesis, proportion was negatively related to interest in sexual coaxing only when the time since last sex was further away. When testing predictions

derived from the cuckoldry risk hypothesis, researchers are therefore advised to use a more rigorous approach by measuring temporal moderators. There is a caveat, however, in interpreting the PROP variable. In retrospect, it became apparent that having sex recently not only negates any current risk but invalidates proportion as an index of risk. For instance, spending 50% of the time with your partner since last having intercourse is qualitatively different if coitus occurred 2 hours ago versus 2 weeks ago. The indirect risk of cuckoldry is higher in the latter than in the former scenario. The positive relationship between proportion and coaxing when time since sex is recent is therefore difficult to explain because proportion is no longer meaningful.

From a practical perspective, cuckoldry risk is relevant to the dynamic risk assessment literature (see Quinsey, Jones, Book, and Barr, 2006). Assessing the risk of committing a violent or sexual offence has been used for tailoring treatment programs, aiding front line workers, and informing judicial decisions. Because sexual coercion in relationships appears to be a facultative response to cuckoldry risk, researchers and practitioners interested in predicting the proximal risk of sexual coercion in relationships should either test for the inclusion of cuckoldry risk when developing an actuarial tool or include a measure of cuckoldry risk to complement other risk measures.

Coercive response to infidelity is sex-specific

Though sex differences in the frequency of partner sexual coercion are known, understanding the sex-specific mechanism underlying these differences is not. By demonstrating that men exhibit a greater interest for coercive strategies when more cues to infidelity are experienced is consistent with the hypothesis that sexual coercion is a male adaptation to cuckoldry risk and identifies one mechanism that accounts for these differences. This finding is unique because predictors of violent and sexual behavior tend to be the same between men and women (e.g., Harris, Rice, and Camilleri, 2004; Simourd and Andrews, 1994). In these cases, sex differences can be accounted for in two ways: men either have greater exposure to such risk factors, or men are more vulnerable to risk factors than women (e.g., Cloninger's two-threshold model; Cloninger, Reich, and Guze, 1975; Cloninger, Christiansen, Reich, and Gottesman, 1978). Data from our study provides a straightforward explanation because variability in sexual coercion is explained by a sensitivity to cuckoldry risk only among men and not among women. That is—even if men and women experience equal risks of infidelity, higher prevalence of sexual coercion results from this male-specific response. Our data do not suggest women are uninterested in sexual coaxing or coercion, but that their interest in such behavior is unrelated to temporal changes in infidelity risk. An extension of our findings is to isolate male-specific cognitive, neurological, and hormonal mechanisms involved with sexual arousal and proclivity for-, or disinhibition to violence that operates during cuckoldry risk conditions.

Limitations of self-reports

Our first study measured self-reported propensity for sexual coaxing and coercion. We fully acknowledge that using self-report propensity to assay sexual coercion does not necessarily predict overt behavior. However, by using a self-report propensity measure we were able to look at the relationship between theoretically relevant constructs that are difficult to obtain in large numbers from convicted partner rapists. If behavior varies according to fluctuations in cuckoldry risk, we expect a male psychology that supports

tactics to obtain sex from a reluctant partner to vary in the same way. Furthermore, the scale we selected correlates with self reports of engaging in sexually coercive behavior in relationships (Camilleri et al., in press). So although we acknowledge the limitations of self-report, we are confident that the effects we found demonstrate the function of an underlying cuckoldry risk mechanism. External validity was also addressed by studying the circumstances preceding the acts of men convicted of raping their romantic partner.

Cuckoldry risk and partner rape

An important finding was the confirmation that a large proportion of men who were convicted of raping their romantic partner experienced some degree of cuckoldry risk. Though the relationship between sexual jealousy and domestic assault is well known, our study is the first to implicate cuckoldry in convicted cases of partner rape and provides initial evidence that partner sexual assault functions to reduce risk through sperm competition whereas domestic assault functions to prevent the risk from happening. The only other study to demonstrate this effect, though not intentionally, was conducted by Shields and Hanneke (1983), described earlier. Our study showed a trend similar to Shields and Hanneke's by finding partner rapists experienced more cuckoldry risk events prior to their offence than partner assaulters. The difference between partner rapists and partner assaulters in the proportion of men who experienced any cuckoldry risk event was not significant, however. Follow-up studies with larger samples and more detailed information on the type of cuckoldry risk events experienced by partner rapists and partner assaulters will elucidate any similarities and differences between these groups. Also, by using forensic samples we ensure that cuckoldry risk as it relates to partner sexual aggression is not an artifact of using self-reports.

Summary and general conclusions

The presence of sperm competition in human history has created the condition where psychological mechanisms that identify cuckoldry risk and motivate the individual to reduce the risk provided a fitness benefit to males who had such mechanisms. In addition to finding that most partner rapists experienced cuckoldry risk events prior to committing their offence, results from our community sample suggest using strategies to obtain sex from a reluctant sexual partner depends on certain conditions. These conditions include both temporal measures of risk, and the type of risk, whether direct or indirect. The complexity of male responses to cuckoldry risk, however, extends beyond the behaviors evaluated in our study (see Platek and Shackelford, 2006). There are many psychological mechanisms that deal with various aspects cuckoldry risk that can be understood as a cuckoldry risk management system. This system is comprised of mechanisms designed to gauge the type of risk, and elicit responses to appropriately match each one. These responses include the various human paternal-assurance tactics outlined by Gallup and Burch (2006), such as insemination prevention strategies, counter-insemination strategies, pregnancy-termination strategies, and postpartum investment strategies.

Risks can be evident prior to infidelity, such as characteristics that make a partner more desirable to the opposite sex, or signs of emotional infidelity that may eventually lead to sexual infidelity – would elicit behaviors such as assortative mating or mate guarding to prevent infidelity from occurring (i.e. domestic assault as coercive control; Daly and Wilson, 1988). Risks indicating infidelity vary in terms of how direct the evidence for them

is. As we have seen, indirect risk (i.e. circumstances that create an opportunity for infidelity) is likely to elicit an interest in sexual coaxing, whereas direct risk (i.e. cues to infidelity) results in an interest in sexual coercion. Other plausible adaptive responses to indirect risk include increasing the frequency of copulations, and responses to direct risk include assaulting pregnant partners to initiate a miscarriage (Burch and Gallup, 2004; Lalumière et al., 2005), using vigorous copulation that interferes with embryo implantation (see Gallup and Burch, 2006), and uxoricide to reduce the fitness of rival males (Buss, 2005), though uxoricide can also be explained as a byproduct of coercive control (Daly and Wilson, 1988). Presence of step-children also seems to heighten the risk of domestic violence (Burch and Gallup, 2000; Daly, Singh, and Wilson, 1993; Daly, Wiseman, and Wilson, 1997). Tests of whether these interests covary or if individual differences predict the type of response remain to be investigated.

Knowing the characteristics surrounding cuckoldry risk, we hypothesize that any subsequent test of this hypothesis will show that the degree to which sexual coercion is used is directly related to the amount of victim resistance plus the probability that infidelity has occurred, moderated by infidelity recency. Not only does this model have initial support from our study, it is consistent with the nonhuman literature on forced copulation and identifies the proximal cues to sexual coercion while explaining the ultimate causes of such acts. Further research could test this model by using our paradigm and studying variations in the level of partner resistance, and should examine in greater detail whether cuckoldry risk is a unique and mutually exclusive predictor of partner sexual coercion.

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