THE PSYCHOLOGY OF PARTNER SEXUAL COERCION

by

Joseph Anthony Camilleri

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Abstract

There have been few investigations of sexual coercion in relationships. I conducted several studies to develop a measure of partner sexual coercion and to identify its proximate causes and the relevant personal characteristics of male perpetrators. Community participants' self-reported propensity to engage in various tactics to obtain sex from a reluctant partner clustered into a subscale relating to sexual coercion and a subscale pertaining to sexual coaxing. These subscales had excellent internal reliability, construct validity, criterion validity, and were used to test predictions in subsequent studies. I tested the application of Lalumière et al.'s (2005) three-path model for the development of sexually coercive behavior in general to sexual coercion in relationships. Self-reported interest in partner sexual coercion in a community sample was significantly related to psychopathy, but not age or neurodeveopmental insults. I confirmed the importance of psychopathy in this model by comparing men who raped their partner to other sex offender groups. Another characteristic of sex offenders, sexual deviance, was tested for its application to partner rapists. Unlike non-partner rapists, men who raped their partner exhibited low sexual arousal to rape scenarios, similar to community controls. Cuckoldry risk, a hypothesized proximate cause of partner sexual coercion, was also tested. Direct cues of cuckoldry risk were related to self-reported propensity for partner sexual coercion, whereas indirect cues of cuckoldry risk were related to sexual coaxing. In a forensic sample, most partner rapists had experienced cuckoldry risk prior to committing their offense, and they experienced more cuckoldry risk events than partner assaulters. A necessary condition of the cuckoldry risk hypothesis is that men should exhibit sexual arousal to cues signaling cuckoldry risk. Men in a community sample exhibited as much sexual arousal to stories depicting partner infidelity as they did to stories depicting consenting sex with their partners, and men who were currently in relationships showed greater arousal to stories of infidelity than consenting sex. Taken together,

my results suggest psychopathy and cuckoldry risk are important contributors to partner sexual

coercion.

Co-Authorship

Vernon L. Quinsey provided feedback on the design, analysis, and writing for each of the studies. Results reported in the scale validity study (Chapter 2, Study 2) were part of a research project by Jennifer L. Tapscott, who helped with the design, data collection, analysis, and writing for that study. In the study on partner rapists sexual preferences (Chapter 4), Grant T. Harris helped with data management and writing, and Aaron T. Goetz helped with the design and writing. Joseph A. Camilleri, as first-author for each of the studies, was responsible for their conception, design, data collection, analysis, and write-up.

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Chapter 1
General Introduction

1.1 Prevalence and Consequences of Partner Sexual Coercion

The psychological literature on sexual coercion in romantic relationships is limited despite evidence suggesting that such behaviour is a pervasive problem. Depending on the definition of sexual coercion, prevalence rates of intimate partner sexual coercion experienced by women vary from 7% to 34% (Basile, 2002; Bowker, 1983; Costa, Braun, & Birbaumer, 2003; Finkelhor, Hotaling, & Yllo, 1988; Hanneke & Shields, 1985; Russell, 1990; Tjaden & Thoennes, 1998). The most common form of partner sexual coercion involves penile-vaginal intercourse (Peacock, 1998), potentially resulting in unwanted pregnancy (Gottschall & Gottschall, 2003; Krueger, 1988; McFarlane, 2007; McFarlane et al., 2005). Physical aggression also poses a serious risk to victims of all forms of sexual coercion (DeMaris, 1997; Hussain & Khan, 2008; Kilpatrick, Best, Saunders, & Veronen, 1988; Monson & Langhinrichsen-Rohling, 1998; Resnick, Kilpatrick, Walsh, & Veronen, 1991). These issues, along with the high prevalence rate of partner sexual coercion, suggest partner sexual coercion poses a major problem for some women's physical and mental health.

1.2 Defining Partner Sexual Coercion

The current literature on criminal behavior uses three general crime categories: (1) sexual, (2) nonsexual violent, (3) nonsexual nonviolent. All "hands-on" sexual crimes[1] are considered violent because they include the physical violation of another person, whereas violent offending may not have a sexual component (Quinsey, Harris, Rice, & Cormier, 2006). Nonsexual nonviolent crimes are comprised of property crimes and violations of conditional

orders. Aggression can be differentiated according to whether it causes or does not cause physical injury (Monahan et al., 2001). Similarly, sexual coercion causes varying degrees of physical injury to the victim (Rice, Harris, Lang, & Cormier, 2006). Partner sexual coercion is therefore defined as an attempt to obtain sex from a reluctant sexual partner by using manipulative (e.g., threats) or forceful (e.g., physical violence) tactics that may result in physical or emotional trauma to the victim. Thus, sexual coercion includes rape and sexual assault. Sexual partners are those involved in relationships that assume sexual exclusivity, including dating, living-in, engaged, common-law, and marital relationships.

1.3 Need for Psychological Research

Recently, Ferro, Cermele, and Saltzman (2008) found that people are more likely endorse rape myths when the perpetrator was a husband than when the perpetrator was a neighbour. For example, Basile (2002) found that 18% of the population do not believe partner sexual coercion occurs. This lack of awareness of the partner sexual coercion problem is also reflected in the paucity of empirical research. As I outline in Chapter 3, a recent search of the PsycINFO database showed that only 2% of the 2,949 papers of on sexual coercion has focused on sexual offending against romantic partners. Of these papers, only 6% used experimental designs to understand its causes. A recent review of the partner rape literature confirmed the lack of psychological research in this area (Martin, Taft, & Resick, 2007). Attempts to understand the etiology of partner sexual coercion have been scarce, and those who have studied etiology have adopted what evolutionary psychologists have termed the Standard Social Science Model (SSSM; Thornhill & Palmer, 2000; Tooby & Cosmides, 1992, 2005). The aim of this thesis was to understand the etiology of partner

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[1] "Hands off" sexual offenses include voyeurism and exhibitionism, for example.

sexual coercion by investigating both the ultimate and proximate causes of partner sexual coercion using multiple converging methods.

1.4 The Evolutionary Psychology of Sexual Coercion

Darwinian selectionist thinking provides insight into the psychology of sexual coercion in romantic relationships. This evolutionary approach allows researchers to understand why a psychological mechanism promoting coercive sexual behaviour may exist in the context of relationships (i.e., ultimate cause) and provides clues about the functional design of such a mechanism (i.e., proximate cause).

Much of the Darwinian discussion on sexual coercion has focused on non-human animals. This literature suggests that sexual coercion functions by using force or the threat of force to increase the probability of mating with a reluctant female during her fertile period, resulting in selection for male-specific traits that reduce female resistance (Andersson & Iwasa, 1996; Clutton-Brock & Parker, 1995; Smuts & Smuts, 1993). Lalumière, Harris, Quinsey, and Rice (2005) noted that the characteristics of species in which at least some males engage in forced copulation are also present in humans. The list of such traits includes sexual size dimorphism, high fitness variance among males, male-biased operational sex ratio, asynchronous breeding, and lower male than female parental investment.

Thornhill and Palmer (2000) argued that sexual coercion in humans may be an adaptation that solved the problem of female resistance to male copulatory advances. If such a behaviour is adaptive, it should be comprised of specific design features. If sexual coercion is a special-purpose adaptation in humans, they proposed we should see psychological mechanisms that, for example, provide males with the ability to assess potential victim vulnerability, or motivate men who are unlikely to achieve consensual copulations, and to engage in sexual coercion (for a

complete discussion see Thornhill & Palmer, 2000, Ch. 3). The authors provided some evidence to support each of these potential mechanisms. They also proposed that partner sexual coercion may be viewed as an adaptation to the risks posed by female infidelity, but no empirical test of their hypothesis had been conducted by that time.

It is also possible that rape behaviour may be a by-product of other adaptations. For instance, sexual coercion may have emerged from the following adaptations; (1) preference for numerous partners with little commitment; (2) proclivity towards impersonal sex; (3) arousal to visual sexual stimuli; (4) reduced ability to abstain from sex and discriminate partners; and (5) preference for mate variety (Malamuth, 1996; Symons, 1979; Thornhill & Palmer, 2000). Some examples of sexual behaviours that are not adaptive but are byproducts of men's sexual desire include child molestation, bestiality, frottage, and masturbation (Thornhill & Palmer, 2000).

Evidence concerning the function of sexual coercion in humans, however, is growing. Sexual coercion in humans is typically conducted by males against reproductively viable females (Thornhill & Thornhill, 1983), is likely to involve penile-vaginal penetration (Peacock, 1998), and has at least the same probability of leading to pregnancy as consenting sex (Gottschall & Gottschall, 2003; McFarlane, 2007). Thus, sexual coercion in humans can be understood as a male-specific reproductive behaviour (Quinsey & Lalumière, 1995). Although sexual coercion must, on average, increase the fitness of sexually-deprived males, there may be several proximate causes that result in different facultative and obligate uses of sexual coercion within mating partnerships as well.

1.5 Individual Differences

There are several circumstances where sexual coercion could have been adaptive in ancestral environments, and these might have led to individual differences in the propensity to

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use sexual coercion (Lalumière et al., 2005). First, males in late adolescence/young adulthood are more prone to compete for access to females and are therefore more likely to exhibit high risk behaviors – sexual coercion among them. Wilson and Daly (1985) have termed the risk taking propensities of young men the young male syndrome. Second, competitively disadvantaged males may learn at an early age that they will have difficulties in gaining access to females and facultatively adopt coercive tactics to gain sex. Third, psychopathic males appear to use sexual coercion as part of an obligate antisocial strategy to exploit rivals and mating resources. Lastly, a sexually deviant interest in rape scenarios, known as biastophilia, may allow arousal under many contexts, including nonconsent (Quinsey & Lalumière, 1995). There is some evidence to suggest that male membership in the first three categories is mutually exclusive (e.g., Harris, Rice, & Lalumière, 2001). Lalumière et al. (2005) hypothesized that that partner rapists fall into one of these categories and use sexual coercion in response to cuckoldry risk.

1.6 Sperm Competition & Cuckoldry Risk

Sexual coercion associated with the young male syndrome, competitive disadvantage, and psychopathy results from barriers to mate acquisition. This explanation alone fails to account for sexual coercion by males who form pair bonds because forcing copulation with a partner will not increase fitness to the same extent as forcing copulation with multiple females. Another barrier to reproduction, known as sperm competition, provides a more relevant explanation for partner sexual coercion.

Sperm competition occurs when females copulate with more than one male during the same fertile cycle, and competition between males ensues in order successfully inseminate the female's ova. Sperm competition over successive generations results in the evolution of morphological and behavioural adaptations that reduce risks of cuckoldry resulting from such

competition (Birkhead, 2000). Much of the early research on sperm competition was conducted on nonhuman species. As reviewed by Lalumière et al. (2005), it was shown that among species exhibiting polyandrous mating systems, males produce more sperm in the presence of other males (e.g. among beetles & crabs) and force copulation if the male returns to see another male near his partner (e.g. mallards). Considering sperm competition arises from one condition—when more than one male inseminates a female during one ovulatory cycle—it is possible that sperm competition occurs in mating systems other than polyandry, as long as this condition is satisfied. Thus, sperm competition exists in monogamous species where extra pair copulations occur (Griffith, 2007; Hill, Montgomerie, Roeder, & Boag, 1994; Westneat & Stewart, 2003). There is ample evidence that such a mating system is in place with humans.

The possible influence of sperm competition on human psychology and morphology has gained interest over the past few years. Researchers have investigated the following adaptations to sperm competition: sexual interest (Pound, 2002); attraction and interest in a sexual partner (Shackelford et al., 2002); sexual behaviours (Shackelford, Pound, & Goetz, 2005); and penis morphology (Gallup et al., 2003). Most recently, a chapter in *The Handbook of Evolutionary Psychology* was devoted to psychological adaptations to sperm competition (Shackelford, Pound, Goetz, & LaMunyon, 2005). The results of these studies that identified ways in which men both identify and respond to sperm competition raises the question, *is partner sexual coercion another response to sperm competition?* Whereas sexual coercion by mate deprived males functions by increasing fitness of men who are least likely to form a pair bond or copulate with sexually receptive females, sexual coercion by males on their partner functions by increasing fitness of those who compete with rivals' sperm. Sexual coercion in concert with sperm competition, thus, provides a cohesive explanation for forced-in pair copulations.

1.7 Overview

I conducted a series of studies to understand the psychology of partner sexual coercion. In Chapter 2, I identify which behaviours constitute partner sexual coercion because some tactics men use to obtain sex in relationships are not forceful and are better understood as sexual coaxing. From these studies I developed a measure with two subscales that assess a person's current propensity for partner sexual coercion and sexual coaxing. These scales were used to test several predictions in studies described in Chapters 3 and 5. In Chapter 3, I address which individual difference characteristics of sexual offenders, namely their age, competitive disadvantage, and psychopathy, are also characteristic of men who sexually offend in relationships, and, in Chapter 4, I investigated sexual deviance as another possible individual difference characteristic of partner rapists. I address cuckoldry risk as an alternative route to partner sexual coercion in Chapter 5. After finding cuckoldry risk was an important predictor of partner sexual coercion, I studied how cuckoldry risk results in sexual coercion by testing whether men exhibit sexual arousal to signals of sperm competition and cuckoldry risk in Chapter 6. In Chapter 7, I synthesize results from these studies to describe our current understanding of partner sexual coercion psychology.

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Chapter 2
Assessing the Propensity for Sexual Coaxing and Sexual Coercion in Relationships

Camilleri, J. A., Quinsey, V. L., & Tapscott, J. L. (in press). *Archives of Sexual Behavior.*

2.1 Abstract

Although there are measures of sexual interest and sexual conflict in romantic relationships, none discriminate between sexual coaxing and sexual coercion or are sensitive to proximal changes in the propensity to use such strategies. In order to study these changes, we developed the Tactics to Obtain Sex Scale (TOSS) to assess self-reported likelihood of engaging in sexual coercion and sexual coaxing with a romantic partner. In Study 1, a sample of men and women ($N = 419$) in heterosexual relationships completed the TOSS and measures of its predicted correlates, including antisociality and mating success. An exploratory factor analysis of TOSS scores yielded a two-factor solution. As predicted, the two-factor solution identified coaxing (COAX) and coercion (COERCE) subscales. There was good internal reliability for TOSS, COAX, and COERCE scales (Cronbach alphas > .89). Significant correlations between COAX and self-perceived mating success and between COERCE and psychopathy provided preliminary evidence of construct validity. In Study 2, we replicated the factor structure and established the scale as a reliable and valid index of partner sexual coercion and coaxing propensity.

2.2 Introduction

Growing interest in studying sexual coercion in the context of romantic relationships is demonstrated by recent research on prevalence rates (Basile, 2002), severity of victim injuries (DeMaris, 1997; Monson & Langhinrichsen-Rohling, 1998), and causes of such behavior (Goetz & Shackelford, 2006; Lalumière, Harris, Quinsey, & Rice, 2005). Research on partner sexual

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coercion, defined as a strategy to obtain sex from a reluctant sexual partner by using forceful and manipulative tactics that may result in physical and emotional trauma, has been hampered because measurements for evaluating sexual conflict in relationships are composed entirely of static items (i.e., items that measure past instances of sexual coercion, coaxing, or abuse). Scales evaluating these historic events are not amenable for detecting dynamic changes in the propensity to engage in sexual coercion.

Although scales with static items have been successfully applied to predicting violent and sexual recidivism in both forensic and nonforensic populations (e.g., Hanson & Harris, 2000; Harris, Rice, & Camilleri, 2004; Quinsey, Harris, Rice, & Cormier, 2006), their clinical utility is restricted to identifying individuals who vary in long-term risk (Andrews et al., 1990) as opposed to measuring changes in risk. Researchers are now developing dynamic risk scales to measure short-term fluctuations in risk (Wong & Gordon, 2006). Proximal risk scales can measure changes in risk over rather short time frames (Quinsey, Jones, Book, & Barr, 2006). Dynamic risk scales benefit clinicians and researchers by targeting psychological characteristics that are amenable to treatment, tracking treatment progress, and providing an opportunity to identify causal mechanisms by experiment.

Currently available measures of sexual conflict in relationships include static factors or items classified as *temporally fixed dynamic variables* (i.e., once the act occurs it cannot be changed; Quinsey, Jones, et al., 2006). A popular measure, the Revised Conflict Tactics Scale (CTS2; Straus, Hamby, Boney-McCoy, & Sugarman, 1996), assesses the frequency and severity of both physical and sexual aggression in relationships over the past year. Similarly, the Sexual Coercion in Intimate Relationships Scale (SCIRS; Shackelford & Goetz, 2004) evaluates the frequency of violence, manipulation, and threats to obtain sex from a reluctant sexual partner over the past month. Other measures of sexual coercion also include static items, such as the

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Aggressive Sexual Behavior Inventory (Mosher & Anderson, 1986), the Coercive Sexuality Scale (Rapaport & Burkhart, 1984), Sexual Experiences Survey (Koss & Oros, 1982), and the Sexual Coercion Inventory (Waldner, Vaden-Goad, & Sikka, 1999). Gauging the presence, frequency, or degree of conflict in relationships allows for correlational research but is not conducive to understanding causal relationships. Researchers using experimental or quasi-experimental designs to determine the causes of partner sexual coercion are better equipped with a measure that is more sensitive to change.

Measures with the potential for evaluating dynamic changes in propensity for partner sexual coercion are the various rape attitude measures, such as the Rape Myth Acceptance Scale (Burt, 1980), Illinois Rape Myth Acceptance Scale (Payne, Lonsway, & Fitzgerald, 1999), Rape Empathy Scale (Deitz, Blackwell, Daley, & Bentley, 1982), and Attraction to Sexual Aggression Scale (Malamuth, 1989). There is some evidence to suggest that these attitudes can be temporarily modified through educational programs (Brecklin & Forde, 2001) but it remains uncertain whether such changes in rape attitudes result in behavioral changes as well (Camilleri & Quinsey, 2008). Also, developing valid attitude measures require adherence to the principle of compatibility (i.e., measuring specific attitudes best predicts specific behaviors; Eagly & Chaiken, 1998); many attitude measures towards general sexual aggression lack proper specificity. To our knowledge, no scales evaluating attitudes towards partner sexual coercion have been developed. Other plausible candidates for evaluating dynamic risk are penile plethysmography, Implicit Association Test, card sort, neuroimaging, and other physiological measures (for a review, see Camilleri & Quinsey, 2008). Despite the benefits of using measures that are less affected by social desirability, reliable and valid self-reports are useful alternatives to these more expensive and time consuming methods of assessment.

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Though researchers have been interested in severe responses to sexual reluctance from one's partner, there are other, more pedestrian responses that require attention in the assessment literature—we refer to them as *sexual coaxing* tactics. Sexual coaxing can be defined as a strategy that uses benign, seductive tactics to obtain sex from a reluctant sexual partner. Although sexual coaxing is a more common and generally acceptable behavior in relationships, there are few instruments to measure its frequency or an individual's propensity to engage in it. In fact, we could locate only a single measure of sexual coaxing in relationships—the Sexual Signaling Behaviors Inventory (SSBI; Jesser, 1978), which is also comprised entirely of static items. There are other measures that evaluate general sexual desire, such as the Hurlbert Index of Sexual Desire (HISD; Apt & Hurlbert, 1992) and the Sexual Desire Inventory (SDI; Spector, Carey, & Steinberg, 1996), but the HISD does not evaluate particular tactics for obtaining sex and the SDI is mostly comprised of static items.

Given our concerns with available psychological measures for assessing sexual attitudes and behavior in relationships, we developed the Tactics to Obtain Sex Scale (TOSS) so that it would discriminate between sexually *coercive* and sexually *coaxing* acts, measure acts varying in *severity*, assess both *verbal* and *physical* acts, and assess *current propensity* for engaging in such acts. The TOSS can therefore be understood as an attitude measure that indexes the propensity for sexual coercion and coaxing in romantic relationships. A reliable and valid scale with these properties will give researchers a more comprehensive measure to investigate responses to, and causes of, conflicting sexual interests. In two studies, we investigated the psychometric properties of the TOSS. The first study was used to design a scale that assesses the degree to which a person might use tactics to obtain sex from a reluctant sexual partner, identify its factor structure, and evaluate its reliability and validity. The purpose of the second study was to replicate the factor

structure found in Study 1 with another sample, and to provide a more extensive test of the scale's validity.

2.3 Study 1.1: Tactics to Obtain Sex Scale Development and Factor Structure

2.3.1 Method

Participants

In order to obtain sufficient variability in demographics, particularly for relationship type, relationship length, and participant age, participants were recruited from both a psychology department participant pool ($n = 223$) and from the community using an advertisement in the local newspaper ($n = 196$). The number of males ($n = 197$) and females ($n = 221$) were approximately the same, and the total number of participants exceeded the sample size requirement of 300 for factor analyses (Tabachnik & Fidell, 2001). For their participation, students were given course credit and community participants were given $10. All participants were in a sexually active, heterosexual relationship. A few participants chose not to complete some measures, so sample sizes varied depending on the information that was available. Participants ranged in age from 17 to 78 ($M = 29.3$, $SD = 15.1$). Participants were in dating ($n = 257$), common-law ($n = 74$), or marital ($n = 86$) relationships for an average of 5.9 years ($SD = 9.9$) that ranged from .08 to 51 years. Income ranged from less than $10,000 per year to over $100,000 (mode $\leq$ $10,000). Of the community participants, 120 attended or were attending postsecondary education, 28 completed high school, and 30 did not complete high school; and 67 were employed, 33 worked and went to school, 13 were students who did not work, 47 were unemployed, and 30 were retired.

Measures

Tactics to Obtain Sex Scale (TOSS) items were selected based on behaviors described in the literature[2] and from the authors' clinical and research experience on sexual conflict. Because we planned on using exploratory factor analysis (EFA), we made sure there were at least five times more variables than the maximum number of expected factors (Fabrigar, Wegener, MacCallum, & Strahan, 1999). Since items were selected to represent one of six categories, we expected no more than six factors to emerge—coercion, coaxing, severe, less severe, verbal, and physical—we therefore generated a list of 36 (at least 30 were needed). The order of item presentation was randomized across categories.

In order to assess current propensity for using tactics to obtain sex, we asked participants how they would respond to a hypothetical situation at the present time. We defined current propensity as the degree to which people reported that they were likely to engage in various acts and how they perceived these acts as being effective in obtaining sex from an initially reluctant partner. That is, someone with a high probability of using tactics to obtain sex should report a greater likelihood in using these acts, view these acts as being effective in actually obtaining sex, and rate many of these tactics more favorably than someone who has a low probably of using tactics to obtain sex. For each item, likelihood and effectiveness were evaluated on a 5-point Likert-type scale, ranging from 0 (*definitely not*) to 4 (*definitely*). Likelihood and effectiveness total scores were highly correlated, $r(409) = .80$, which supported the use of a composite score by summing each individual's response to the likelihood and effectiveness questions for each item. TOSS total scores were calculated by summing these composite scores. See Appendix A for the complete scale.

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[2] For example, some items are from other scales that measure sexually coercive behavior.

In addition to completing the TOSS questionnaire, participants completed measures that were used to provide initial validation of the TOSS, including a demographic questionnaire and scales assessing mating success and antisociality (see Study 1.2, Method). Demographic information included age, sex, relationship type (dating, cohabiting, common-law, or marital), and employment status (employed/student, unemployed, retired).

Procedure

Participants visited our laboratory and provided informed consent prior to their involvement. The researcher was present throughout the session to answer any questions. Participants were debriefed upon completing the survey.

Considering that items varied in severity (i.e., no harm to possible harm), act (i.e., physical or verbal), and type (i.e., coaxing or coercion) categories, EFA was used to determine the optimal factor structure of the TOSS and to identify any possible subscales. Specialists in EFA are divided in their view on the conceptual similarities and differences between common factor (e.g., maximum likelihood; ML) and principal component (PCA) methods (DeVellis, 2003; Fabrigar et al., 1999), so we first used ML because it allows for goodness of fit indexes, followed by PCA to replicate the structure because PCA is robust to the distributional assumptions affecting ML. We expected both methods to converge on the same solution because, for example, coaxing and coercion items represent different measures (determined by PCA) of different constructs (determined by ML).

Three methods were used to identify the minimal number of TOSS factors. A scree plot of the initial eigenvalues was used to obtain an initial estimate of the possible number of factors, followed by Velicer's minimum average partial (MAP) and parallel analyses, which provide more objective methods for determining the number of factors (for detailed description of these

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analyses, see O'Connor, 2000). Once the number of factors was estimated, we ran the EFA for each plausible solution using oblique rotation[3] to identify which solution provided the simplest structure. To ensure that the factor structure was equivalent between men and women, students and community participants, and between likelihood and effectiveness components, EFA was run separately for each group.

2.3.2 Results

Scree Test, Velicer's MAP, and Parallel Analysis

We first generated a scree plot using initial eigenvalues. The change in slope occurred between the third and fourth factors and the last major decline in slope occurred between factors 2 and 3, thus suggesting a two or three factor solution. A one factor solution accounted for 26.2% of the variance, two factors for 40%, with a smaller improvement for three factors, which explained 46% of the total variance in the raw data. Results from Velicer's MAP identified a three factor structure—the smallest average squared correlation of .012 was found in the third step. Using parallel analyses with 1000 randomly generated data sets, we found that the fourth factor had a slightly higher eigenvalue from the observed data (1.61) than the fourth factor from both the randomly generated data (M eignevalue = 1.46) and from the mean eigenvalue calculated from eigenvalues that fell within 95% of the randomly generated eigenvalue distribution (1.50). Though a four factor solution was not consistent with the first two methods, an error of over extraction is possible when using parallel analyses (O'Connor, 2000). Overall, these procedures suggest there was a 2 or 3 factor solution.

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[3] Fabrigar et al. (1999) suggested oblique rotation should be used first to determine if factors are correlated. If factors are uncorrelated, orthogonal rotation may then be used.

Rotation

Factor rotation was used to identify the number of factors that provides simple structure. Forcing a two factor solution using a maximum likelihood oblique rotation converged on a solution in five iterations (Table 1). All 12 coaxing items loaded onto Factor 1 (COAX), with factor loadings that ranged from .43 to .82. All 23 coercion items loaded onto Factor 2 (COERCE), with factor loadings that ranged from .40 to .71. Only one item, "take partner's clothes off", loaded onto Factor 1 (.43) and Factor 2 (.41). By excluding this one item, simple structure was achieved with a two-factor solution because coaxing and coercion items had loadings greater than .40 on their respective factors, with relatively small loadings on their alternative factor. This two-factor solution had marginally acceptable goodness-of-fit, RMSEA = .09, 90% CI = .08 to .09, and was a substantial improvement from the goodness-of-fit for a one-factor solution, RMSEA = .12, 90% CI = .12 to .13. The correlation between Factors 1 and 2, r = .26, suggests orthogonal rotation should be used because less than 10% of the variance was shared (Tabachnik & Fidell, 2001). Maximum likelihood varimax (i.e., orthogonal) rotation converged on the same solution in 3 iterations: coaxing and coercion items loaded onto their respective factors. Principal components analyses yielded the same simple structure.[4]

A three factor solution using maximum likelihood oblique rotation converged on a solution in 8 iterations (Table 1). Coaxing items remained the same, but coercion items were split into two factors: severe acts (COERCE-S) and less severe acts (COERCE-LS). Even though this solution also had acceptable goodness-of-fit, RMSEA = .07, 90% CI = .07 to .08, simple structure was not achieved because seven items had similar loadings on both coercion factors, and their loadings were less than .40. Though COAX had lower correlations with COERCE-S, r = -.06,

and COERCE-LS, $r = -.28$, a high correlation between COERCE factors, $r = .44$, suggested that orthogonal rotation was not applicable.

Not only did the two-factor solution provide simple structure, both factors were readily interpretable. The COAX subscale[5] included items that evaluated the degree to which a person might have used relatively benign and seductive tactics to obtain sex from a reluctant sexual partner, whereas the COERCE subscale included items that evaluated the degree to which a person might have used forceful tactics that may result in physical and emotional trauma. Also, the three factor solution that separated coercion items into severe and less severe factors was likely due to an artifact of item difficulty (TenVergert, Kingma, & Gillespie, 1990)[6]. Thus, we evaluated reliability and validity for the total scale and its two subscales, excluding the item that loaded onto both factors from the total scores ("take partner's clothes off").

We found equivalent simple structure when separating our sample[7]. That is, COAX items had strong loadings on the COAX factor and weak loadings on the COERCE factor. Likewise, COERCE items loaded strongly on the COERCE subscale but not the COAX subscale. A summary of these loadings are shown in Figures 1 and 2. These results suggest a robust factor structure among each of these groups.

2.3.3 Discussion

The results from Study 1.1 suggest that the tactics people use to obtain sex from a romantic partner can be categorized into either coaxing or coercive tactics. Scores on either subscale should therefore vary in different ways. That is, a propensity for sexual coaxing should

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[4] The same solutions were found with and without the "take partner's clothes off" variable. Contact the authors for orthogonal rotation and PCA factor loadings.

[5] Total scores were calculated for the overall TOSS, and separately for COAX and COERCE subscales.

[6] Possibility of skewed responses to some items may result in the production of an erroneous factor.

be related to variables associated with mating success, whereas a propensity for sexual coercion should also be related to variables associated with sexual aggression. In Study 1.2 we evaluated construct validity by testing the relationship between TOSS scores and age, self-perceived mating success, antisociality, and relationship type.

Age

Intercourse frequency in relationships decreases over time. For example, Udry (1980) found that, over a 4-year period, sexual frequency declined by 25%, with the steepest decline occurring among newlyweds. In a U.S. national survey, Call, Sprecher, and Schwartz (1995) found that age best predicted the decline of sexual intercourse among married men and women. Although researchers have not examined the frequency changes of partner sexual coercion over time, an established finding is that many sexual offenders (and other criminals in general) desist as they age. We therefore expected that TOSS and subscales COAX and COERCE ratings would also decline with age.

Self-Perceived Mating Success

Researchers have shown that people who perceive themselves as successful in attracting mateships experience actual success in the mating market and exhibit higher sexual interest. For example, men who scored higher on the Self Perceived Mating Success Scale (SPMS) had more sexual experience (Lalumière, Chalmers, Quinsey, & Seto, 1996), received more sexual invitations, and had a preference for short-term matings (Landolt, Lalumière, & Quinsey, 1995). We therefore expected that people who perceived themselves as being successful in mating, as measured by the SPMS, would also exhibit a preference for behavioral tactics that were likely to

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[7] We separated our sample by gender and student/community, and analyzed factor structure separately for effectiveness and likelihood.

result in successful mating, as measured by the COAX subscale. The SPMS was found to have good internal consistency (Cronbach's α =.83; Landolt et al., 1995).[8]

Antisociality

To assess antisociality, we used a measure of psychopathy because it is one of the most robust correlates of both violent and sexual offending. We used the revised Self-Report Psychopathy Scale III (SRP-III; Paulhus, Hemphill, & Hare, in press) because it was designed to evaluate psychopathy in nonforensic samples and an earlier version (SRP-II) correlated with both the PCL-R, $r = .54$ (Hare, 1991) and with the PCL-R Screening Version, $r = .62$ (Forth, Brown, Hart, & Hare, 1996). We predicted that participants who scored higher on psychopathy would score higher on COERCE items.

Relationship Type

Intercourse frequency varies across relationship types. Call, Sprecher, and Schwartz (1995) found that after controlling for age, people in cohabiting relationships had sexual intercourse more often than people in marital relationships. Call et al. did not provide operational definitions of cohabitation, so we separated our sample between those who were "living-in" and those who were legally "common-law," with the assumption that living-in was more similar to Call et al.'s "cohabiting" group and common-law was more like the marital group. If sexual frequency reflects sexual proclivity, then TOSS and COAX scores should be higher in dating or cohabiting relationships than in common-law or marital relationships. Because there is no expectation that the frequency of sexual coercion depends on the type of relationship, we did not expect any difference in COERCE scores across relationship type.

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[8] All reliability estimates were provided from the original scale development sample.

Employment Status

To ensure that the TOSS and its subscales function in expected ways, we selected employment status as a variable that should not be related to sexual propensity. There is no theoretical reason to believe that the degree to which a person uses tactics to obtain sex depends on employment status.

2.4 Study 1.2: Reliability and Validity

2.4.1 Method

Participants

Participants completed questionnaires for both Study 1.1 and Study 1.2 in one survey.

Measures & Procedure

To evaluate the construct validity of the TOSS and its subscales, five variables were selected to test for convergent validity, divergent validity, and sensitivity to temporal changes in sexual coercion and coaxing propensity: age, mating success (Self Perceived Mating Success Scale; Landolt, Lalumière, & Quinsey, 1995), psychopathy (Self-Report Psychopathy III Scale; Paulhus, Hemphill, & Hare, in press), relationship type (dating, cohabiting, common-law/marital), and employment status (employed/student, unemployed). Retired participants ($n = 27$) were excluded from the analysis on employment status.

COAX and COERCE subscales determined from the factor structure analyses in Study 1.1 were investigated for their internal reliability using Cronbach's alpha. Convergent validity was tested by using Pearson correlation coefficients between overall TOSS (and its subscales) and age, self-perceived mating success, and antisociality. One-way ANOVA using least

significant difference post-hoc tests were used to test for differences within relationship types and employment status on TOSS, COAX, and COERCE scores.

2.4.2 Results

Reliability

Internal consistency was high for TOSS, COAX, and COERCE, Cronbach's α = .91, .92, and .89, respectively.

Age, Mating Success, and Antisociality

Age was significantly related to TOSS, $r(402) = -.20$, $p < .001$, and COAX, $r(402) = -.26$, $p < .001$, but not COERCE, $r(399) = -.08$. Similar results were found when separating the analyses by sex (Table 2). In other words, as participant age increased, ratings of tactics, particularly coaxing tactics, decreased, whereas ratings of coercive tactics did not depend on the person's age. As expected, mating success was significantly related to TOSS, $r(406) = .10$, $p = .05$, and COAX, $r(406) = .12$, $p = .02$, but had no relationship with COERCE, $r(403) = .04$. Interestingly, self-reported mating success was related to TOSS and COAX scores only among men (Table 2).

Psychopathy was significantly related to TOSS, $r(409) = .20$, $p < .001$, COAX, $r(409) = .12$, $p = .03$, and COERCE, $r(406) = .23$, $p < .001$. To determine if there was a stronger relationship between COAX and psychopathy, we used the z test for comparing two dependent correlations (Meng, Rosenthal, & Rubin, 1992; Reddon, 1992). The relationship between psychopathy and COERCE was significantly stronger than the relationship between psychopathy and COAX, $z = -1.93$, $p = .05$ (2-tailed). Results remained the same when separating analyses by sex (Table 2).

Relationship Type

A one-way analysis of covariance (ANCOVA) to evaluate the differences between relationship types (i.e., dating, cohabiting, common-law/marital) after controlling for age was not significant for TOSS, $F(2, 398) < 1$, or COERCE scores, $F(2, 395) < 1$. Because the homogeneity of slopes assumption was not met for COAX scores (i.e., age was not linearly related to COAX at all levels of the relationship status variable), we tested for simple main effects (see Green & Salkind, 2008). Differences between relationship types were compared at three levels of the covariate: mean age (29 years), one standard deviation below the mean (14 years), and one standard deviation above the mean (44 years). Because our youngest participants were university students, we used 18 instead of 14 as our low age group. Participants in committed relationships had lower COAX scores than participants in dating and cohabiting relationships at age 18, ps < .006, and dating relationships at 29, $p = .009$ (the difference between committed and cohabiting relationships was not quite significant but in the expected direction, $p = .06$). At age 44, there were no differences between any relationship type on COAX scores, ps > .11. In other words, the influence of relationship type on interest in using coaxing tactics to obtain sex was found among younger participants (see Figure 4).

Analyzing results by sex did not change the interpretation of our results. For example, both men and women in dating relationships had more interest in using coaxing tactics to obtain sex from their partner than participants in common-law or marital relationships at ages 18 and 29, ps < .05, but not age 44, ps > .27. There were no differences between cohabiting and either dating or committed relationships, except among men at ages 18 and 29, and women at age 18, where participants in cohabiting relationships had higher COAX scores than participants in committed relationships, ps < .05. The only inconsistent result was finding that women in cohabiting relationships at age 44 were less interested in coaxing than women in committed and dating

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relationships, ps < .01. This result, however, may be attributed to the small number of women in cohabiting relationships ($n = 16$).[9]

Employment Status

A one-way ANCOVA was conducted to evaluate the differences between employment status (i.e., employed/student, unemployed), controlling for age, on TOSS, COAX, and COERCE scores. Nonsignificant results were found for TOSS, $F(1, 371) < 1$, COAX, $F(1, 371) < 1$, and for COERCE, $F(1, 368) < 1$. Similar results were found when separating men and women, ps > .46.

2.4.3 Discussion

The purpose of this study was to develop a scale to evaluate propensity to engage in sexual coercion and sexual coaxing with a reluctant sexual partner. The TOSS originally included 36 items derived from the literature on sexual behavior in relationships. One item was removed after finding that it loaded onto more than one factor. We designed the scale to meet several criteria, and a series of psychometric analyses confirmed that the TOSS met them.

First, the scale was comprehensive because it included items that vary in three domains-- severity (no harm to possible harm), act (verbal or physical), and tactic (coaxing or coercion)-- meaning that TOSS total score evaluated the degree to which participants reported they would use any tactic to obtain sex. Though we can assume that people with high scores on the TOSS indicate a strong interest in using multiple tactics, a preference for a particular type of tactic is unknown for those with low to moderate scores. The only situations in which TOSS total scores should be used is if there is interest in evaluating a person's general desire for intercourse with his or her partner, regardless of the type of tactic the person intends on using.

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[9] Contact the authors for a complete summary of these results.

Second, simple structure was achieved after separating items that assessed sexual coaxing from items that assessed sexual coercion. Initial validation of these subscales was confirmed by strong correlations between COERCE and antisociality, and between mating success and COAX. Though TOSS scores had excellent internal consistency and were significantly related to age, mating success, and psychopathy, using only one factor accounted for 26 percent of the variance of TOSS responding, whereas using two factors accounted for 40%. Also, we expected that interest in either subscale will depend on one's discipline, and so either subscale can be used alone to expedite data collection. A better approach, however, would be to measure both subscales so that divergent validity could also be assessed. For example, researchers could not only test the hypothesis that behavioral tendencies of people who are sexually compulsive are likely to engage in sexual coaxing, but can rule out sexual coercion as another plausible behavioral tendency.

Third, temporal sensitivity is an important property that other self-report scales on sexual coercion have lacked. The dynamic nature of the TOSS is, therefore, important because other scales composed entirely of static items are not conducive to experimental tests of sexual coercion and coaxing. Initial validation of TOSS's temporal sensitivity was demonstrated from finding that TOSS and COAX scores were lower among older participants and that COAX scores depended on relationship types after controlling for age. It is likely that COERCE did not vary across age because interest in coercive sex with one's partner may be better predicted from circumstances that elicit such a response or from individual difference characteristics related to antisociality. The latter possibility was supported by finding a stronger relationship between COERCE and psychopathy than between COAX and psychopathy.

Finally, initial construct validity was established by mating success having a stronger relation with COAX than with COERCE, and by psychopathy having a stronger relation with

COERCE than with COAX. To provide further validation for TOSS subscales, we included multiple measures of sexual interest and antisociality in Study 2.

An important step in the scale development process is to provide a precise and detailed description of the construct being assessed (Clark & Watson, 1995). Results from our first study suggested that the TOSS assessed a person's current propensity towards using verbal and physical tactics to obtain sex from a partner who is not sexually interested. More interestingly, there were two mutually exclusive factors represented in this scale. The COAX subscale measures a person's current propensity towards using coaxing tactics to seduce a partner into sexual activity. These tactics are common and are viewed more generally as acceptable courtship behaviors that are unlikely to lead to physical or psychological harm. On the other hand, the COERCE subscale measures a person's current propensity towards using coercive tactics that not only circumvents a partner's choice, but may lead to physical or psychological harm. A second study was conducted to ensure the TOSS and its subscales have robust psychometric properties by replicating the factor structure and providing a more rigorous test of the scale's construct and criterion validity.

If the underlying factor structure is correct, we should find the same factor loadings found in Study 1.1. Also, if COAX evaluates propensity for sexual coaxing, we expect it to correlate with sexual desire and behaviors indicative of sexual interest. Likewise, if the COERCE subscale evaluates a person's current propensity for sexual coercion, not only should it correlate with measures of antisociality, as was demonstrated in Study 1.2, it should also be related to an interest in sexual aggression and actual sexually aggressive behavior in the relationship.

2.5 Study 2: Factor Structure Replication, Reliability, and Validity

2.5.1 Method

Participants

Since the same factor structure was found between students and community participants in Study 1, data were collected from students alone in Study 2. Participants were recruited from the university campus using the psychology department participant pool and from advertisements on campus ($N = 137$). The number of males and females were approximately equal. For their participation, student from the subject pool were give course credit whereas students recruited from advertisements were given \$15. All participants were sexually active in a heterosexual relationship, with an average time of 1.61 years together ($SD = 2.03$). Ages ranged from 17 to 41 ($M = 20$; $SD = 3.87$), and the mode relationship type was a dating relationship, but there were a few participants who were either married ($n = 6$) or not married but living together ($n = 7$). All participants completed the TOSS and a subset also completed scales that tested for TOSS validity ($n = 76$).

Factor Structure Replication and Reliability

To refine the TOSS and test the COAX-COERCE factor structure in another sample, we forced a two-factor solution using a maximum likelihood oblique rotation (for more details, see Study 1.1). Reliability was evaluated by measuring internal consistency using Cronbach's alpha.

Construct Validity

COAX. To properly evaluate construct validity, we required the use of scales that evaluated an interest in either sexual coaxing or sexual coercion with one's romantic partner. Since these scales do not exist, we could only use more general measures of sexual interest and antisociality. To determine COAX construct validity, we selected the Sexual Desire Inventory

(SDI; Spector et al., 1996) that evaluates the degree to which a person in interested in sex. The SDI includes 14-items that evaluates general (e.g., "when you first see an attractive person, how strong is your sexual desire?"), relational (e.g., "how strong is your desire to engage in sexual activity with a partner?"), and personal (e.g., "how strong is your sexual desire to engage in sexual behavior by yourself?") sexual desire. The items are rated on an 8-point Likert-type scale (*no desire* to *strong desire*, or *not at all important* to *extremely important*) or an 8-point frequency scale (*not at all* to *more than once a day*). Higher total scores indicate higher sexual desire. The SDI was found to have good reliability (*r*s > .86).

   COERCE. To determine COERCE construct validity, we used general measures of antisociality and sexual aggression. Following Study 1.2, we used the SRP, but we also included a measure of interest in sexual aggression, the Revised Attraction to Sexual Aggression scale (ASA-R; Malamuth, 1998). The ASA-R includes nine questions about rape and forcing a female to do something sexual she did not want to (e.g., "Please indicate how often you have thought of trying it"). Each question has different response options (e.g., *never* to *often*; *very unattractive* to *very attractive*) that were summed to create a total score, where higher scores indicated greater attraction towards sexual aggression. An earlier version correlated with a composite score using the Rape Myth Acceptance Scale, the Acceptance of Interpersonal Violence measure, and the Adversarial Sexual Beliefs scale (*r* = .41, *p* < .001) (Malamuth, 1989). The ASA had excellent internal consistency (Cronbach's alpha = .91) and was validated by finding correlations with having previously forced sex, enjoying forced sex, intending to rape in the future (Malamuth, 1989), and hostility towards women (Calhoun, Bernat, Clum, & Frame, 1997).

Criterion Validity

COAX. To evaluate criterion validity of COAX, we used the Sexual Signaling Behaviors Inventory (SSBI; Jesser, 1978) because it identifies the degree to which a person has signaled sexual interest to his or her partner. Participants select up to twenty behaviors they used to persuade a partner into having sex (e.g., "ask directly"; "tease"). Higher scores indicated greater variability in the types of signals used in the past. We expected a stronger relationship between COAX and SSBI than between COERCE and SSBI.

COERCE. An important and practical component of the COERCE subscale is its ability to predict sexually coercive behaviors in relationships. An initial test of this property is the feasible method of postdicting sexually coercive behaviors from COERCE scores (DeVellis, 2003). To evaluate past instances of partner sexual coercion, we used the Sexual Coercion in Relationships Scale (SCIRS; Shackelford & Goetz, 2004) and the sexual coercion subscale (CTS-SC) of the revised Conflict Tactics Scale (Straus et al., 1996). The SCIRS asked about the frequency of 34 sexually coercive acts over the past month on a 6-point scale (*act did not occur in the past month* to *act occurred 11 or more times in the past month*). The CTS-SC asked about the frequency of seven sexually coercive acts over the past year on a 7-point scale (*0* to *more than 20 times*). Both the SCIRS and CTS had good internal reliability and validity (Shackelford & Goetz, 2004; Straus et al., 1996). We also calculated a CTS subscale that tallies nonsexual conflicts (CTS-NS). We expected COERCE would best predict SCIRS and CTS-SC, but not CTS-NS. Knowing that men account for the vast majority of partner sexual assaults (e.g., Hanneke & Shields, 1985; Russell, 1990), we expected stronger relationships between COERCE and actual behavior in men than in women.

Data Analysis

Because the effect of outliers is more pronounced in smaller samples, we excluded nine

participants who had discrepant Cook's D values (for details, see Cohen, Cohen, West, & Aiken,

2003). We also controlled for social desirability using the Impression Management Deception

Scale, which identifies participants who provide invalid self-reports by intentionally trying to

impress the test administrator (Paulhus, 1998). Ten participants were excluded from all analyses

for these reasons.

2.5.2 Results
Factor Structure Replication

The same factor structure emerged in our replication sample: coaxing items only loaded

onto the COAX factor, whereas most coercion items only loaded onto the COERCE factor. Four

items that loaded onto the COERCE factor in Study 1.1 now loaded onto COAX as well:

"persistently touch until partner agrees," "persistently say things," "convince by making up a

story," and "give reasons why." These items were initially conceived as being less severe as other

coercive tactics (e.g., hitting or slapping), which may be why participants in our follow-up sample

did not have consistent interpretations. Because these four items did not load onto their expected

factor, we revised the scale by removing them from both the TOSS total score and COERCE

subscale score. Before checking the reliability and validity of the revised version of the scale in

our new sample, we re-ran analyses in Study 1 using the original sample but with the revised

TOSS and COERCE subscale. All results remained when using the revised versions. In both

samples, the revised scale provided enhanced simple structure (Fig. 3). Because the revised scale

provided better discrimination between groups, all analyses in this second study were run using

the revised TOSS and COERCE subscale.

Reliability and Validity

Reliability. Internal consistency was replicated by finding high values for TOSS, COAX, and COERCE, Cronbach's α = .90, .93, and .87, respectively.

Construct Validity. Convergent and divergent forms of construct validity were clearly demonstrated in Table 3. Only the COAX subscale correlated with sexual desire, as measured by the SDI, and only the COERCE subscale correlated with measures of anstisociality, as measured by the SRP and ASA-R. The TOSS total score still correlated significantly with both the SDI and SRP, and approached significance with the ASA-R.

Criterion Validity. The TOSS and its subscales predicted overt behaviors (Table 4). First, there was a strong relationship between COAX and the number of sexual signaling behaviors used with one's partner, and between COERCE and SSBI. Because coercive sexual interest inherently requires general sexual interest, the correlation between SSBI and COERCE was not surprising. The converse, that general sexual interest inherently requires coercive sexual interest, was not true, and was confirmed by showing a consistent relationship between COERCE and instances of partner sexual coercion as measured by the SCIRS and CTS-SC, and finding no relationship between COAX and sexually coercive acts.

The relationship between COERCE and SCIRS was found only among men, not among women. Even though both men and women might self-report an interest in sexually coercing their partner, men are more likely to coerce their partners. These results are consistent with sex differences in the prevalence of partner sexual coercion (e.g., Hines & Saudino, 2003; Statistics Canada, 2004). Lastly, COERCE was only related to instances of sexual coercion, not other conflicts that may have occurred with one's partner (CTS-NS), furthering our confidence that COERCE indicates a propensity for sexual aggression, not aggression in general.

Discussion

In Study 2, we confirmed and extended the psychometric properties found in Study 1. Not only was the factor structure replicated, reliabilities in the second sample were excellent, and the scale's validity was confirmed. The COAX subscale was related to both sexual desire and sexual signalling behaviors, whereas the COERCE subscale had its strongest relationships with measures of psychopathy, attraction to sexual aggression, and was specifically related sexually coercive behaviors, but not other forms of sexual conflict in the relationship. Taken together, our findings suggest that using the TOSS is a reliable and valid way to assess current propensity for sexual coaxing and sexual coercion in relationships. An important caveat when using the TOSS, however, is that a higher interest in sexual coercion as measured by COERCE was related to actual sexual aggression only among men, not among women. Though this finding is consistent with sex differences in the frequency of this behavior and is proximately explained by sexual dimorphisms in size and physical strength, this discrepancy affects the interpretation of women's scores. We also found in Study 1.2 that women's propensity for sexual coaxing was unrelated to self-perceived mating success. These sex differences are not unique to our study—Greer and Buss (1994) found a significant relationship between effectiveness ratings of tactics that promote short-term sexual encounters and the frequency of such tactics only among men, not women. Consistent with our explanation, they suggested this discrepancy was due to the sex-specific costs associated with engaging in such behavior. For example, there may be reputational and emotional costs for women who engage in short-term mating. When the costs of behavior are low, such as what people do to appear attractive to the opposite sex, effectiveness-frequency correlations have reached over .70 for both men and women (Buss, 1988).

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2.6 General Discussion

The purpose for developing the TOSS was to provide clinicians and researchers with a tool for assessing interest in using tactics to obtain sex from a romantic partner. In two studies, we generated an item pool of these tactics, devised a scale that assessed current propensity to use them, and found that tactics were separated into two subscales that evaluated mutually exclusive constructs—coaxing and coercion. We established that the scale has excellent internal reliability, provided initial evidence that it was sensitive to temporal changes in sexual interest, established construct validity through convergence and divergence with other scales, and found that our self-report measure of propensity was related to overt behavior.

The design of this scale was somewhat unusual among attitude measures. Though attitude measures typically measure thoughts, feelings, and past behaviors, the TOSS was based on the first component because sexual feelings are better assessed using physiological tools (e.g., using plethysmography) and past behaviors confound the scale with static risk. By measuring thoughts alone, the TOSS captures the cognitive components of an interest in sexual coaxing and sexual coercion. The design of this scale, therefore, makes it amenable to psychological assessment and treatment programs, particularly programs that include cognitive therapy. Also, by virtue of assessing cognition, the TOSS can be used to test causal hypotheses linking thoughts about sexual coercion or coaxing and behavior. A limitation in our study, however, is that we used a between-subjects design to test the scale's sensitivity for proximal changes in propensity. Future research should use a within-subjects design to provide further validation of this feature.

We established that both men and women in dating, cohabiting, common-law, and marital relationships varied in terms of their interest in using both coaxing and coercive tactics to obtain sex. An extension of this research would understand the causes and consequences of this variability and to apply these findings to interventions. For example, we defined sexual coaxing

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as a strategy to obtain sex from a reluctant sexual partner by using benign, seductive tactics. Theoretically and clinically derived questions might be: (1) Do people who show an interest in sexual coaxing have healthy sexual relationships, unhealthy relationships, or are using a strategy to resolve sexual conflict by communicating their desires?, and (2) Are there circumstances or characteristics that moderate any of these relationships—for example, is it more practical to use this scale where conflict in relationships is known?

In terms of partner sexual coercion, we know that variability in the COERCE subscale was associated with antisocial characteristics, an attraction to sexual aggression, and to past instances of partner sexual coercion. Researchers may want to understand what circumstances might elicit such an orientation, and to see if these preferences may also reflect individual differences in sexual coercion propensity. Not only will such research allow us to identify individual difference characteristics of people who are likely to commit such offenses, it also extends the growing literature on dynamic risk assessment. By conducting experimental work with the TOSS, we may identify novel and important dynamic risk predictors of sexual coercion in relationships. This development is particularly important since understanding the causes of partner sexual coercion is gaining more attention (Goetz & Shackelford, 2006; Lalumière et al., 2005).

The relationship between coaxing and coercion can also be explored. We defined sexual coaxing as a strategy to obtain sex from a reluctant sexual partner by using benign, seductive tactics, whereas sexual coercion is a strategy to obtain sex from a reluctant sexual partner by using forceful and manipulative tactics that may result in physical and emotional trauma. We need to learn if, for example, the use of coaxing as opposed to coercion is related to the frequency or persistence of partner reluctance.

Overall, the TOSS shows promise in contributing to the unraveling of the complexity of sexual conflict in relationships by not only allowing researchers the ability contrast sexual coaxing and coercion, but also to experimentally manipulate and evaluate dynamic changes in these preferences. We hope its use will facilitate and extend discussion on the etiology, assessment, and treatment of this important social problem.

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Table 2-1. Factor loadings for 2- and 3-factor solutions using maximum likelihood oblique rotation.

Item	2 Factors		3 Factors		
	COAX	COERCE	COAX	COERCE-LS	COERCE-S
Softly kiss ears, neck, or face	.82	--	-.81	--	--
Whisper in partner's ear	.80	--	-.80	--	--
Rub legs with partner	.77	--	-.75	--	--
Say sweet things	.74	--	-.73	--	--
Caress partner's chest/breasts	.70	--	-.67	--	--
Lie down near partner	.68	--	-.67	--	--
Play with hair	.68	--	-.70	--	--
Massage neck or back	.67	--	-.70	--	--
Massage feet/thighs	.66	--	-.66	--	--
Caress near/on genitals	.63	--	-.59	--	--
Tickle	.58	--	-.57	--	--
Use humor	.55	--	-.55	--	--
Persistently touch until partner agrees	--	.71	--	.84	--

Persistently say things	--	.69	--	.83	--
Take advantage if partner is already drunk/stoned	--	.64	--	.56	--
Block partner's retreat	--	.62	--	.53	--
Physically restrain	--	.60	--	.33	.40
Tie partner up	--	.57	--	.57	--
Threaten self-harm	--	.56	--	.31	.39
Attempt to blackmail	--	.56	--	--	.53
Suggest breaking partner's property	--	.55	--	--	.82
Explain needs should be met	--	.54	--	.71	--
Wait until partner is sleeping	--	.53	--	.49	--
Threaten to leave	--	.53	--	.48	--
Make feel bad about not having sex	--	.51	--	.54	--
Call partner names	--	.50	--	--	.38
Convince by making up story	--	.48	--	.39	--

Slap or hit	--	.48	--	--	.72
Give reasons why	--	.48	--	.64	--
Question partner's sexual orientation	--	.45	--	.35	--
Provide partner with alcohol	--	.45	--	.32	--
Provide partner with drugs	--	.41	--	.31	--
Break partner's property	--	.40	--	--	.78
Suggest harm	--	.40	--	--	--
Offer to buy something	--	.40	--	.39	--
Take partner's clothes off	.43	.41	-.38	.50	--

Table 2-2. TOSS, COAX, and COERCE Construct Validity (Pearson correlation coefficients).

Scale	TOSS $r(n)$	COAX $r(n)$	COERCE $r(n)$
Men			
Age	-.17* (190)	-.29*** (190)	.03 (189)
SPMS	.19** (191)	.26*** (191)	.03 (190)
SRP	.27*** (193)	.23** (193)	.21** (192)
Women			
Age	-.23*** (214)	-.21** (214)	-.15* (212)
SPMS	.09 (216)	.11 (216)	.04 (214)
SRP	.30*** (217)	.14* (217)	.37*** (215)

Note. SPMS = Self Perceived Mating Success Scale; SRP = Self-Report Psychopathy Scale III.

[a] Alpha approaching significance, p = .06

*p < .05. **p < .01. ***p < .001.

Table 2-3. TOSS, COAX, and COERCE Construct Validity (Pearson correlation coefficients).

Scale	n	TOSS	COAX	COERCE
SDI	76	.28*	.25*	.20
SRP	76	.30**	.17	.41***
ASA-R	76	.22[a]	.09	.36***

Note. SDI = Sexual Desire Inventory; SRP = Self-Report Psychopathy Scale III; ASA-R = Revised Attraction to Sexual Aggression Scale.

[a] Alpha approaching significance, $p = 0.06$

*p < .05. **p < .01. ***p < .001.

Table 2-4. TOSS, COAX, and COERCE Criterion Validity (Pearson correlation coefficients).

Scale	*n*	TOSS	COAX	COERCE
SSBI	76	.43***	.38***	.30**
SCIRS	76	.30**	.10	.27*
Men	38	.32 [a]	.16	.44**
Women	38	.04	.08	-.03
CTS-SC	76	.23*	.16	.25*
Men	38	.33*	.26	.29
Women	38	.13	.06	.20
CTS-NS	76	.02	.05	-.05
Men	38	.12	.13	.01
Women	38	-.08	-.04	-.12

Note. SSBI = Sexual Signaling Behaviors Inventory; SCIRS = Sexual Coercion in Intimate Relationships Scale; CTS-SC = Conflict Tactics Scale, Sexual Coercion Subscale; CTS-NS = Conflict Tactics Scale, Nonsexual Conflicts Subscale.

[a] Alpha approaching significance, $p = 0.06$

*p < .05. **p < .01. ***p < .001.

Figure Captions

Figure 2-1. Factor loading confidence intervals of COAX items on Factor 1 (COAX) and Factor 2 (COERCE) across each subgroup. Reference lines are provided at 0.40 (should be close to 0).

Figure 2-2. Factor loading confidence intervals of COERCE items on Factor 1 (COAX) and Factor 2 (COERCE) across each subgroup.

Figure 2-3. Factor loading confidence intervals of the original and revised COERCE items on Factor 1 (COAX) and Factor 2 (COERCE).

Figure 2-4 . Adjusted mean COAX scores (+SE) for dating, cohabiting, and common-law/marital relationships across three age levels.

Factor Loading 95% Confidence Intervals

Factor 1 (COAX)
Factor 2 (COERCE)

Men Women Students Community Effectiveness Likelihood Total Sample 1 Total Sample 2
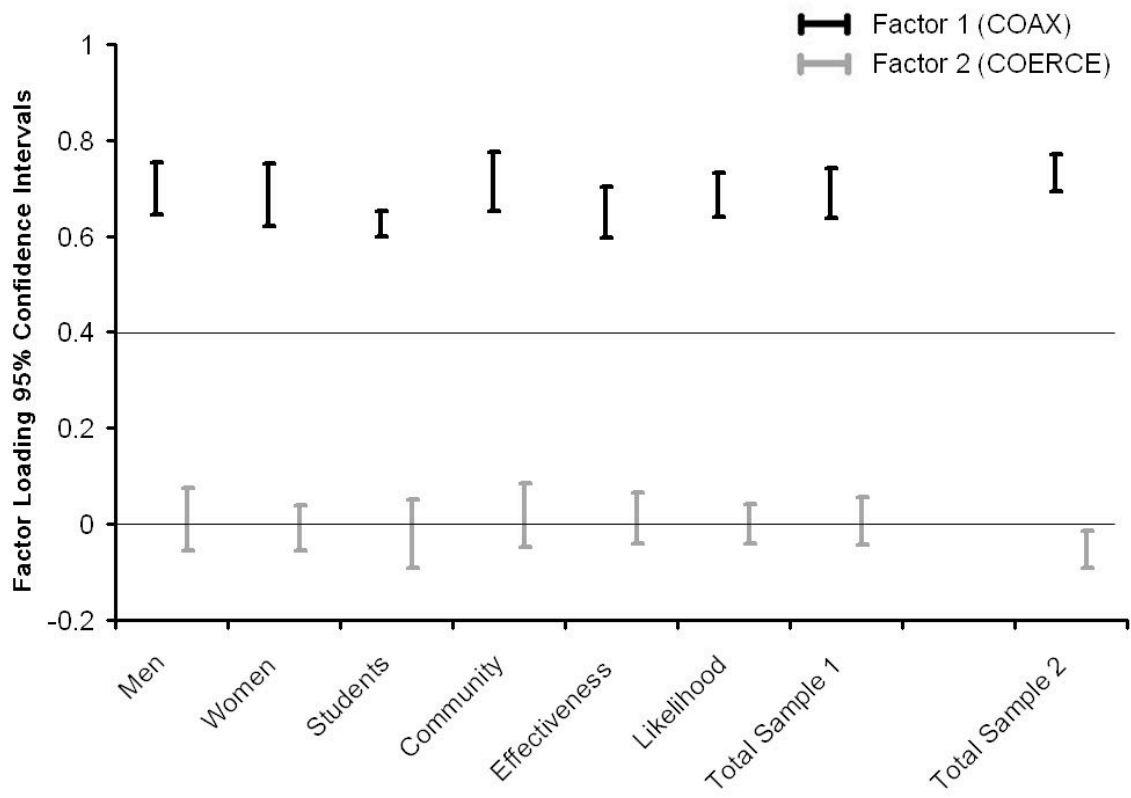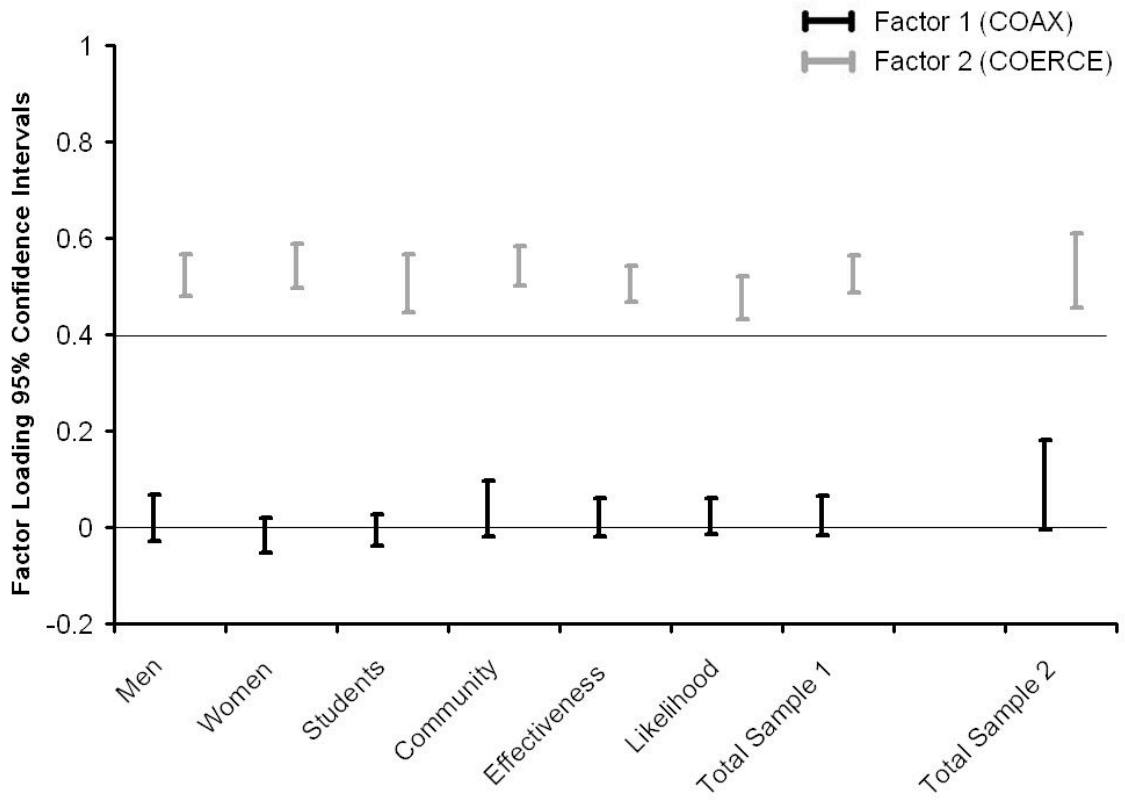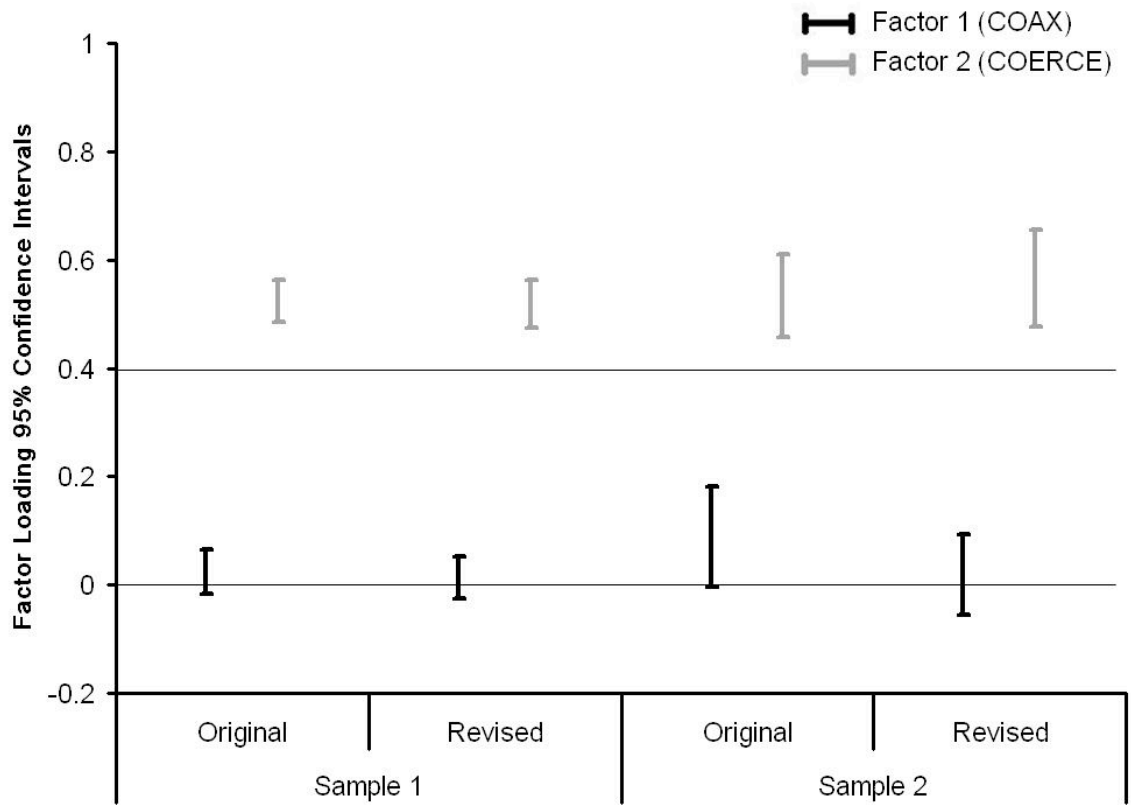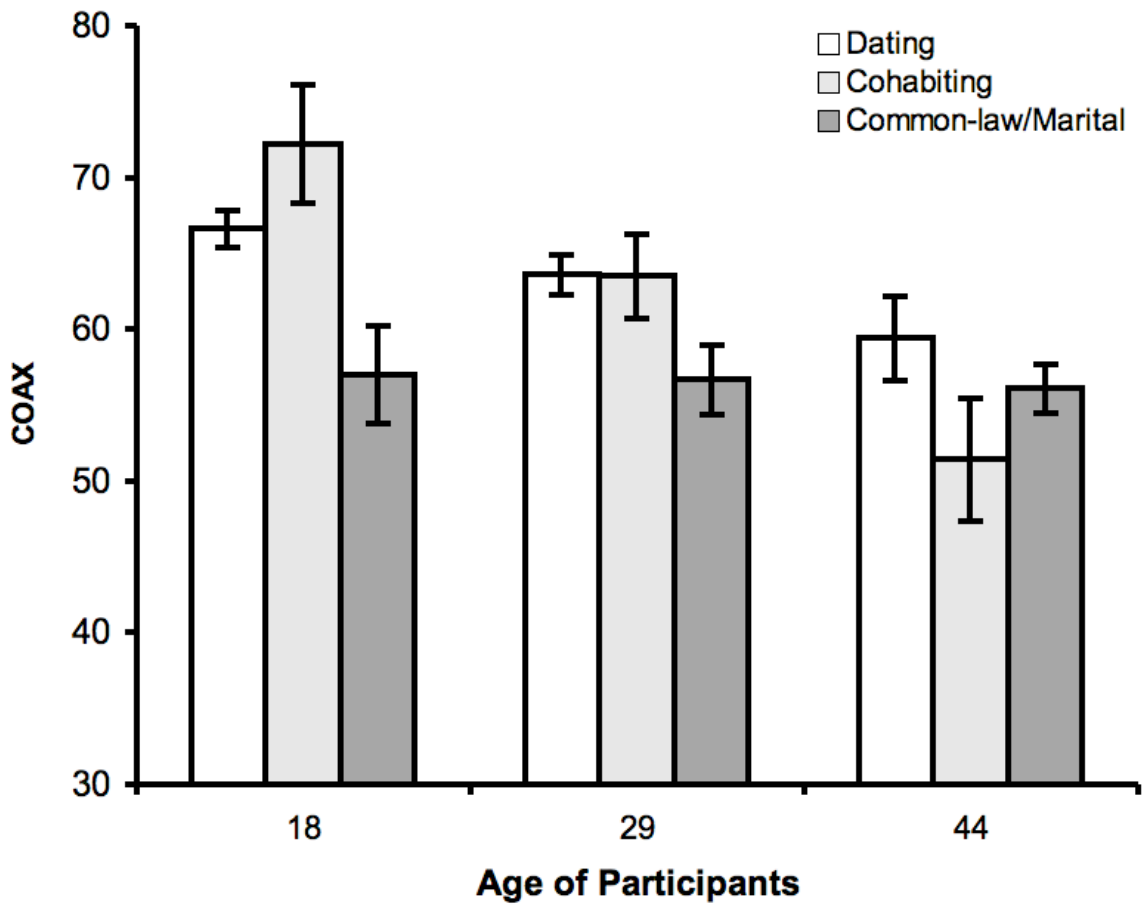
2.8 Appendix A

Suppose you were with your partner this evening, and he/she did not want to have sex with you:
Please rate **how effective** the following acts would be to persuade your partner into having sex.
Remember, you may skip questions you are uncomfortable in answering.[10]

	Effectiveness of Acts				
	Definitely Not	**Unlikely**	**Maybe**	**Probably**	**Definitely**
Massage his/her neck or back……………..	0	1	2	3	4
Threaten to leave………………………	0	1	2	3	4
Try to make him/her feel bad about not having sex……………………………..	0	1	2	3	4
Play with his/her hair…………………	0	1	2	3	4
Suggest you may harm him/her……….	0	1	2	3	4
Offer to buy him/her something………	0	1	2	3	4
Lie down near him/her…………........	0	1	2	3	4
Tie partner up………………………….	0	1	2	3	4
Block partner's retreat………………..	0	1	2	3	4
Tickle………………………………….	0	1	2	3	4
Provide him/her with drugs………........	0	1	2	3	4
Call him/her names……………………	0	1	2	3	4
Threaten self-harm……………………	0	1	2	3	4
Massage feet/thighs…………………...	0	1	2	3	4
Use humor……………………………	0	1	2	3	4
Say you might break partner's property	0	1	2	3	4
Wait until he/she is sleeping………....	0	1	2	3	4
Attempt to blackmail…………………..	0	1	2	3	4
Caress near/on partner's genitals……	0	1	2	3	4
Rub leg with his/her legs………………….	0	1	2	3	4
Whisper in his/her ear……………………..	0	1	2	3	4

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[10] Four items that did not consistently load onto one factor were removed from the scale: take partner's clothes off, persistently touch, persistently say things, convince by making up a story, give reasons why.

Softly kiss his/her ears, neck, or face……..	0	1	2	3	4
Question partner's sexual orientation…	0	1	2	3	4
Break partner's property………………	0	1	2	3	4
Say sweet things………………………	0	1	2	3	4
Provide him/her with alcohol…………	0	1	2	3	4
Explain that your needs should be met..	0	1	2	3	4
Take advantage of him/her if she's already drunk or stoned………………..	0	1	2	3	4
Slap or hit……………………………..	0	1	2	3	4
Caress his/her chest/breasts…………..	0	1	2	3	4
Physically restrain……………………..	0	1	2	3	4

Suppose you were with your partner this evening, and he/she did not want to have sex with you:
Please rate **how likely** you would engage in the following acts to persuade your partner into having sex. Remember, you may skip questions you are uncomfortable in answering.

	Likelihood You Would Use Acts				
	Definitely Not	**Unlikely**	**Maybe**	**Probably**	**Definitely**
Massage his/her neck or back……………..	0	1	2	3	4
Threaten to leave…………………………	0	1	2	3	4
Try to make him/her feel bad about not having sex……………………………..	0	1	2	3	4
Play with his/her hair…………………	0	1	2	3	4
Suggest you may harm him/her……….	0	1	2	3	4
Offer to buy him/her something………	0	1	2	3	4
Lie down near him/her…………........	0	1	2	3	4
Tie partner up………………………….	0	1	2	3	4
Block partner's retreat………………..	0	1	2	3	4
Tickle………………………………….	0	1	2	3	4
Provide him/her with drugs………........	0	1	2	3	4
Call him/her names…………………….	0	1	2	3	4
Threaten self-harm…………………….	0	1	2	3	4
Massage feet/thighs…………………...	0	1	2	3	4
Use humor…………………………….	0	1	2	3	4
Say you might break partner's property	0	1	2	3	4
Wait until he/she is sleeping………....	0	1	2	3	4
Attempt to blackmail…………………..	0	1	2	3	4
Caress near/on partner's genitals……	0	1	2	3	4
Rub leg with his/her legs………………….	0	1	2	3	4
Whisper in his/her ear……………………..	0	1	2	3	4
Softly kiss his/her ears, neck, or face……..	0	1	2	3	4
Question partner's sexual orientation…	0	1	2	3	4
Break partner's property………………	0	1	2	3	4
Say sweet things………………………	0	1	2	3	4

Provide him/her with alcohol…………	0	1	2	3	4
Explain that your needs should be met..	0	1	2	3	4
Take advantage of him/her if she's already drunk or stoned………………..	0	1	2	3	4
Slap or hit…………………………....	0	1	2	3	4
Caress his/her chest/breasts…………...	0	1	2	3	4
Physically restrain……………………..	0	1	2	3	4

Chapter 3
Individual Differences in the Propensity for Partner Sexual Coercion

Camilleri, J. A. & Quinsey, V. L. (in press). *Sexual Abuse: A Journal of Research and Treatment.*

3.1 Abstract

Lalumière, Harris, Rice, and Quinsey (2005) proposed a three-path model (psychopathy, young male syndrome, and competitive disadvantage) for the development of sexually coercive behaviour, but none of these individual difference characteristics have been tested among partner rapists. Using a community sample in Study 1, we found psychopathy was the only significant predictor of self-reported propensity for partner sexual coercion. This model was tested in Study 2 by comparing convicted partner rapists to other sexual offender groups and nonsexual partner assaulters. One-third of partner rapists were psychopaths, and their scores were no different from psychopathy scores found in other correctional settings. Partner rapists had an average IQ, providing further evidence that competitive disadvantage is not a characteristic of partner rapists. We discuss these findings in light of recent findings that implicate cuckoldry risk in partner sexual assault.

3.2 Introduction

Broadly defined, partner sexual coercion is the use of forceful or manipulative tactics to obtain sex from a nonconsenting partner (Camilleri, Quinsey, & Tapscott, in press). Although the psychological literature addressing sexual coercion in romantic relationships is small, a number of reports have provided prevalence rates to suggest a significant number of women have been

sexually victimized by their partner. Depending on the definition of sexual coercion[11], prevalence

rates of partner sexual coercion experienced by married women vary from 7% to 34% (Basile,

2002; Bowker, 1983; Costa, Braun, & Birbaumer, 2003; Finkelhor, Hotaling, & Yllo, 1988;

Hanneke & Shields, 1985; Russell, 1990). The most common form of partner rape is penile-

vaginal (Peacock, 1998), with its attendant risk of unwanted pregnancy (Gottschall & Gottschall,

2003; Krueger, 1988). From a sample of 40 women raped by their husbands, 88% were raped

vaginally, whereas anal and oral rapes were less common (40% and 17%, respectively). Physical

aggression also poses a serious risk to victims of all forms of sexual coercion (DeMaris, 1997;

Kilpatrick, Best, Saunders, & Veronen, 1988; Monson & Langhinrichsen-Rohling, 1998;

Resnick, Kilpatrick, Walsh, & Veronen, 1991). These issues, coupled with the prevalence rate of

partner sexual coercion, suggest that it poses a public health concern for some women.

Basile (2002) found that a large number of people do not believe partner sexual coercion

occurs. This lack of awareness of the partner sexual coercion problem is also reflected in the

paucity of empirical research. Compared to the approximately 2,949 psychological papers

published on sexual coercion, only 59 focused exclusively on sexual coercion in the context of

intimate relationships[12]. Of these articles, most focused on reviewing the literature ($n = 20$),

identifying attitudes and attributions of sexual coercion perpetrators or victims ($n = 14$), finding

correlates/consequences of victimization ($n = 9$), reviewing the legal aspects of partner sexual

coercion ($n = 6$), or reporting prevalence/exploratory research on partner sexual coercion ($n = 6$).

Very few studies focused on assessment and treatment ($n = 2$) or used experimental designs to

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[11] Definitions vary in terms of including only hands-on offenses, whether the assault was violent, type of relationships included, etc.
[12] A PsycINFO title search for (1) rape, sex* coerc*, or sex* assault; and (2) wife, partner, or marital was conducted in May 2007.

understand causes ($n = 2$). Only very recently have a few studies considered the psychological causes: two have implicated cuckoldry risk as a unique determinant of partner rape (Camilleri & Quinsey, 2008[a]; Goetz & Shackelford, 2006). In two recent reviews, Martin, Taft, and Resick (2007) confirmed our observation that no studies have addressed psychological characteristics of men who rape their partner, and Goetz, Shackelford, and Camilleri (2008) described how ultimate and proximate explanations of partner rape could be examined. From this literature search, it is clear that the study of partner sexual coercion has primarily focused on description. Attempts to understand the etiology of partner sexual coercion has been few, and those who have studied etiology have not considered the large literature on individual differences among sex offenders. Although cuckoldry risk may be an important determinant of partner sexual coercion, it does not exclude the possible influence of, or interaction with, antisocial characteristics.

Lalumière et al. (2005) provided a comprehensive discussion of the etiology of sexually coercive behaviour. The advantage of their synthesis is the incorporation of forensic psychological literature on individual differences in sexually coercive behaviour. Lalumière et al. described three major routes to sexual offending: (1) young male syndrome (young men are more willing to engage in risky and violent competitive behavior); (2) competitive disadvantage (those who in their development experienced either social adversity or neurodevelopmental insults); and (3) psychopathy. Late adolescent and young adult men are more commonly involved in crime than other individuals; these findings have been so robust across locations and times that they are referred to as the fundamental data of criminology (e.g., Hirschi & Gottfredson, 1983; Moffit, 1993). Sex offending is also more common among late adolescent or young adult males. The Darwinian explanation for young male syndrome is that fitness benefits were conferred to males who engaged in risky behavior (including sexual coercion) during the time of life that involves the highest competition for mates (Wilson & Daly, 1985).

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Adolescent-limited offending or the young male syndrome does not account for all sexual offending, however. There are two other mutually exclusive groups of offenders whose behaviour persists throughout the lifespan (Harris, Rice, & Lalumière, 2001). First are men who are competitively disadvantaged. Certain neurodevelopmental incidents may result in deviant sexual preferences, such as an interest children (Camilleri & Quinsey, 2008[b]; Quinsey & Lalumière, 1995), though differences (if any) between competitively disadvantaged men and offenders with pathological sexual deviance have yet to be studied. It is also possible that some behavioural outcomes of competitive disadvantage are not pathological—short term mating and risk taking may be a facultative response to low embodied capital Lalumière et al. (2005). Psychopaths comprise the other small proportion of men whose antisocial behavior is life-persistent. Unlike YMS and competitive disadvantage, there are no known environmental causes of psychopathy— recent findings suggest psychopathy is an obligate life history strategy that involves antisocial characteristics to manipulate and exploit others for their personal gain. For example, in addition to behavior genetics research that found a genetic influence on psychopathy (Waldman & Rhee, 2006), Harris and colleagues found evidence for psychopathy as a taxon (Harris, Rice, & Quinsey, 1994; Skilling, Harris, Rice, & Quinsey, 2002; but see Edens, Marcus, Lilienfeld, & Poythress, 2006), and confirmed that psychopaths are characterized by coercive and precocious sexual behaviour (Harris, Rice, Hilton, Lalumière, & Quinsey, 2007).

Sexually assaulting a romantic partner may be explained by each of these general routes to sexual offending. If pair-bonded males are still competing due to risks of mate poaching from age-related rivals, then young male syndrome may account for both domestic and sexual violence as a means of cuckoldry avoidance (following Wilson & Daly, 1985). Partner sexual coercion can therefore be subsumed under the young male syndrome in one of two ways: (1) as an adaptive form of cuckoldry control to compete against rivals when competition is high; or (2) as a

byproduct of risky sexual behaviour among young males. Our study is not designed to test these alternative hypotheses because we do not even know if youthfulness is related to such acts. There is some evidence to suggest another relationship: sexual coercion occurs more frequently among older males because there is some evidence that the probability of cheating by female partners increases with age until menopausal years (e.g., Atkins, Baucom, & Jacobson, 2001). Partner rapists may also be older than general rapists because men in committed relationships are older. Before we can start to test these specific hypotheses, we first need to know if age is related to sexual offending in relationships. Therefore in Study 1 we tested the relationship between age and self-reported propensity for partner sexual coercion. In Study 2 we compared the age of men who raped their partner to other rapists and child molesters. Partner rapists should be just as young as non-partner rapists.

It is plausible that men who sexually coerce their romantic partner are individuals who despite being competitively disadvantaged, managed to acquire a mate. Their competition is no longer for partner acquisition; it switches to partner retention due to a greater risk that they may be abandoned for a higher quality male. Researchers consistently find that women prefer characteristics of masculine, dominant, and attractive men during the follicular phase of their cycle (Frost, 1994; Gangestad & Thornhill, 1998; Havlicek, Roberts, & Flegr, 2005; Johnston, Hagel, Franklin, Fink, & Grammer, 2001; Penton-Voak & Perrett, 2000; Penton-Voak et al., 1999; Puts, 2005; Thornhill & Gangestad, 1999; Thornhill et al., 2003), in addition to finding that women also show greater attraction for extra-pair males during ovulation (Gangestad, Thornhill, & Garver, 2002). For these reasons, men with lower status or phenotypic quality may be at a greater risk of losing a partner to rivals, and so a strategy that involves frequent and possibly coercive sex may have been adaptive to reduce such risks. We tested this hypothesis by using

assays of competitive disadvantage: a self-report measure of neurodevelopmental insults in Study

1, and by considering the IQ of partner rapists and other sexual offenders in Study 2.

Psychopathy has been implicated in nearly all types violent and sexual offending (for

reviews see Knight & Guay, 2006; Porter & Woodworth, 2006), with some evidence for partner

assaulters (Grann & Wedin, 2001; Hilton, Harris, & Rice, 2001). It is therefore plausible that

partner sexual assaulters are psychopathic men in relationships. Sexual refusal is a common

aspect of human in-pair sexual behavior (Camilleri & Quinsey, 2008[a]), and psychopaths may be

prone to overcome a partner's persistent sexual refusal with coercive and violent tactics. In Study

1 we examined the relationship between scores on a self-report measure of psychopathy and

sexual coercion propensity, and in Study 2 partner rapists were compared to other sexual

offenders on measures of psychopathy. Lastly, if partner sexual coercion is not accounted for by

any of the three paths or antisociality in general, we should expect these men to have little or no

criminal history and should be at low risk of committing another violent offense.

The objective of our two studies was to identify whether individual differences among

antisocial men also characterize men who are interested in or used sexual coercion against their

romantic partner. In Study 1 we collected data from a community sample to test whether

measures of psychopathy, competitive disadvantage, and age were related to self-reported interest

in partner sexual coercion. Partner sexual assaulters fall into two offender categories: *sexual*

offenders because the offense was sexual, and *partner assaulters* because the victim of the assault

was a romantic partner. Therefore in Study 2, we first compared men convicted of raping their

romantic partner with other sexual offenders--nonpartner sexual offenders and heterosexual child

molesters--on assays of the three-path model, measures of criminal history, and risk of

recidivism. We then compared partner rapists to nonsexual partner assaulters on these measures

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to see if the psychological characteristics of sexual and violent offenders in relationships are different.

3.3 Study 1: Self-Reported Propensity for Sexual Coercion

3.3.1 Method

Participants & Procedure

From a total sample of 229 men who completed the questionnaires, 197 were included in our analyses because they met our eligibility criteria of being sexually active in a heterosexual relationship. Participants were recruited from both the Psychology Department participant pool (n = 101) and from the local community (n = 96) for variability in age (min = 17 years, max = 78 years, M = 30.2, SD = 15.9), relationship type (dating/not living together, n = 118; marital/living together, n = 79), and relationship length (min < 1 year, max = 47 years, M = 6.2, SD = 10.5). Sample sizes for each analysis varied slightly due to missing data.

Measures

Psychopathy. To evaluate psychopathy we used the Self-Report Psychopathy III scale (SRP-III; Paulhus, Hemphill, & Hare, in press). This measure evaluates psychopathy in nonforensic samples. An earlier version (SRP-II) was correlated with the clinical measures, such as the Psychopathy Checklist-Revised (PCL-R), r = .54 and the PCL-R Screening Version, r = .62 (Forth, Brown, Hart, & Hare, 1996; Hare, 1991, 2003), and the SRP-III had adequate internal reliability, Cronbach's alpha = .79 (Paulhus & Williams, 2002).

Competitive Disadvantage. In order to measure competitive disadvantage, an extension of Lalumière, Harris, and Rice's (2001) measure of neurodevelopmental insults was used. This measure included items about obstetrical and developmental problems. A higher number of total

problems indicate higher developmental instability. Previous research with forensic samples found higher scores on this measure were related to violent behavior (Harris et al., 2001).

Sexual Coercion. The Tactics to Obtain Sex Scale (TOSS; Camilleri et al., in press) was used because it contains a subscale that measures propensity for partner sexual coercion (COERCE). Participants rated 19 coercive acts used to obtain sex from a reluctant sexual partner (e.g., physically restrain, threaten) 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. Scores for each item were summed, then total scores for each subscale were calculated. Higher scores indicate a more favorable attitude towards partner sexual coercion. The COERCE subscale is related to actual sexual aggression in relationships, and has excellent internal reliability (Cronbach's alpha = .87) and construct validity.

Social Desirability. We used the Impression Management subscale of the Paulhus Deception Scale (PDS; Paulhus, 1998) in order to control for social desirability. This scale allows us to identify participants who may be 'faking good' (i.e., deliberately giving socially desirable responses) and participants who may be 'faking bad' (i.e., deliberately giving socially undesirable responses). Impression management was found to correlate with the EPI Lie scale and the MMPI Lie scale, and internal reliability of the Paulhus Deception Scale ranged from .83 to .86 across different samples (Paulhus, 1998).

Data Management & Analyses

Multiple regression was used to test the three-path model, and so we followed Cohen, Cohen, West, and Aiken's (2003) data cleaning procedures for regression analyses. Three outliers were identified from checking leverage, discrepancy, and influence, and were therefore excluded from our analyses. Analyses including these outliers yielded the same results. Assumptions of

normality and linearity of residuals were met. A violation of the homoscedasticity assumption was corrected by using a square root transformation on COERCE, and so all analyses use the transformation of COERCE. Analyses using uncorrected COERCE scores yielded the same results. We reran our analyses excluding participants who scored higher than 12 and lower than 1 on the PDS (see Paulhus, 1998) to ensure effects were not confounded by impression management.

3.3.2 Results

COERCE scores were regressed onto age, psychopathy, and neurodevelopmental instability. Although the overall model was significant, $F(3, 179) = 5.73$, $p = .001$, only psychopathy was significantly related to COERCE, $\beta = .27$, $p < .001$, in the expected direction—higher scores on psychopathy indicated higher interest in using coercive behaviors to obtain sex from a reluctant partner. Both age, $\beta = .03$, $p = .72$, and neurodevelopmental insults $\beta = .10$, $p = .15$, were unrelated to COERCE (see Appendix B for scatterplots).

It is possible that neurodevelopmental insults and age did not predict COERCE because of impression management, we therefore reran our analyses after excluding participants who are likely faking bad ($n = 8$) or faking good ($n = 7$) as indicated by scores on the Impression Management scale. Even after removing these participants, the overall test was still significant, $F(3, 164) = 3.95$, $p = .009$, where psychopathy was the only significant predictor, $\beta = .23$, $p = .003$, not age, $\beta = .03$, $p = .73$, or neurodevelopmental insults, $\beta = .12$, $p = .13$.

To rule out the possibility that competitive disadvantage and age do not correlate with self-report attitudes towards sexual coercion in general, we collected data from group of undergraduate men who were sexually active in a heterosexual relationship ($n = 81$) and measured them on their general attitudes towards rape using the Rape Myth Acceptance Scale

(RMAS; Burt, 1980). The Rape Myth Acceptance Scale is a validated scale with good internal consistency (Cronbach's alpha = .88). After regressing rape myth acceptance scores on the same measures of psychopathy, neuordevelopmental insults, and age, the overall model was significant, $F(3, 78) = 7.44, p < .001$, where psychopathy, $\beta = .24, p = .03$, and age, $\beta = -.27, p = .01$, predicted rape myth acceptance, and neurodevelopmental insults was not quite significant, $\beta = .19, p = .06$. The zero-order correlation between neurodevelopmental insults and rape myth acceptance, however, was significant, $r(81) = .22, p = .048$, and each of these results were in the expected direction. Participants who were more psychopathic, competitively disadvantaged, and younger, reported more supportive attitudes towards rape.

3.3.3 Discussion

Of the three major paths to sexual offending, the only variable to predict self-reported propensity for partner sexual coercion was psychopathy. In other words, men with psychopathic characteristics reported a greater interest in using multiple tactics to obtain sex from a reluctant sexual partner. Proneness to engage in partner sexual coercion appears to be enhanced in men with psychopathic characteristics. These characteristics include, but are not limited to, impulsivity, lack of remorse and guilt, shallow affect, callous, and manipulation. Though psychopathic men were successful in attaining a mating partner, pair-bonding may serve their parasitic lifestyle and are probably better characterized as short term mating, not parental investment. It would therefore be interesting to study the relationship characteristics of psychopathic men. In addition to high rates of sexually coercive behaviour, it is likely that psychopaths are chronically unfaithful and physically abusive to their partner. We expect future studies will find these relationships are brief and brimming with conflict.

Results from Study 1 suggest variability in partner sexual coercion propensity is explained by psychopathy, not by young male syndrome or competitive disadvantage. Though we used a scale designed to maximize construct validity (i.e., adheres to the principle of compatibility, correlates with actual sexual aggression in relationships, and controlled for impression management; Camilleri et al., in press; Eagly & Chaiken, 1998), investigating the characteristics of men who actually commit such offenses is required for external validity of these effects. Therefore in Study 2, we studied these constructs with a sample of men convicted of sexually assaulting a romantic partner.

3.4 Study 2: Convicted Partner Rapists

3.4.1 Method

Offender Sample

Archived files of 115 offenders who were either committed or assessed at a maximum security psychiatric facility were reviewed. Files of heterosexual child molesters ($n = 30$), adult female rapists ($n = 30$), and nonsexual partner assaulters ($n = 30$) were randomly selected from admission records, whereas all available partner rapist files were reviewed ($n = 25$) due to their low base rate of admission. Heterosexual child molesters were men whose index offense (i.e., offense that led to admission or assessment) was sexual against an unrelated prepubescent female, with no history of sexually offending against adult women. Adult female rapists were men whose index offense was sexual against an adult woman, with no history of sexual or violent offending against a partner. Nonsexual partner assaulters committed a violent index offense (i.e., physical assault or threatened with a weapon) against their dating, cohabiting, or marital partner, and had no history of sexually assaulting their partner. Partner rapists were men who committed a sexual index offense against their dating, cohabiting, or marital partner.

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Measures

Demographics & Antisociality. To measure the young male syndrome, offenders' ages at their index or admission offense were collected from either the crime synopsis or admission record, or were calculated using the date of birth and date of offense. Other information, including the perpetrator's score on the Violence Risk Appraisal Guide (VRAG; Quinsey, Harris, Rice, & Cormier, 2006) and criminal history were also recorded. The VRAG is a 12-item actuarial assessment designed to predict violent and sexual reoffending. This tool has been validated with numerous groups, including women, psychiatric patients, and intellectually disabled persons (Camilleri & Quinsey, 2008[c]; Harris, Rice, & Camilleri, 2004; Quinsey et al., 2006). Higher scores on the VRAG indicate a higher probability of committing a violent or sexual reoffense. In other words, higher VRAG scores indicate having more characteristics of men who recidivate. A total criminal history score was calculated using the Cormier-Lang Criminal History scoring system (Quinsey et al., 2006) where weights are provided for more serious crimes. Higher criminal history scores indicate a more extensive, versatile, and severe criminal background.

Psychopathy. Most participants were scored on the most widely used measure of psychopathy, the Revised Psychopathy Checklist (PCL-R). The psychometric properties of this scale have been rigorously evaluated, and so the reliability and validity of this scale are sound (Hare, 1991, 2003). When using archived information a score higher than 25 is typically used to identify a psychopath. Researchers found that an interest in coercive sex is a primary characteristic of men who rape adult women (Harris et al., 2007).

Competitive disadvantage. Though numerous measures of competitive disadvantage exist, such as fluctuating asymmetry and neurodevelopmental insults (Lalumière et al., 2005), we

used IQ scores because they were readily available. Lower IQ scores indicate greater competitive disadvantage. If IQ was assessed more than once, an average score was used.

3.4.2 Results

Partner Rapists vs. Sex Offenders

To test the three path-model, several one-way ANOVAs were conducted to compare partner rapists, rapists, and child molesters on each of the three paths. Main effects were found for: IQ, $F(2, 69) = 6.24$, $p = .003$; psychopathy, $F(2, 49) = 4.57$, $p = .015$; but not for age, $F(2, 60) = 1.20$, $p = .31$ (Figures 1 to 3). Follow-up comparisons (Fisher's LSD) found partner rapists ($n = 21$, $M = 100.3$, $SD = 13.8$) were similar to rapists ($n = 27$, $M = 101.8$, $SD = 13.1$) on IQ, $p = .73$, and that rapists, $p = .008$, and partner rapists, $p = .002$, had higher IQ scores than child molesters ($n = 24$, $M = 88.6$, $SD = 16.0$).

Differences in psychopathy between partner rapists ($n = 18$, $M = 20.32$, $SD = 8.83$) and rapists ($n = 24$, $M = 24.67$, $SD = 7.25$) on psychopathy scores approached significance, $p = .07$. Using one-sample t-tests, we found that partner rapists were also not different from prison norms ($M = 23.6$), $t(17) = -1.58$, $p = .13$, and forensic norms ($M = 20.6$), $t(17) = -0.14$, $p = .90$ (Hare, 2003). Child molesters ($n = 10$, $M = 16.5$, $SD = 5.1$) scored lower than rapists, $p = .006$, but were not different from partner rapists, $p = .20$ (see Figures 4 & 5). Using the traditional cutoff of 25 to identify psychopaths, we found no difference in the proportion of partner rapists (33%) and rapists (54%) who were psychopaths, Fisher's Exact Test, $p = 0.22$ (2-tailed). None of the child molesters were psychopaths.

To test for differences in criminal history we used two versions of the Cormier-Lang Criminal History Score. A one-way ANOVA found a significant main effect of offender type on criminal history scores, $F(2, 79) = 6.41$, $p = .003$, where both partner rapists ($n = 25$, $M = 28.9$,

$SD = 26.8$) and child molesters ($n = 29$, $M = 23.5$, $SD = 17.1$) had a less extensive criminal

history (as measured by the Cormier-Lang scores) than rapists ($n = 28$, $M = 52.57$, $SD = 46.02$),

ps $< .009$ (Fisher's LSD). There were no differences between partner rapists and child molesters,

$p = .55$. These results suggest that partner rapists committed fewer and less severe crimes than

rapists, despite having more opportunity because they were older.

Using a one-way ANOVA, there was a significant main effect of offender type on VRAG

scores, $F(2, 62) = 8.14$, $p = .001$. Follow-up comparisons found partner rapists ($n = 18$, $M = 6.4$,

$SD = 11.9$) and child molesters ($n = 27$, $M = 4.5$, $SD = 10.0$) had a lower risk of recidivating than

rapists ($n = 20$, $M = 16.4$, $SD = 9.4$) as indicated by their VRAG scores, ps $< .004$, and there were

no differences between partner rapists and child molesters, $p = .56$.

Partner Rapists vs. Partner Assaulters

We compared partner rapists to nonsexual partner assaulters on the same measures of

antisociality. Using a Bonferroni correction for multiple comparisons, there were no differences

between these groups on age, $t(41) = -.12$, $p = .90$; IQ, $t(47) = -1.52$, $p = .14$, or criminal history,

$t(53) = .54$, $p = .60$. However, partner rapist had higher psychopathy scores, $t(46) = 3.93$, $p <$

$.001$; and higher VRAG scores, $t(46) = 5.10$, $p < .001$.

3.4.3 Discussion

There were similarities and differences between partner rapists and other offender groups.

The forensic sample confirmed psychopathy as a characteristic of sexual aggression in

relationships: 33% of partner rapists were psychopaths, the average score of psychopathy among

partner rapists were not different from rapists, and there was no difference in the proportion of

partner rapists and rapists who were psychopaths. Characteristics of rapists that were different

among partner rapists included criminal history, and risk of recidivating. A characteristic of child

molesters that did not apply to partner rapists was lower IQ. Interestingly, partner rapists were more psychopathic and were at greater risk of recidivating than partner assaulters. We discuss the implications of these similarities and differences in our general discussion.

An important component of Study 2 was to ensure that our samples were similar to other crime samples. Finding that child molesters had lower IQ, criminal history, risk of recidivism, and psychopathy than rapists is consistent with what we know of these groups (e.g., Baxter, Marshall, Barbaree, Davidson, & Malcolm, 1984; Cantor, Blanchard, Robichaud, & Christenson, 2005; Rice & Harris, 1997), ensuring confidence in the validity of our comparison groups. Because the present study is the first to publish these characteristics of partner rapists, we can not be sure if they are representative of all partner rapists or at least partner rapists in forensic psychiatric settings. Subsequent research with larger samples is therefore required. Though constraints on collecting a representative sample of partner rapists also exist for our other offender groups, there is an obvious issue surrounding the low number of convicted partner rapists. Victimization data we reviewed earlier suggests there are many partner rapes that do not reach the criminal justice system. The causes of such low base rates may be due, in part, to official rap sheets misclassifying sexual offenses as physical violence (Rice, Harris, Lang, & Cormier, 2006), or to underreporting of partner sexual assaults. It is for this latter reason that our sample may be overrepresented with psychopaths or antisocial men if only the most dangerous and violent partner rapists are charged and convicted. But again, we are unsure whether non-partner sexual assault is under reported more than partner sexual assault. One solution to this problem is to sample the general population, as we did in Study 1, for converging evidence.

3.5 General Discussion

Men who rape their romantic partner can be placed in one of two offender groups: partner offenders because of their relationship to the victim, and sexual offenders because of the sexual act. In two studies we found that partner rapists share a few characteristics with these groups, the most notable being psychopathy. Despite the vast research on psychopathy (see Patrick, 2008, for a current review), the present pair of studies are the first to implicate psychopathy as a determinant of sexual offending in relationships. This finding is consistent with our understanding of psychopaths as being parasitic, having many short term marital relationships, and using sexually coercive behaviors. Psychopathic men appear to direct these parasitic and coercive behaviors towards in-pair mates ('romantic' or 'committed' relationships may be a poor characterization as applied to psychopaths). Still, two-thirds of partner rapists were not psychopaths, and psychopathy does not account for the less extensive criminal history. A candidate explanation for these latter findings is that among nonpsychopaths, intrasexual competition lessens when pair bonds are formed, and the primary source of competition is presented by female partner extra-pair copulations[13]. If true, any additional characteristics or predictors of partner sexual coercion should focus on circumstances and characteristics related to increased partner infidelity, not just measures of male competition.

In both our community and forensic samples, competitive disadvantage did not emerge as a predictor of partner sexual coercion, suggesting partner rape is a nonpathological behavior (for a discussion of the relationship between pathology, sexual deviance, and sexual offending, see Camilleri & Quinsey, 2008[b]). One reason for this finding is that competitive disadvantage accounts for men who are disadvantaged in ways that would make acquiring a mate more

difficult, and men in relationships do not have this problem. A problem with this explanation is that it assumes there are no competitively disadvantaged men in relationships, and we have yet to account for other measures of competitive disadvantage, such as social adversity or neurodevelopmental incidents among convicted men. The hypothesis that competitively disadvantaged men are more likely to sexually coerce a romantic partner because they are at greater risk of being cuckolded therefore requires a more extensive investigation.

In Study 2, partner rapists were also compared to partner assaulters. The finding that partner rapists were different from partner assaulters on static risk factors (i.e., psychopathy and VRAG scores) is very interesting in light of our recent finding that both partner rapists and nonsexual partner assaulters experienced a significant number of cuckoldry risk events prior to committing their offense (Camilleri & Quinsey, 2008[a]). This suggests men with psychopathic or antisocial characteristics may be more inclined to respond to cuckoldry risk with sexual aggression, whereas nonpsychopathic men use physical violence. This hypothesis would also be consistent with the sexually coercive and high mating-effort aspects of psychopaths (Harris et al., 2007; Lalumière et al., 2005).

Our set of studies provide a first glimpse of individual difference characteristics of men who are interested in or committed sexually coercive acts with their romantic partner. Unfortunately, low base rates of partner rape convictions limits the comparisons and analyses required to test more complex models of partner rape etiology (i.e., identify mutually exclusive paths and interactions). Though using nonforensic samples provides converging evidence, it is not a substitute because external validity can only be established from offender populations. Future

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[13] Supporting this hypothesis is the effect relationship formation has on behavior and physiology. Research has shown that men in relationships have lower testosterone (Burnham et al., 2003), and forming a relationship is a protective factor for violent recidivism (e.g., Laub, Nagin, & Sampson, 1998).

research that can access larger samples should test whether antisocial characteristics interact with cuckoldry risk or if they constitute independent routes to sexual offending in relationships.

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Table 3-1. Comparison of partner rapists and nonsexual partner assaulters on age, PCL-R, IQ, Cormier-Lang Criminal History (C-L), and VRAG scores.

	Partner Rapists		Nonsexual Partner Assaulters	
	n	*M* (*SD*)	*N*	*M* (*SD*)
Age	16	30.94 (10.63)	27	31.3 (8.6)
PCL-R***	18	20.3 (8.8)	30	11.3 (7.0)
IQ	21	100.3 (13.8)	28	105.9 (12.0)
C-L	25	28.9 (26.8)	30	25.1 (25.9)
VRAG***	18	6.4 (11.9)	30	-9.1 (9.1)

***$p < .001$.

FIGURE CAPTIONS

Figure 3-1. Mean IQ scores of partner rapists, rapists, and child molesters.

**Figure 3-2. Mean PCL-R scores of partner rapists, rapists, and child molesters.**
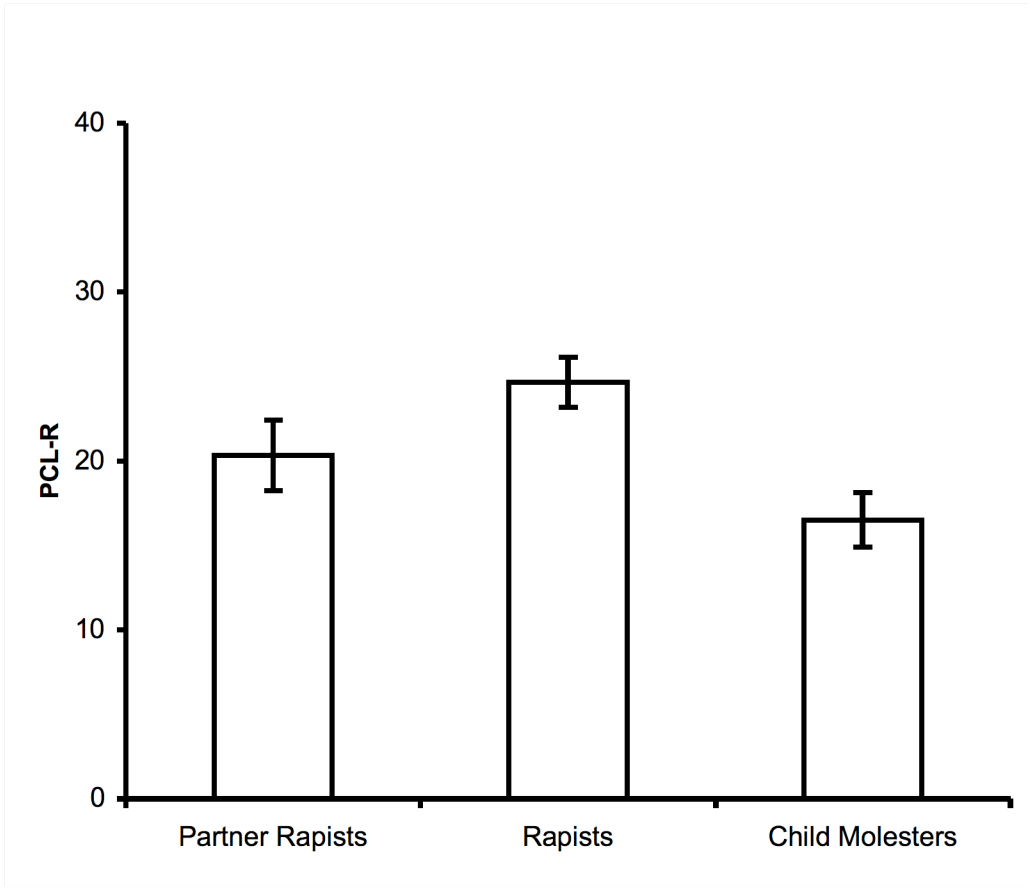
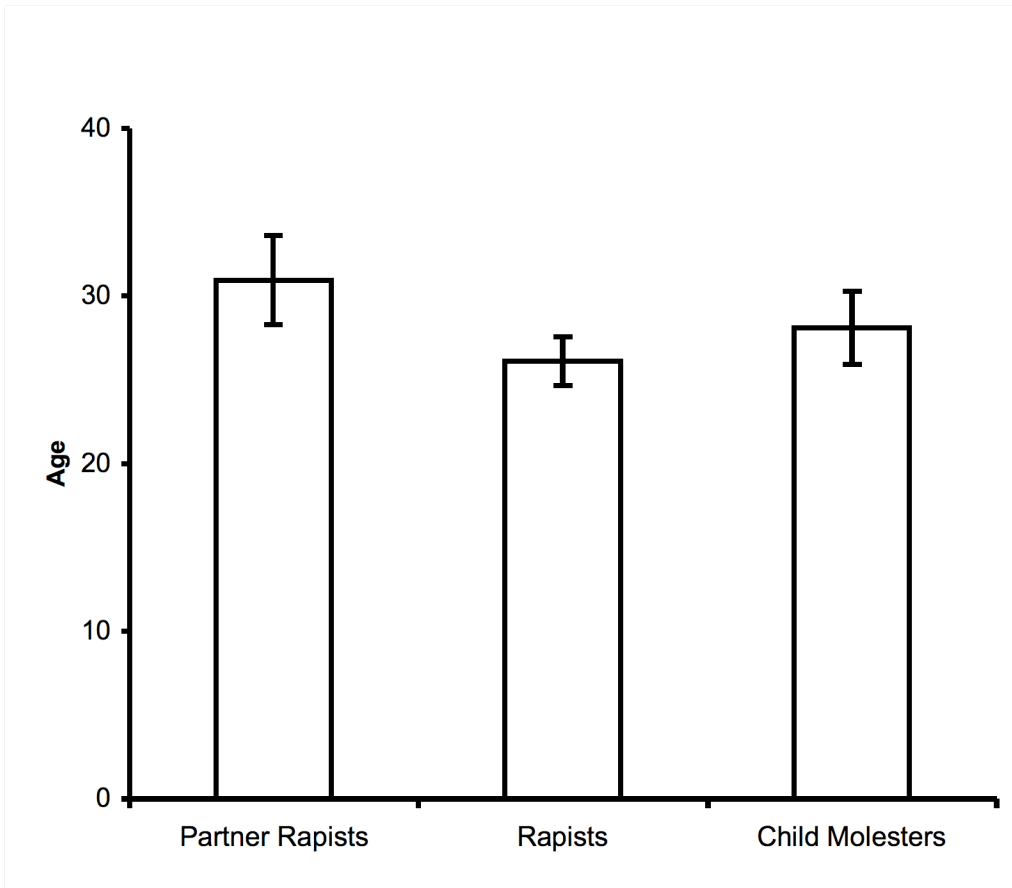**Figure 3-3. Mean age of partner rapists, rapists, and child molesters.**

Figure 3-4. Mean Cormier-Lang Criminal History scores of partner rapists, rapists, and child molesters.
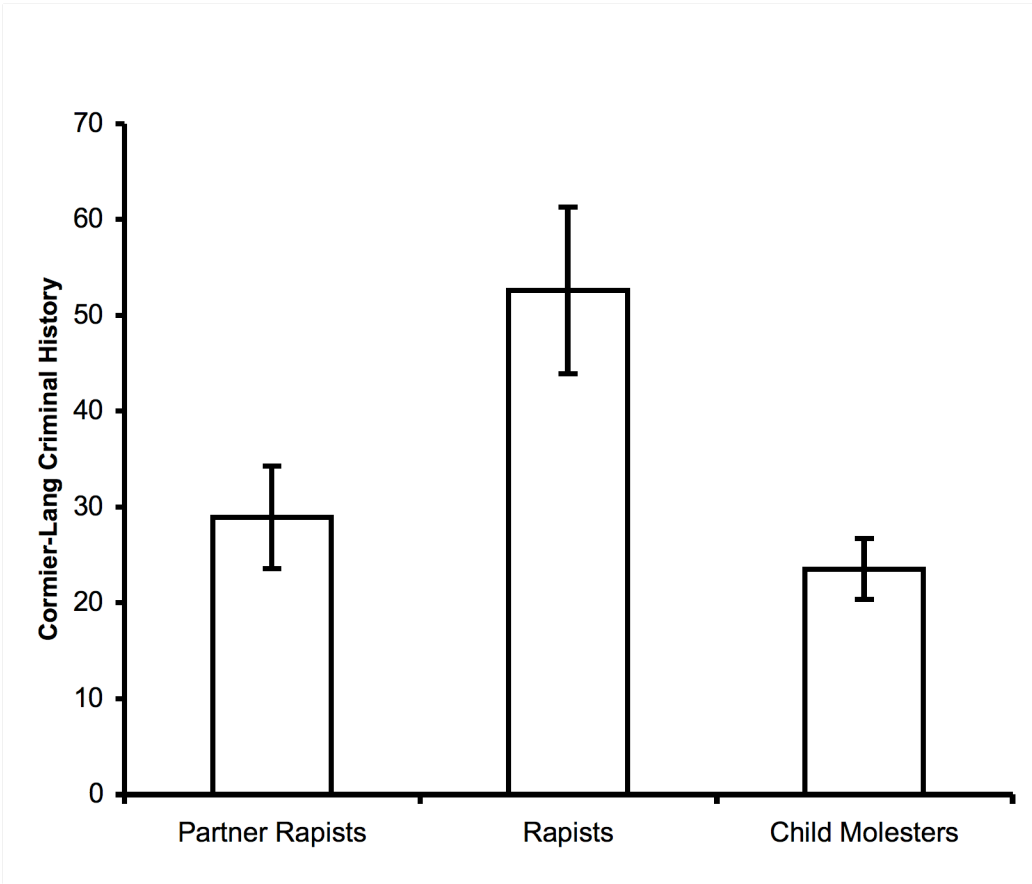
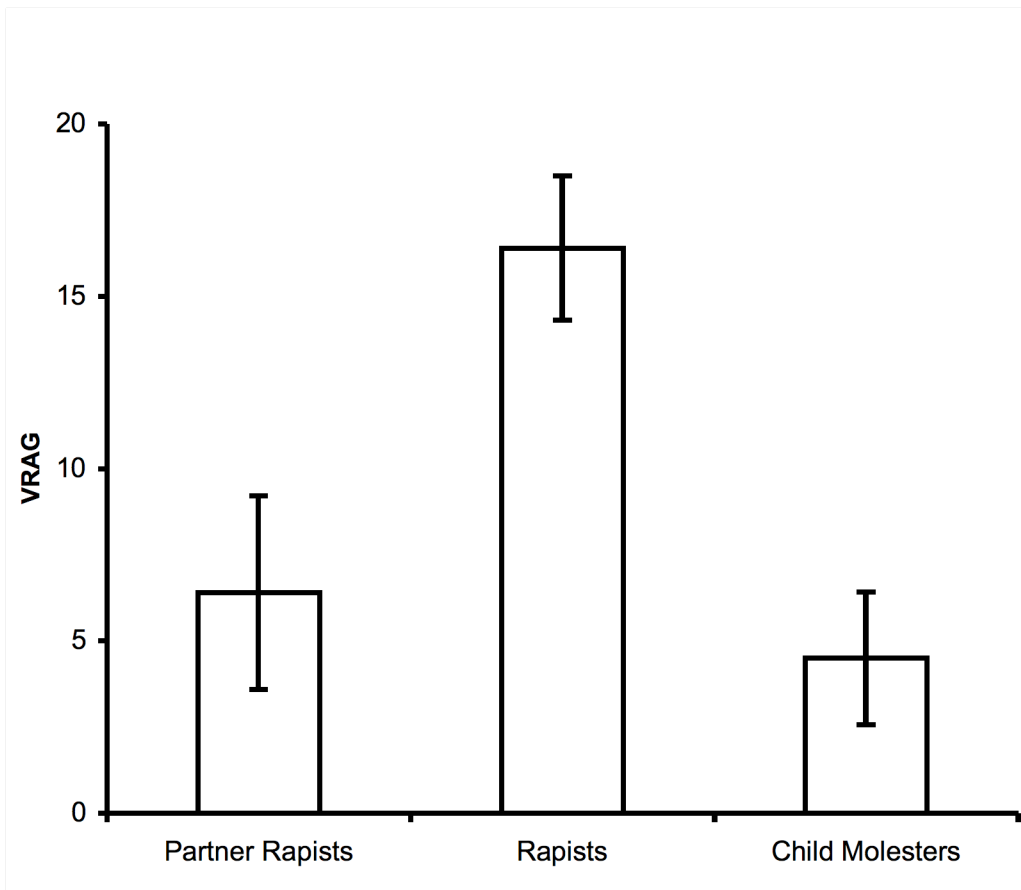**Figure 3-5. Mean Violence Risk Appraisal Guide scores of partner rapists, rapists, and child molesters.**

3.7 Appendix B

R Sq Linear = 0.005
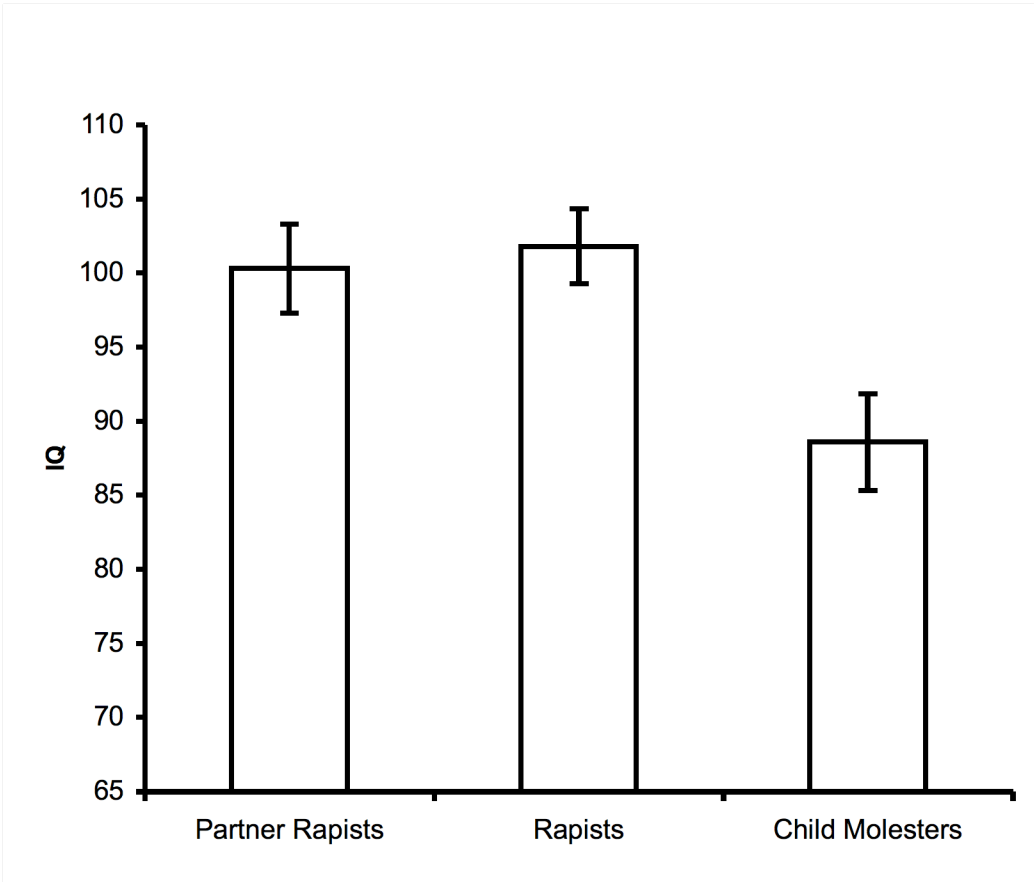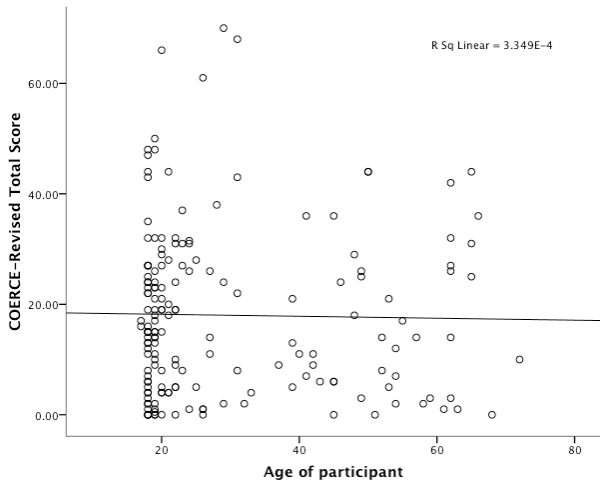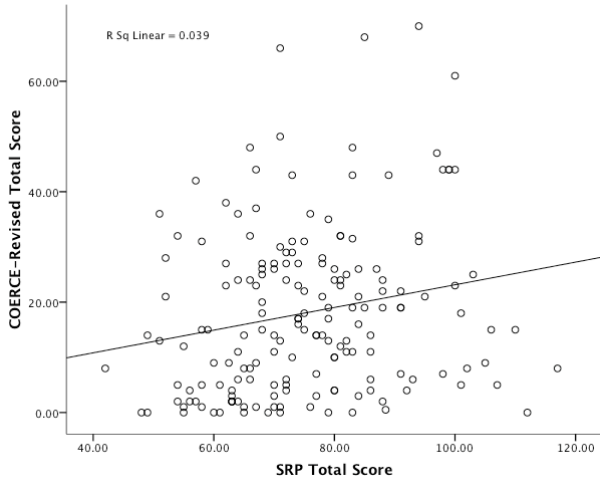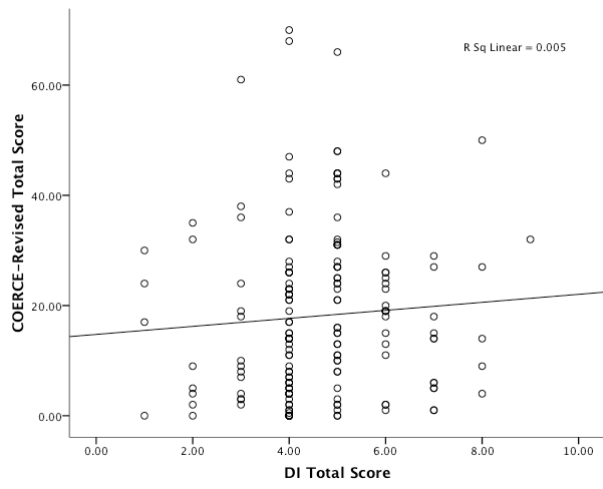
Chapter 4
Phallometrically Measured Sexual Preferences of Partner Rapists, Non-Partner Rapists, and Community Controls

Camilleri, J. A., Quinsey, V. L., Harris, G. T., & Goetz, A. T.

4.1 Abstract

To date, no study has examined partner rapists' phallometric responses. Here, we compared partner rapists with non-partner rapists and community controls on two phallometric sexual deviance indices: the rape index and the aggression index. Partner rapists were significantly less deviant than rapists on the rape index and not different from normal controls. Investigating within group differences revealed that, although there was a smaller proportion of partner rapists than non-partner rapists who showed a sexual preference for rape scenarios (38% vs. 57%), this difference was not significant. The three groups did not differ on aggression index scores. Overall, our results suggest that partner rapists are less sexually deviant than non-partner rapists.

4.2 Introduction

Despite the evidence that partner rape is a relatively prevalent type of sexual assault, very few empirical studies have been conducted to understand its etiology (Camilleri & Quinsey, submitted-a). Over the years, several hypotheses have been generated to explain this behavior. The *dominance and control hypothesis* posits that partner rape maintains men's authority over women (reviewed in Martin, Taft, & Resick, 2007); the *cuckoldry risk hypothesis* states that partner rape is a response to infidelity (Camilleri & Quinsey, submitted-a, submitted-b; Goetz & Shackelford, 2006; Goetz, Shackelford, & Camilleri, 2008); and the *antisocial development hypothesis* states that partner rape is explained by antisocial characteristics (Camilleri & Quinsey, submitted-a). Initial tests of these hypotheses have shown that partner rapists exhibit some

common antisocial characteristics but not all. For example, they tend have less extensive criminal histories than non-partner rapists (Camilleri & Quinsey, submitted-a), and two studies have directly implicated cuckoldry risk as an important dynamic risk variable in these cases (Camilleri & Quinsey, submitted-b; Goetz & Shackelford, 2006).

One characteristic of sexual offenders that has not been tested among partner rapists is the degree of their sexual interest in violent and coercive sexual activity. The penile plethysmograph, which measures changes in penile circumference or volume in response to images or auditory stimuli is a valid method for determining sexual deviance (reviewed in Camilleri & Quinsey, 2008; Quinsey & Lalumière, 2001). There is a correspondence between phallometrically measured sexual preferences and offense histories among convicted sexual offenders (e.g., Quinsey & Chaplin, 1988; Rice, Chaplin, Harris, & Coutts, 1994). When pooling across studies that used reliable assessment methods, approximately 67% of rapists prefer rape scenarios over consenting sex scenarios (Lalumière & Quinsey, 1993), and the presence of phallometrically measured sexual deviance predicts sexual recidivism (Hanson & Bussière, 1998), particularly if the offender is also psychopathic (e.g., Harris et al., 2003). Lalumière, Quinsey, Harris, Rice, and Trautrimas (2003) showed that men who non-sexually assaulted women were less deviant than non-partner rapists and indistinguishable from non-sex offender controls.

Whereas pedophilic interests can be explained as a dysfunction of the male sexual preference system (Quinsey, 2003), an interest in coercive sex with adult women can be explained as either a byproduct or design feature of antisociality (Harris, Rice, Hilton, Lalumière, & Quinsey, 2007; Lalumière, Harris, Quinsey, & Rice, 2005). Partner rape can therefore be explained in two ways: perpetrators are either motivated to sexually coerce their partner because they have a sexual preference for coercive sex, or they sexually coerce their partner because their

antisocial characteristics, such as high mating effort, impulsivity, and callousness, not only makes denying a partner's choice to refuse sex more likely, but disinhibits them to violence involved with such acts. To our knowledge, no studies have reported whether sexual preference for rape is indeed a characteristic of partner rapists, so the purpose of this study is to compare phallometrically measured sexual interests of partner rapists to non-partner rapists and community controls.

4.3 Method

Archived case files of rapists ($n = 30$) who were either committed to, or assessed at, a maximum security psychiatric facility were randomly selected and reviewed for phallometric assessments. All case files of partner rapists were reviewed ($n = 25$) due to their infrequent admission. Of these offenders, 25 rapists and 16 partner rapists had phallometric scores on one or more assessments for sexually coercive and aggressive interests. A nonforensic control group ($n = 33$) was recruited from the local community and completed the same assessment that the offenders had received.

The audio rape tests (Quinsey & Chaplin, 1982; Quinsey, Chaplin, & Varney, 1981; Rice et al., 1994) included two to five stories for each theme: raping an adult woman, nonsexual aggression against an adult woman, consenting sex with an adult woman, and neutral stimuli. Sexual arousal to these stimuli was measured using a mercury-in-rubber strain gauge penile plethysmograph. Phallometric scores for all stimulus presentations were recorded using the maximum response minus the baseline recorded at the beginning of that stimulus.

Partner rapists, rapists, and controls were compared on two deviance indices. These indices, sometimes referred to as deviance differentials (for details see Lalumière & Harris, 1998), were calculated for each test by first standardizing all phallometric scores within subjects,

then averaging responses for each stimulus category for each subject (e.g., average across responses to 3 adult rape stories). The average responding to a given non-deviant category (e.g., average across 3 consenting adult sex stories) was subtracted from the average responding to the deviant category (e.g., non-consenting sex with an adult). If an offender was assessed more than once on the same test, we used only their first assessment. Using available data, indices were calculated to capture sexual preferences for (i) adult rape index (mean response to rape stories minus mean response to consenting sex stories) and (ii) adult nonsexual violence (aggression; mean response to aggression stories minus mean response to consenting sex stories). Scores above 0 indicate a deviant sexual preference, whereas scores below 0 indicate a nondeviant sexual preference.

4.4 Results

We compared both rape index and aggression index scores across partner rapists, rapists, and controls using separate ANOVAs. Rape index scores varied significantly, $F(2, 67) = 6.00$, $p = .004$, $\eta^2 = .15$. We found that partner rapists ($n = 16$, $M = -0.38$, $SD = 0.84$) were significantly lower than rapists ($n = 21$, $M = 0.21$, $SD = 0.90$), $p = .04$, Cohen's $d = 0.68$, but not different from controls ($n = 33$, $M = -0.63$, $SD = 0.88$), $p = .36$, Cohen's $d = 0.29$, on rape index scores (Fisher's Least Significant Difference). Controls were also significantly lower than rapists, $p = .001$, Cohen's $d = .95$ (Figure 1). Using a cutoff of 0 on the rape index, there was no difference in the proportion of sexually deviant partner rapists (38%) and rapists (57%), $p = .32$, or controls (27%), $p = .52$ (Fisher's Exact Tests). As expected, a significantly greater proportion of rapists were sexually deviant than controls, $p = .04$.

Aggression index scores did not vary significantly, $F(2, 65) = 1.05$, $p = .36$, $\eta^2 = .03$. Partner rapists ($n = 14$, $M = -0.98$, $SD = 0.67$) were not different from rapists ($n = 21$, $M = -0.83$,

SD = 0.77), *p* = .57, Cohen's *d* = .22, or controls (*n* = 33, *M* = -1.14, *SD* = 0.85), *p* = .53, Cohen's *d* = .21, and controls were not different from rapists, *p* = .16, Cohen's *d* = .39, on aggression index scores (Figure 1). Using a cutoff of 0 on aggression index scores, the proportion of partner rapists (7%) was not different from rapists (14%) or controls (12%), and no difference was found between the rapists and controls, Fisher Exact Tests, all *p* > .64.

4.5 Discussion

In this study we tested whether sexual deviance was a characteristic of partner rapists by comparing them to non-partner rapists and normal controls, groups whose sexual preferences have been studied extensively. Partner rapists scored lower than rapists and were not different from controls on rape index scores. Although partner rapists and rapists were sexually aggressive towards adult women, a sexual preference for coercive sex is a characteristic of the latter group, suggesting that the motivation of partner rapists is different from non-partner rapists. Lalumière et al. (2005) elaborated on the relationship between sexual interest in coercive sex and sexual offending, and suggested that such a preference may be a design feature of antisociality. Our results are therefore consistent with the finding that partner rapists exhibit fewer antisocial characteristics than other sex offenders (Camilleri & Quinsey, submitted-a), and that alternative explanations for partner rape are needed. We have, for example, investigated the possibility that partner rape is related to cuckoldry risk (Camilleri & Quinsey, submitted-b; Goetz, Shackelford, & Camilleri, 2008).

Our findings do not entirely rule out sexual preference for rape as a characteristic of some partner rapists, however. We found that the proportion of sexually deviant partner rapists was not different from rapists and controls, suggesting partner rapists comprise a heterogenous group. We therefore expect that men who prefer coercive sex are sexually aggressive towards both

strangers/acquaintances and partners. This interest in coercive sex should not be confused with sadism. Consistent with past research (e.g., Quinsey et al., 1981), sadism is an unlikely explanation for partner rape because like most rapists, most partner rapists had nondeviant scores on the aggression index. The relevance of sadism to partner rape corresponds with Lalumière et al.'s (2005) assertion that sadism may account for a small proportion of sexual offenses, but is not a satisfactory explanation for the differences between rapists and nonrapists.

The heterogeneity of partner rapists' interests in rape cues is consistent with an earlier study that showed partner rapists are heterogeneous regarding psychopathy. Camilleri and Quinsey (submitted-a) found a trend for partner rapists to have lower psychopathy scores than rapists ($p = .07$), although the proportion of psychopaths were the same in the two groups. In conjunction with partner rapists having normal IQ, less extensive criminal history than other sexual offenders, and greater age (Camilleri & Quinsey, submitted-a), our results indicate antisocial development may account for a smaller proportion of partner rape than it accounts for non-partner rape. Based on our current understanding of partner rape, future research will need to test whether sexual deviance, psychopathy, and cuckoldry risk represents mutually exclusive paths to partner rape, or if they interact to account for such behavior (see, e.g., Goetz & Shackelford, in press).

Differences on index scores between partner rapists and other sexual offenders are not likely accounted for by either biased sample characteristics because the proportion of rapists with sexual preferences for rape in our sample is within the range of proportions found across other samples (Lalumière & Quinsey, 1993, 1994). Using partner rapists who were assessed or incarcerated at a maximum security psychiatric facility might suggest their responses are not representative of other partner rapists. Although more research with partner rapists from nonpsychiatric and less secure facilities are needed to test this claim, studies that sampled from

the population used in our study have generalized to other correctional and nonforensic psychiatric facilities (Quinsey, Harris, Rice, & Cormier, 2006).

Two practical uses of phallometric assessments are to inform treatment targets and to predict recidivism. Our results therefore provide further evidence that the criminogenic needs of partner rapists may be different from or less extensive than those of other sexual offenders. That is, a sexual offense against one's partner is not indicative of sexual deviance in the same way other sexual offenses might be (e.g., Seto & Lalumière, 2001).

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Figure Captions

Figure 4-1. SE bars for controls, partner rapists, and rapists on Rape Index and Aggression Index scores.
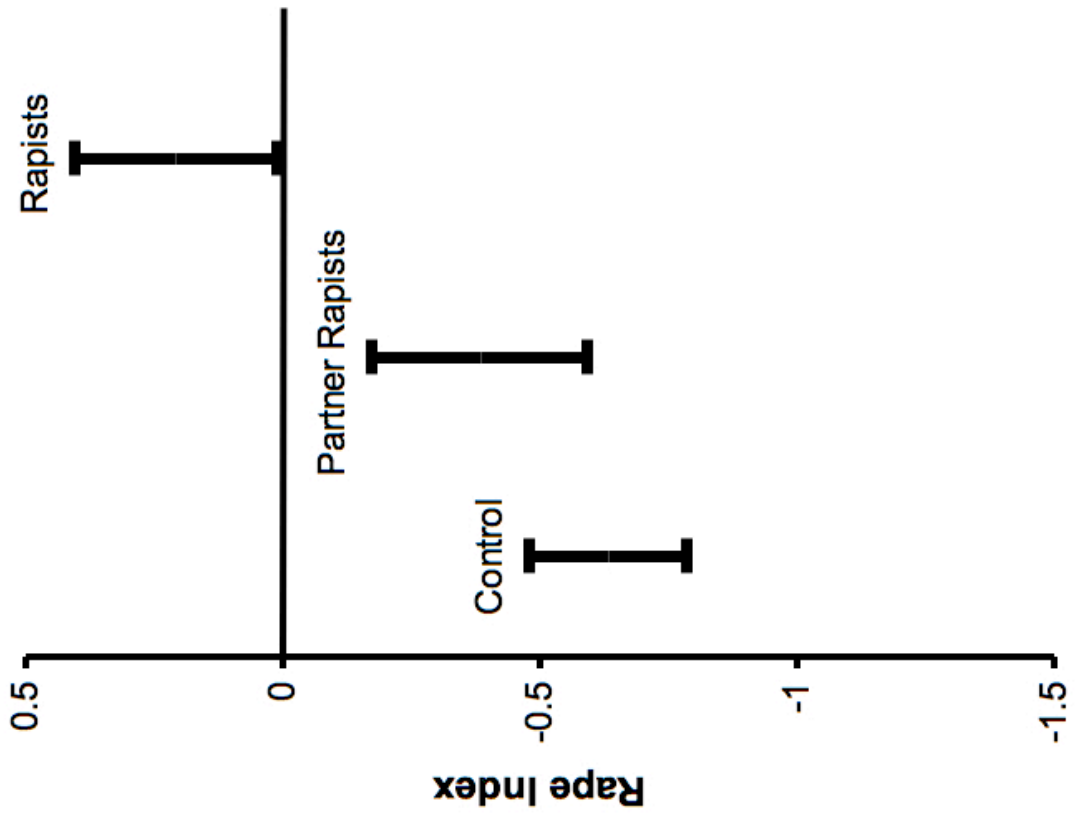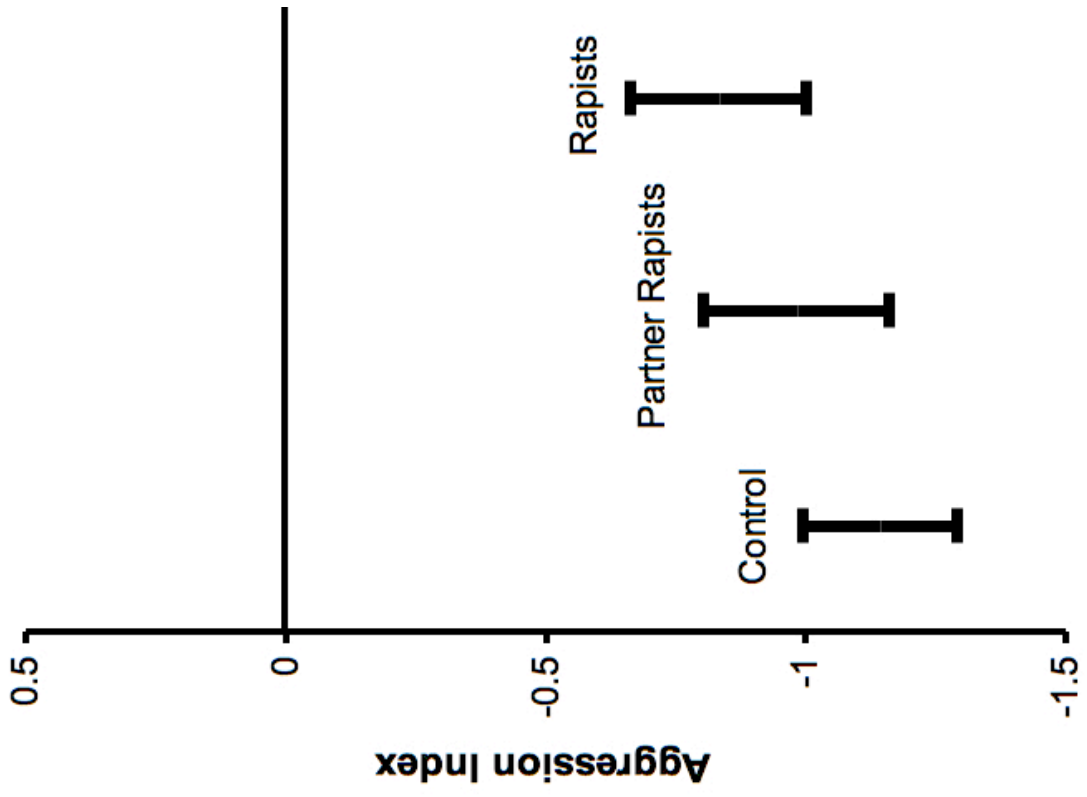
Chapter 5
Testing the Cuckoldry Risk Hypothesis of Partner Sexual Coercion in Forensic and Community Samples

Camilleri, J. A. & Quinsey, V. L. (submitted)

5.1 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.

5.2 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 & Shields, 1983; Thornhill & Palmer, 2000; Thornhill & Thornhill, 1983). The theoretical solution to this problem requires an examination of both the function of sexually coercive tactics and the conditions where this function would operate to increase fitness.

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 & Shackelford, 2006; Lalumière et al., 2005; Quinsey & Lalumière, 1995; Thornhill & Palmer, 2000), 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 & 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 & 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, & 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. Genetic studies have shown that promiscuity and sociosexuality in humans have heritable components (Bailey, Kirk, Zhu, Dunne, & Martin, 2000; Lyons et al., 2004) and there is some evidence for a genetic contribution to variability in female infidelity (Cherkas, Oelsner, Mak, Valdes, & Spector, 2004). These findings support hypotheses that suggest extra-pair copulation by women is an adaptive characteristic (Wilson & Daly, 1992).

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, & Goetz, 2005), 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, & 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 Difference in Sexual Interest and Coercive Behavior

The causal origin of sexual conflict is grounded in sexual selection theory. As originally pointed out by Bateman (1948), men can increase their fitness by obtaining more sexual partners whereas women cannot (Andersson & Iwasa, 1996). Alternatively, women are more successful at increasing their fitness by attaining higher quality mates—such as those who could provide the necessary resources for her offspring to flourish (see Alcock, 2001; Buss & Schmitt, 1993). It is the discrepancy between these sexual strategies that underlies sexual conflict. Results from Clark and Hatfield's (1989) study is often cited as an example of such divergent sexual interests—men and women were equally as likely to go on a date with someone they just met, but 75% of men, and none of the women, agreed to sexual intercourse. An unanswered question remains: is there

greater sexual disinterest among women in committed relationships? Though we did not explore the reasons for refusing sex with one's partner in this study, we expected that women's disinterest is a source of sexual conflict in committed relationships resulting in higher frequency and variability of tactics used to obtain sex by their male partners. We therefore predicted that more women than men would have refused sexual intercourse, that men would report using more tactics to obtain sex than would women, and that men would report using more sexually coercive acts than would women to obtain sex.

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, & Weekes-Shackelford, 2004), but psychological mechanisms shaped by sexual selection are typically sex-specific. In each test of the cuckoldry risk hypothesis, we expected to find the relationship between cuckoldry risk and sexual coercion among men but 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. 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 & 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. We therefore expected 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.

Reproductive Value and Age Disparity

Daly and Wilson (1988) provided evidence that domestic assault may be a form of coercive control in that victims of such assault were of higher reproductive value than non-victimized women. They also found an elevated number of uxoricides in unions with higher age disparities, and suggest that such disparities lead to many types of conflict in relationships. If domestic sexual assault is an extension or other manifestation of coercive control, and sexual conflict also results from higher age disparities, we should find an interest in using coercive tactics among males with young partners or when there is a larger age gap between them.

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 ensures ecological 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. 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 significant number of cuckoldry risk events prior to committing their offense, and that partner rapists would have experienced more cuckoldry risk events prior to committing their offense than nonsexual partner assaulters[14].

5.3 Study 1

5.3.1 Method

Participants

Of the 477 participants in this study, a total sample of 370 participants were included in our analyses because they met our eligibility criteria: were sexually active in a heterosexual relationship, participated once in this study (if participant signed up more than once, their initial responses were used), 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, $M = 5.01$, $SD = 8.86$).

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[14] 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.

Materials

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

Past Behaviors. Participants were asked to list up to five things they said and five things they did to get a reluctant sexual partner to have sexual intercourse. Two independent raters categorized each response into one of five categories: verbal coaxing; verbal coercion; physical coaxing; physical coercion; and partner never refused sexual intercourse. We coded the last category only if the participant explicitly stated his or her partner never refused. Participants who left the section on past behaviors blank were excluded from the analysis, resulting in a total sample of 330 participants. Rater agreement (kappa coefficient) was .98 for coding verbal and physical acts, but only 0.68 for determining coaxing and coercion. Even though the percent agreement for 1497 statements was 97.4%, we excluded from our analyses any description that could not be agreed upon by the raters.

Indirect Cuckoldry Risk. Cuckoldry risk (PROP), sometimes referred to as sperm competition risk, was assayed indirectly as the proportion of time with one's partner since last having 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 (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. 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. The Tactics to Obtain Sex Scale (TOSS; Camilleri, Quinsey, & Tapscott, 2007) was used because it contains subscales that measure propensity for sexual coercion (COERCE) and sexual coaxing (COAX). Participants rate 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 in obtaining sex. 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 alphas > .89) and construct validity.

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 & West, 1991), which allowed us to interpret interactions between continuous variables.

5.3.2 Results

Sex Difference in Sexual Interest and Coercive Behavior

A total of 172 women and 156 men responded to the question about past actions used to obtain sex from a reluctant sexual partner. Supporting our first prediction, we found that a greater proportion of women (10.5%), than men (3.8%) reported having partners who never refused sexual intercourse, Fisher's Exact Test, $p = .02$ (1-tailed). From the partner's perspective, in other words, men are more likely than women to never refuse sexual intercourse with their partner.

When assuming 'no response' meant no acts were used to obtain sex, men ($M = 4.5$, $SD = 2.9$) reported using significantly more total acts to obtain sex than women ($M = 3.9$, $SD = 2.5$), $t_{356} = 2.3$, $p = .02$. A significant difference between men ($M = 5.0$, $SD = 2.8$) and women ($M =$

4.4, $SD = 2.4$) was also found when using a more conservative estimate of comparing those who reported using at least one tactic, $t_{302} = 2.0$, $p = .046$.

Of the participants who used tactics to obtain sex from a reluctant partner ($n_{men} = 142$, $n_{women} = 153$), a significantly higher proportion of men reported using physical coercion (7.7%) than women (2.6%), Fisher's Exact Test, $p = .04$, (1-tailed). There were no differences between the proportion of men (7.0%) and women (4.6%) who used verbal coercion, Fisher's Exact Test, $p = .26$ (1-tailed).

Temporal Sensitivity to Cuckoldry Risk & Sex Specificity

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 TIME at different levels of PROP, see Aiken & 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 (Fig. 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, ps > .11. Consistent with our prediction, there were no main effects or interactions among female participants, ps > .14.

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 (Fig. 2). Apart from a not quite 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, $ps > .12$.

Reproductive Value and Age Disparity

Partner age and age disparity were not related to reporting an interest in sexual coercion. Among men, COERCE was unrelated to partner's age, $r_{162} = .051$, $p = .52$, and age disparity, $r_{158} = -.073$, $p = .36$. There was also no relationship between COERCE and partner's age, $r_{185} = -.10$, $p = .20$, or age disparity, $r_{183} = -.12$, $p = .12$, among women.

5.4 Study 2

5.4.1 Method

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 ($n = 30$) and rapists (sexual assault against adult women, $n = 30$) 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

Cuckoldry risk. To evaluate cuckoldry risk among convicted partner rapists, archived case files were reviewed by two raters for descriptions of the circumstances prior to the offense. 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 & 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%.

Victim's age and age disparity. In Study 1 we did not find a relationship between partner's age or age disparity and self-reported interest in partner sexual coercion, but it is still possible these variables are related to overt behavior. We therefore compared partner rapists to nonsexual partner assaulters and men who raped adult women on victim's age and age disparity between the perpetrator and victim. If partner rape victimization is unrelated to the victim's age, then victims of partner rape should not be as young as victims of rape or domestic assault (victims of rape and domestic assault are mostly young women, and age disparity has been implicated in domestic assault; Daly & Wilson, 1988; Lalumière et al., 2005).

5.4.2 Results

One sample t-tests indicated that both partner rapists, $t_{15} = 9.30$, $p < .001$, and nonsexual partner assaulters, $t_{18} = 11.76$, $p < .001$, experienced a significant number of cuckoldry risk events prior to committing their offense. Moreover, partner rapists ($M = 1.88$, $SD = .81$) experienced significantly more such events 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%). There was no difference between partner rapists and partner assaulters in the proportion of men who experienced any cuckoldry risk event, Pearson $\chi^2 = 0.14$, $p = 0.71$

There was a significant main effect for offense type on victim's age, $F_{2,49} = 4.74$, $p = .01$. Post hoc comparisons using Fisher's Least Significant Difference showed that victims of partner rape ($n = 17$, $M = 25.59$, $SD = 8.29$) were as young as victims of nonsexual domestic assault ($n = 14$, $M = 22.43$, $SD = 5.74$), $p = .39$, and both were younger than victims of rape ($n = 21$, $M = 32.5$, $SD = 7.8$), ps $< .04$. We also found a main effect for offense type on age disparity, $F_{2,36} = 7.69$, $p = .002$. Age disparity scores were not significantly different between partner rapists ($n = 12$, $M = 2.9$, $SD = 5.95$) and nonsexual partner assaulters ($n = 12$, $M = 6.75$, $SD = 7.5$), $p = .33$, but they were both higher than age disparity for rapists ($n = 15$, $M = -6.17$, $SD = 12.56$), ps $< .02$. Paired samples t-tests, however, showed that partner rapists ($M = 30.42$, $SD = 11.5$) were not significantly older than their victims ($M = 27.5$, $SD = 8.9$), $t_{11} = -1.7$, $p = .17$, whereas partner assaulters ($M = 29.17$, $SD = 9.5$) were significantly older than their victims ($M = 22.4$, $SD = 9.5$), $t_{11} = -3.12$, $p = .01$. These results suggest victims of partner rape tend to be at a young reproductive age and that age disparity as a predictor of partner rape has yet to be determined.

5.5 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.

Prevalence of Sexual Conflict and Coercive Behaviors

Since sexual refusal is a prerequisite for sexual coercion, we first needed to establish that men face sexual refusal in relationships. Explanations for why we found women are more likely to refuse include men's aversion to sexual refusal as a byproduct of their preference for sexual quantity (or strictly an adaptation to accept intercourse when offered), and women's sexual refusal in relationships as either a byproduct of their discriminative attitude towards sexual partners, as part of a strategy among women engaging in extra-pair copulations (e.g. ensure likelihood of 'sexy sons'), or simply due to natural fluctuations of sexual interest across the menstrual cycle. Although our study was not designed to answer why the refusal rate is different, or even why there is refusal at all, our results provide evidence that refusal is a reproductive barrier that some men face in a committed relationship.

Our sample provided confirmatory evidence in a community sample that men, more than women, use tactics to obtain sex and report having used physical sexual coercion to obtain sex from a reluctant partner. Unfortunately we cannot contrast these sex differences with sex differences found in conviction rates of domestic sexual assault because these data are not readily available. Our data are consistent with research showing that approximately 7% to 14% of married women report being sexually assaulted by their romantic partner (Hanneke & Shields, 1985; Russell, 1990), and that few, if any, domestic sexual assaults were committed by women.

Response to Cuckoldry Risk is Not Arbitrary

The preferred strategy to obtain sex from a reluctant sexual partner depends on the cues being responded to. Men were more likely to prefer 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 a preference 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. Having a female partner who refuses sex under this scenario, however, may indicate infidelity, but the evidence is not salient enough to be convincing. 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 (Birkhead, 2000). 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. 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

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the concept of *last male sperm precedence* (Birkhead, 2000), where males who are last to copulate are most likely to achieve successful fertilization. This common finding in nonhuman animal species has not been directly observed in humans, but researchers are now looking at mechanisms that might result in last male sperm precedence in humans as well (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 noncoercive 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 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

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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, & 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. Since 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 preference 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, & Camilleri, 2004; Simourd & 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 & Guze 1975; Cloninger, Christiansen, Reich & 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.

Partner's Reproductive Value

Young women are more desirable by virtue of their age, and should elicit greater proprietary behavior from their male counterparts. Our data suggests this logic does not apply for self-reported interest in sexual assault. A possible explanation is that predictors of partner sexual coercion should involve characteristics that signal infidelity. To our knowledge, there are no published data that demonstrates a relationship between age or age disparity and infidelity risk. Some studies have shown that the proportion of women who ever engaged in extra-marital affairs increases with age (Atkins, Jacobson, & Baucom, 2001; Greeley, 1994; Traeen & Stigum, 1998), but these results are confounded by opportunity—older women had more time for extramarital relationships. Data from our forensic sample, on the other hand, indicate victims of partner sexual assault are younger women in their 20s. An explanation for this discrepancy between self-report partner sexual coercion and actual behavior is a possible interaction between partner's age and other factors related to partner sexual assault, such as antisocial characteristics.

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. To enhance external validity, we used a scale that was developed to maximize the link between self-reported attitudes and subsequent behavior. A common finding in the attitude literature is that specific measures of attitudes are better predictors

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of actual behavior. Our scale not only asked about specific acts, but asked about acts in response to an unambiguous scenario. 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., 2007). 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 confirmed studying the circumstances preceding the acts of men convicted of raping their romantic partner.

Cuckoldry Risk & 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 furthers the 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. 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 offense, 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 & 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.

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 & 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 (Lalumière et al., 2005), and uxoricide to reduce the fitness of rival males (Buss, 2005), though uxoricide can also be explained as a byproduct of coercive control (Daly & Wilson, 1988). 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 expect 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 resistance plus the probability that infidelity has occurred, moderated by risk 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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Figure Captions

Figure 5-1. 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 & West, 1991; Cohen et al., 2003).

Figure 5-2. Simple slopes of the relationship between DCRS-tot and COERCE when the average time since the risk events took place was (+1 SD), moderate (mean), and recent (-1 SD).
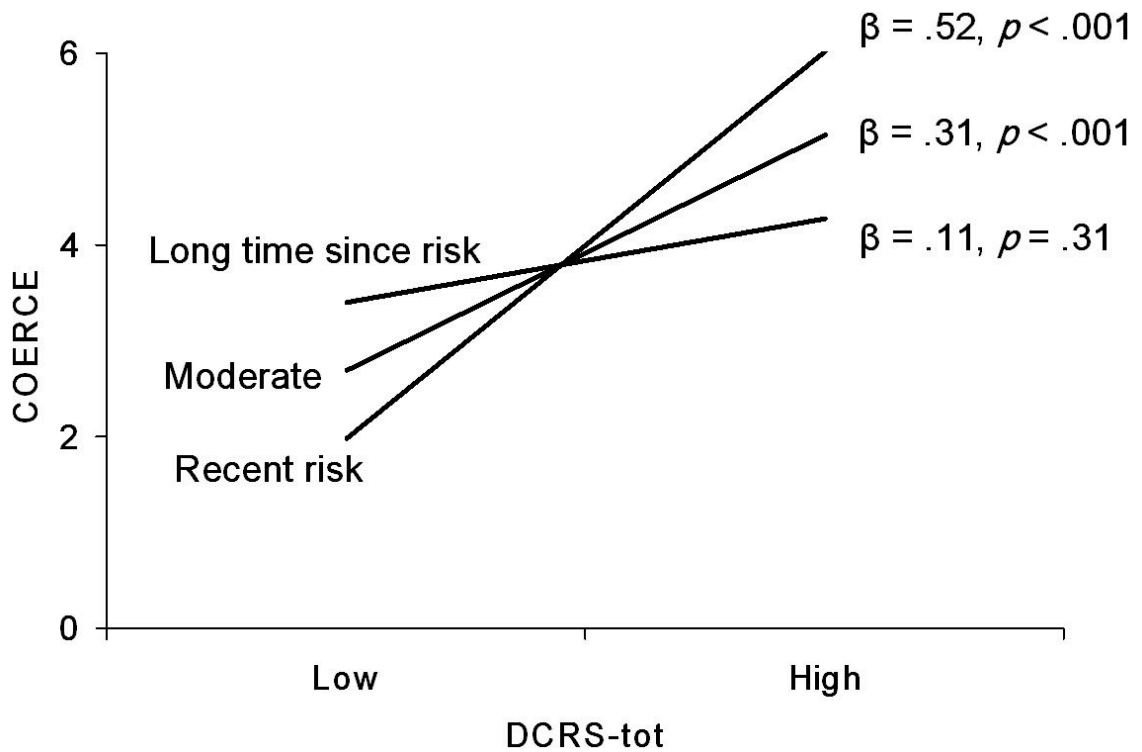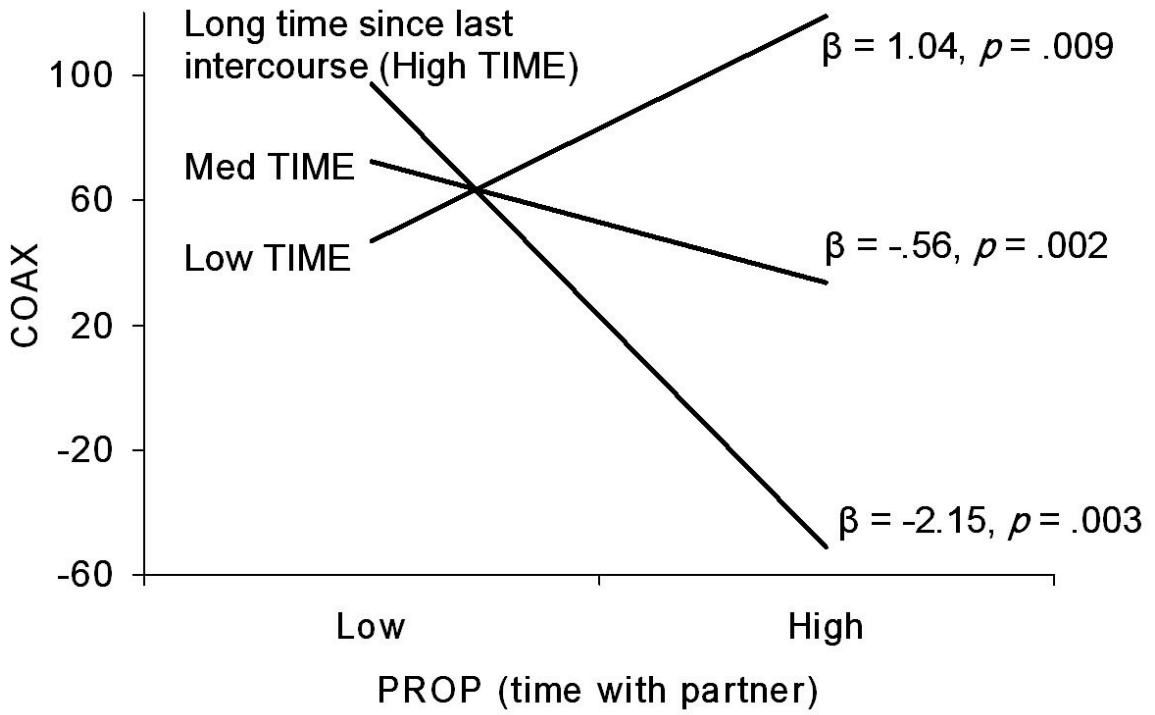
Chapter 6
Men's Sexual Arousal to Sperm Competition and Cuckoldry Risk

Camilleri, J. A. & Quinsey, V. L.

6.1 Abstract

The effect of signaling sperm competition and cuckoldry risk on male sexual arousal was studied. We tested the influence of sperm competition on sexual arousal by manipulating the proportion of nude male to females viewed by men. Penile tumescence changes indicated that sexual arousal is positively related to the number of women and negatively related to the number of men in multi-person images. We also tested the influence of cuckoldry risk on sexual arousal by measuring penile tumescence in response to stories describing partner infidelity, and found that not only do men show as much arousal to infidelity as they do to consenting sex, men in relationships show greater arousal to infidelity. We discuss our results in the context of human sexual preferences and sperm competition.

6.2 Introduction

The psychological study of partner sexual coercion has attracted increasing attention. One hypothesized route to partner rape is known as cuckoldry risk (i.e., probability of multiple mating in pair-bonds), where sexual coercion functions to overcome fitness costs associated with partner infidelity (Camilleri, 2004; Goetz, Shackelford, & Camilleri, in press). Previous research has shown a relationship between past instances of cuckoldry risk and sexually coercive behaviors in relationships—that self-reported interest in partner sexual coercion is predicted by recently experiencing a number of cues to partner infidelity (cuckoldry risk events), and that a large proportion of partner rapists experienced at least one cuckoldry risk event prior to committing their offense (Camilleri & Quinsey, submitted; Goetz & Shackelford, 2006). If cuckoldry risk predicts partner rape, a necessary condition of this relationship is that cues to partner infidelity

should precipitate sexual arousal. To date, much of the research has looked at other responses to cuckoldry risk.

The cuckoldry risk hypothesis was derived from sperm competition theory. Sexual coercion is one of many characteristics that might have evolved to actively compete for fertilizations by engaging in sperm competition. Thus, sperm competition cues do not have to take the form of partner infidelity itself but can signal the probability that a short-term sexual partner has "multiply mated"—had intercourse with more than one man within the same fertile cycle—or can signal the number of multiple matings that might occur. Researchers have assayed sperm competition in humans by measuring the proportion of time with one's partner since last having intercourse, and found that when the proportion of time was low, men found their partner more attractive, were more interested in having intercourse with his partner, and had larger ejaculates (Baker & Bellis, 1993; Shackelford et al., 2002) (but see Birkhead, 2000; Nicholls, 2002). Others looked at the proportion of males to females in pornographic images as cues to sperm competition. In one study, Pound (2002) found that men prefer to view images that include multiple males and one female, and suggested this interest results from men's sensitivity to sperm competition (i.e., a byproduct of arousal in response to sperm competition). This result falsifies the "harem fantasies" hypothesis that predicts men should exhibit a preference for images that depict polygynous mating (Malamuth, 1996; Pound, 2002). In another study, Kilgallon and Simmons (2005) found a higher percentage of motile sperm among men who viewed sexually explicit images that had two men and a woman, than men who viewed sexually explicit images with three women. These responses to sperm competition cues function in a way that would promote fitness.

Although these studies suggest a functional response to sperm competition, their designs have constraints that either make them irrelevant to partner sexual coercion or confounds their interpretation. For example, the proportion of time with one's partner since last intercourse is an

indirect cue to infidelity—that is, they index the probability that infidelity could occur, not the probability that infidelity did occur. Thus, they are likely to influence more benign tactics that function to reduce possible cuckoldry risk, such as sexual coaxing and persistence with a reluctant sexual partner (Camilleri & Quinsey, submitted; Shackelford, Goetz, McKibbin, & Starratt, 2007).

The two studies that inferred sperm competition from varying the proportion of nude men to women have confounds that need to be addressed. Pound (2002) acknowledged that arousal to sperm competition cues were inferred in his study, and that a more direct measure of arousal, particularly penile plethysmography, would be an important method for validating his results. Although researchers have shown a correspondence between self-reported sexual preference and phallometrically measured arousal, the correspondence disappears with participants who try to hide socially undesirable interests, such as sexual offending against children (Quinsey, Steinman, Bergersen, & Holmes, 1975). For some men, reporting a preference for images with multiple males may not be seen as socially desirable and results may therefore underestimate men's interest in such stimuli. Also in Pound's study, the sexual orientation of the respondents was not known. Samples with bisexual or homosexual men would bias the results.

Kilgallon and Simmons' (2005) study, where one group of men viewed a set of images that cued sperm competition and another group viewed images that did not, is problematic because they did not control for the attractiveness of image content in either category, the amount of time viewing each image in the set (e.g., participants could have viewed one image that contained a highly attractive female), the acts portrayed (e.g., intercourse, petting, or no actions), the body parts portrayed (e.g., how much nudity from either sex were shown?), image quality, and the number of images in each set were not reported (i.e., participants may not have viewed the same number of images for each set). Thus, there may be one of many aspects of the image sets that men responded to that are unrelated to sperm competition risk.

The purpose of this study was to resolve whether cues to sperm competition and cuckoldry risk results in male sexual arousal by using appropriate controls and by using an objective and valid measurement of male sexual arousal. By doing so we can determine whether men become sexually aroused to infidelity, thereby providing additional support for the relationship between cuckoldry risk and partner sexual coercion. In Study 1 we tested Pound's (2002) hypothesis that cuing sperm competition by varying the proportion of nude males to females results in higher sexual arousal. By controlling image quality, quantity, actions, viewing time, and attractiveness, and using a within-subjects design we could determine whether sexual arousal to sperm competition cues is solely due to the proportion of males to females being viewed. In Study 2 we tested whether direct cues to cuckoldry risk resulted in higher sexual arousal by using multiple stories that depict consenting intercourse, partner infidelity, nonconsenting intercourse, and nonsexual violence. Listening to second-person narratives of partner infidelity is a direct way to cue partner infidelity that can be manipulated in a laboratory setting. If men do not show arousal to such depictions as they do to consenting sexual depictions, it would be difficult to argue that cuckoldry risk is related to sexual arousal.

6.3 Method

Participants

A sample of 31 heterosexual men were recruited from the local community. Their age ranged from 22 to 70 ($M = 43.9$, $SD = 13.4$), income ranged from <$10,000 to >$100,000 (mode = $10,000 - $30,000), and only 3 participants did not complete high school. Of those who completed high school, 21 completed or were completing postgraduate education. Participants were given $20 for their involvement.

Materials

The experiment took place in two adjoining rooms. The subjects' room included a reclining chair placed in front of a 14.5 by 10.75 inch computer monitor. Participants sat 35 inches from the monitor. Altec Lansing speakers were placed on either side of the monitor. To ensure participants were viewing the monitor at all times a webcam was positioned to view the participant's face. Questionnaires were completed on a desk located in the same room. The experimenter's room included a computer that controlled stimulus presentation and data collection. The experimenter and subject communicated using an intercom.

Penile tumescence was measured using a mercury-in-rubber strain gauge (DM Davis). Electrical conductance changes in these gauges were translated into corresponding millimeter changes in penile tumescence using Limestone Technologies DataPac_USB™ and Preftest Professional Suite™. The gauge was calibrated at five-5 mm intervals before each use to ensure linear change (Earls & Jackson, 1981).

Stimuli - Study 1

We varied the proportion of men to women while controlling for the acts and attractiveness of each person portrayed in a multi-person image. First, a pool of 182 pictures of adult men and women were downloaded from publicly accessible adult websites. Pictures were selected using the following criteria: the individual appeared to be over the age of 18; unobstructed view of the genitals, chest, and face; only one person was visible in the picture; the picture had high resolution. Adobe Photoshop was used to crop and resize pictures so that only the knees to head were included and all pictures had the same height of 737 pixels and a resolution of 72 pixels per inch.

A pilot study was run to ensure images of equivalent attractiveness were placed in separate categories. A sample of 10 male participants rated each picture on attractiveness and

arousal to members of the opposite sex. Pictures were ranked from highest attractiveness/arousal to lowest based on their mean score across the 10 raters. Starting with the highest rank, pictures were randomly assigned to create one of seven male to female ratio image categories: 1:0 (1 male); 0:1 (1 female); 2:0 (2 males); 0:2 (2 females); 1:1 (1 male and 1 female); 2:1 (2 males and 1 female); 1:2 (1 male and 2 females). This procedure was iterated three more times so that each category had four stimuli. The mean response across all four images per category was calculated to ensure responding to particular individuals in a category did not confound the results. Four neutral images of landscapes were also included, for a total of 32 images.

In multi-person categories, pictures were evenly spaced side by side to create the new image. If men prefer images that depict sperm competition (presence of at least one male and one female), we should see the highest response to 2:1, then progressively lower to 1:1 then 1:2 (sperm competition images). Lowest responses should be found with 0:2, 0:1, 2:0, 1:0 categories (no sperm competition images). Alternatively, if interest in pornographic material is predicted by the "harem fantasies" hypothesis, we expect highest arousal to images that have more women and fewer men. See Figure 1 for a summary of stimulus categories and their expected results for each hypothesis.

Stimuli – Study 2

To assess sexual arousal to cuckoldry risk we adapted a forensic assessment that is used to evaluate sexual preferences for sexual coercion and aggression. The stimuli we used have been thoroughly validated (Quinsey & Chaplin, 1982; Quinsey, Chaplin, & Varney, 1981). It included three neutral stories (e.g. going out for dinner), three consenting sex stories (e.g., intercourse with a girlfriend), and two other control conditions: three sexual coercion stories (e.g., raping a woman at a park) and three aggression towards women stories. We created three stories that describe the participant discovering and viewing a romantic partner having sexual intercourse with another man (e.g., coming home early from work to find the partner in bed with another man). The stories

only describe what the person witnessed, unbeknownst to the partner. We included the same number of sexual phrases in stories about infidelity as were included in stories about consenting sex (i.e., approximately twelve sexual phrases per story). All stories were written in the second person narrative, were approximately the same length ($M = 115$ seconds, $SD = 18$ seconds), and were recorded by a female narrator who maintained the same neutral intonation in each reading. That is, sexual stories were not read as though the narrator was getting aroused.

Procedures

An advertisement was placed in the local newspaper requesting participation in a psychology study. Individuals who responded to the advertisement were screened for eligibility (heterosexual and over the age of 18), and were given details about the experiment. Callers who agreed to participate visited the laboratory individually and provided signed consent. They were shown the subject-room, given instructions on how to apply the strain gauge, and assured their privacy.

The order of stimulus presentation was predetermined using a random number generator. For Study 1, each image was shown for 40 seconds. Peak penile change in millimeters during stimulus onset to 20 seconds after stimulus offset was recorded. For Study 2, peak penile change in millimeters was recorded for the duration of the story and for 20 seconds after the story ended. Subsequent trials resumed when participant returned to baseline. Upon completion of Study 2, participants filled out a demographic questionnaire, and were then debriefed. The entire procedure for Studies 1 and 2 took approximately 2 hours to complete.

Treatment of the Data

In Study 1 we followed Lalumière and Harris's (1998) recommendations for using phallometric data. Peak change in millimeters was transformed into z-scores for each participant to eliminate individual differences in responsivity. That is, the transformation resulted in all

participants having the same mean arousal and standard deviation across all stimuli to adjust for variability between high and low responders. Category scores were calculated for each participant by taking the mean across four stimulus sets for each male to female ratio category. We also created mean scores for each sperm competition and harem fantasy category (Figure 1).

Similar procedures were used for the stimuli used in Study 2. Peak change in millimeters was transformed into z-scores for each participant, and category scores were calculated by averaging the peak z-score across three stimulus, creating scores for neutral, consenting sex, infidelity, rape, and aggression categories. An infidelity index was calculated by subtracting the consenting sex score from the infidelity score. Values greater than 0 indicate a sexual preference for stories depicting partner infidelity whereas scores less than 0 indicate a preference for consensual sex.

6.4 Results

Study 1

Sexual arousal score varied significantly across neutral, sperm competition, and non-sperm competition categories, repeated measures ANOVA Wilks' Lambda = .41, $F(2, 27) =$ 19.65, $p < .001$. Men's sexual arousal was highest to images that depict sperm competition ($n = 29$, $M = .17$, $SD = .28$), significantly higher than to non-sperm competition ($M = -.001$, $SD = .17$), $p = .05$, and neutral ($M = -.49$, $SD = .42$), $p < .001$, categories (Figure 2a.).

Upon closer inspection of the data, however, this result appears to be driven by men's interest in viewing nude women, not by sperm competition cues. A significant main effect was found using repeated measures ANOVA to compare neutral, men only, women only, and mixed categories. Men did not prefer mixed images that signaled sperm competition ($M = .17$, $SD = .28$) over images that contained only women ($M = .34$, $SD = .46$), $p = .13$, although both groups were

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significantly higher than men only ($M =$ -.34, $SD = .41$) and neutral stimuli ($M = -.49$, $SD = .42$), ps $< .001$ (Figure 2b.).

More precise comparisons are between images that have the same number of nude people. We found that images of two women and one man ($M = .35$, $SD = .52$) was significantly higher than images of two men and one woman ($M = .25$, $SD = .48$), $p < .001$. Likewise, we found that images of two women ($M = .43$, $SD = .59$) were significantly higher than images of a man and a woman ($M = -.11$, $SD = .31$), $p = .001$, and of two men ($M = -.31$, $SD = .48$), $p < .001$ (Figure 2c.). These results indicate sexual arousal is positively related to the number of women and negatively related to the number of men portrayed in multi-person images.

Study 2

A repeated measures ANOVA found a significant main effect of story category on sexual arousal, Wilks' Lambda $= .09$, $F(4, 26) = 69.51$, $p < .001$. Men showed as much arousal to stories of infidelity ($n = 30$, $M = .76$, $SD = .62$), as they did to stories of consenting sex ($M = .57$, $SD = .58$), $p = .47$. Responses to these categories were significantly higher than responses to rape ($M = -.05$, $SD = .47$), aggression ($M = -.62$, $SD = .39$), and neutral ($M = -.66$, $SD = .24$) stories (Figure 3a.), ps $< .002$ (See Appendix C for comparisons using raw data. Contact author for all other raw data comparisons).

After running a followup analysis with men who were in a relationship ($n = 19$), we found a similar main effect, Wilks' Lambda $= .08$, $F(4, 15) = 42.76$, $p < .001$. Interestingly, a directional test found that men who were in a relationship showed higher sexual arousal to stories of infidelity ($M = .90$, $SD = .64$) than to stories of consenting sex ($M = .50$, $SD = .58$), $p = .04$. In conjunction with finding higher responses to infidelity than rape ($M = -.11$, $SD = .46$), aggression ($M = -.62$, $SD = .46$), and neutral stories ($M = -.68$, $SD = .27$), ps $< .001$ (Figure 3b.), these results provide initial support for the hypothesis that if cuckoldry risk is related to partner rape, men should exhibit sexual arousal to such scenarios. Comparison between men who were and were not

in relationships on infidelity index scores (i.e., mean infidelity score minus mean consenting sex score—scores greater than 0 indicate a preference for stories of infidelity), confirms that men in relationships ($n = 19$, $M = .40$, $SD = .96$) have a stronger preference for stories of infidelity than men who are not in relationships ($n = 11$, $M = -.15$, $SD = .71$), $p = .04$ (1-tailed).

6.5 Discussion

Our results contrast with previous findings that men prefer images that signal sperm competition and produce more motile sperm when viewing them (Kilgallon & Simmons, 2005; Pound, 2002). By varying the proportion of males to females, and controlling for image attractiveness, quality, acts portrayed, and viewing time, we were able to falsify the hypothesis that men have a sexual preference for sperm competition cues over harem fantasy cues. It is plausible, as Pound contended, that men find sperm competition cues as arousing as "harem fantasies" because both scenarios should elicit sexual arousal for different reasons. Although we initially showed no difference in sexual arousal to mixed and females only, our data when comparing within the number of nudes in an image, suggests that for multi-person images, male sexual arousal is positively related to the number women and negatively related to the number of men.

Finding a sexual interest in "harem fantasies" is certainly not limited to our study. For example, the Coolidge effect—renewed sexual interest among males with partner variety—has been well-documented (Dewsbury, 1981). Tests of the Coolidge effect among humans in its strong form would require presenting novel partners to males after copulation, however, use of other more feasible paradigms have shown indirect support for this effect. For example, a few studies have shown penile responses habituate over repeated presentations to the same nude stimuli whereas varying stimuli does not show such habituation, and in some cases increases in arousal were found (reviewed in Lalumière & Quinsey, 1998). Men also have a preference for sexual variety, as evidenced from cross cultural research (Schmitt et al., 2003). Our paradigm

signaled sperm competition by presenting novel "partners" simultaneously. Greater sexual arousal to these images may therefore be related to this preference for partner variety.

There are a few reasons why our results differed from earlier work on human sperm competition. The first is that our sample was recruited from the local community whereas Pound's study advertised on sex newsgroups. There may be something different about the sexual preferences of men who spend time on pornographic websites and are active on sexual newsgroups. Also, measuring penile tumescence is a more direct way of measuring arousal rather than assuming arousal from image quantity on the internet, and our study ensured all participants were heterosexual men. There may be alternative factors that influence the quantity of images that depict multiple males with one female. For example, the abundance of male participants for pornography and much more difficult task of recruiting attractive women may have inadvertently led to greater production of such images. We know that women are paid more for the same sexual activity than men[15], and therefore assume this discrepancy in pay is to compensate for the discrepancy in interest.

Unlike Kilgallon and Simmons' study, our study had the benefit of a within-subjects design while controlling for aspects of the stimuli that might have led to higher arousal between groups that is unrelated to sperm competition. Measuring motile sperm after viewing stimulus sets used in our study is an alternative and more controlled way of testing their hypothesis to ensure responses are due solely to variability in the ratio.

There was the possibility of adding more ratio categories (e.g. 3 women, 3 men, 4 nudes, etc.), but they would have added substantial time to an assessment that was already nearly 2 hours long. Increasing the number of women can only increase arousal to a certain point. Also, mathematical models have shown that sperm number should increase in the presence of up to 2 competitors, then reduced with each additional competitor (Wedell, Gage, & Parker, 2002).

Testing this model with humans using phallometric methods would be an interesting extension of this research.

A limitation of our first study regards its ecological validity. The number of controls we used in the development of our stimuli results in images that do not depict sexual acts taking place. Perhaps it is the act of multiple male with one female intercourse that is a more direct cue to sperm competition, and using such pictures may provide greater insight into sexual responses to sperm competition. Using such stimuli is an important extension of this research, but it should be noted that enhanced ecological validity in this case comes at a cost, because it is difficult to control for actions, attractiveness of all persons, and amount of nudity. Using methodologically sound means of selecting such stimuli, generating a very large pool of images, and using multiple images per category is a way to overcome some of these issues. Until then, our data suggest the relationship between sperm competition and male sexual arousal is better understood in the context of cuckoldry risk.

Whereas signaling sperm competition can involve multiple mating by short- and long-term mates, cuckoldry risk involves multiple mating of a long-term sexual partner. The costs associated with multiple-mating from a long-term partner are different because of the costs associated with providing resources to non-kin, resulting in the evolution of anti-cuckoldry tactics (Platek & Shackelford, 2006). Sexual arousal is an important mechanism through which behavioral adaptations to cuckoldry risk can be employed. For example, as we noted earlier, sexual coercion in relationships has been implicated as an anti-cuckoldry tactic that functions to increase fitness by engaging in sperm competition. Our results satisfy the necessary condition that cues to cuckoldry risk results in sexual arousal in men. All participants showed as much arousal to stories of infidelity as they did to stories of consenting sex, and men in relationships showed a stronger sexual preference for stories of infidelity than men who were not in relationships.

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[15] http://www.teamtushy.com/tips-how2/Infront%20of%20camera/index.html

This latter finding of a difference between men in relationships and men who are not, suggests sexual response to cuckoldry risk is a facultative mechanism. Being in a relationship sensitizes men to situations that indicate partner infidelity. This result is consistent with other facultative responses to sperm competition, such as greater self-reported propensity for partner sexual coercion only when cues to infidelity were experienced more recently (Camilleri & Quinsey, submitted).

An alternative explanation for arousal to infidelity is sexual novelty. We can rule out sexual novelty for four reasons. First, Freund, Scher, and Hucker (1983), using penile plethysmography, found higher sexual arousal to stories depicting intercourse than to stories depicting 'novel' sexual scenarios, including toucheurism, voyeurism, and exhibitionism. Additional studies that include third-person stories of sexual infidelity (i.e., effectively voyeuristic), however, may be used as an important control. Second, participants in our study who were in a relationship showed greater preference for stories depicting infidelity than men who were not. If novelty explains higher arousal, infidelity should be novel to both single men and men in relationships. One could argue that stories depicting infidelity should be more of a novelty among single men since they are less likely to think about those situations. Third, our study included a condition of sexual novelty that should not produce greater sexual arousal than that to consenting sex—rape. As expected, and consistent with past research (Lalumière & Quinsey, 1994), we showed that men prefer consenting sex stories to stories depicting rape. Although men show some arousal, due to the sexual content, the violence likely suppressed full arousal. Lastly, infidelity is not a type of novelty that most men desire. In fact, common knowledge and research on sexual jealousy tells us this scenario is something men take exception to (Daly, Wilson, & Weghorst, 1982). The fact that infidelity did not suppress arousal to the sexual content tells us that men, although averse to cuckoldry risk situations, are not sexually inhibited by such aversiveness.

The difference between sperm competition intensity (i.e., number of ejaculates a male competes with) and sperm competition risk (i.e., probability of competing with another male's ejaculate) (Wedell et al., 2002) might explain the discrepancy between results found in Study 1 and Study 2. Varying the proportion of males to females is a better test of sperm competition intensity on male sexual arousal than it is for risk. Alternatively, cuing partner infidelity is a better test of sperm competition risk. Thus, finding no relationship between arousal and intensity, and a relationship between arousal and risk, is consistent with our knowledge of human mating. There is some indication that extra-pair copulations within a fertile cycle are typically limited to two males (e.g., Johnson et al., 2001). This modest degree of sperm competition intensity might not have been strong enough for the selection of adaptations to respond to variation of intensity within species. However, as we described earlier, cuckoldry risk (i.e., sperm competition risk where pair-bonds are formed) was likely a recurrent ancestral problem that led to the evolution of anti-cuckoldry tactics that respond to variations in risk—sexual arousal in response to this risk serves as a proximate mechanism through which men can engage in sperm competition.

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Figure Captions

Figure 6-1. Diagram of image stimulus categories and corresponding hypothesis tests.

Figure 6-2. a. SE bars for neutral, sperm competition, and non-sperm competition categories on mean z-score arousal. b. SE bars for neutral, male only, female only, and mixed categories. c. SE bars for all male (m) to female (f) ratio categories.

Figure 6-3. a. SE bars for neutral, aggression, rape, consenting sex, and infidelity categories on mean z-score arousal. b. SE bars for men in relationships and single men on infidelity index scores.

Sperm competition hypothesis	Male to female ratio	"Harem fantasies" hypothesis
No sperm competition (low arousal)		Male only (low arousal)
		Female only (high arousal)
Sperm competition (high arousal)		Mixed (moderate arousal)
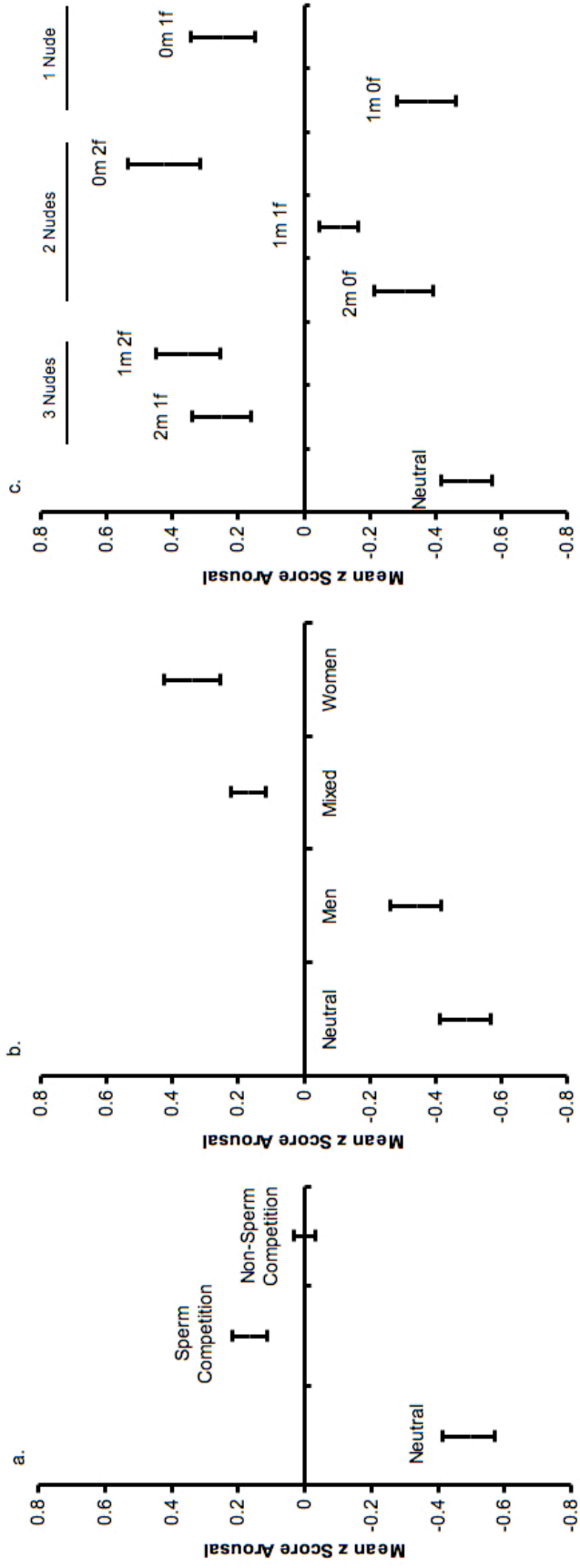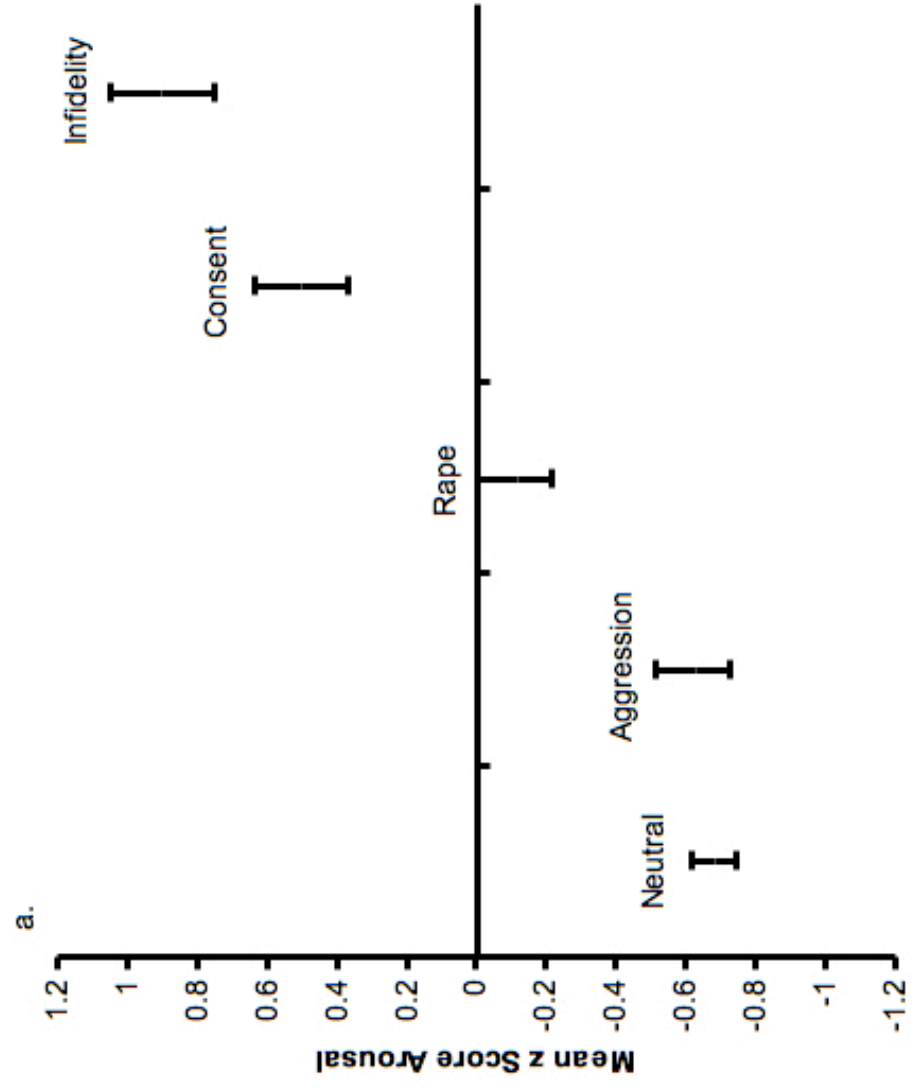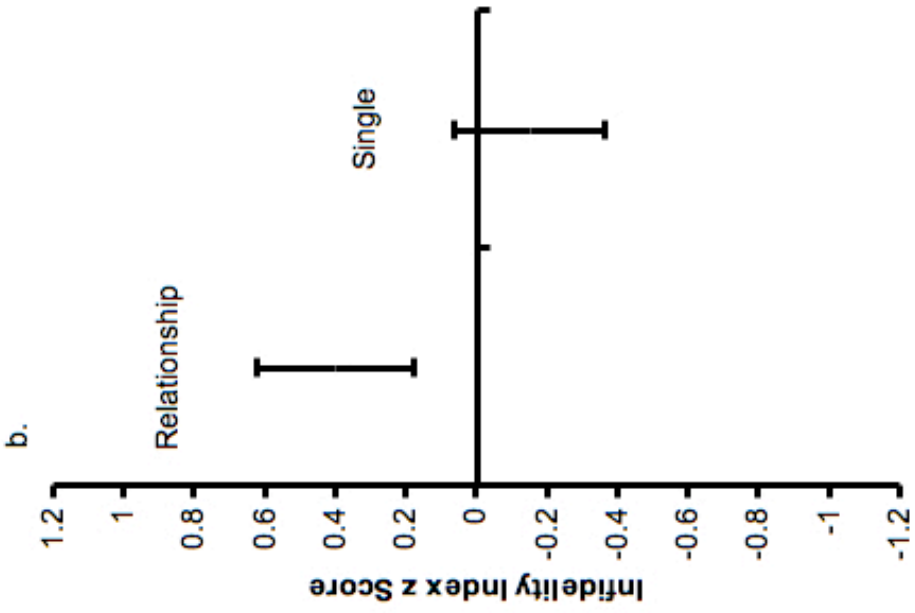
6.7 Appendix C
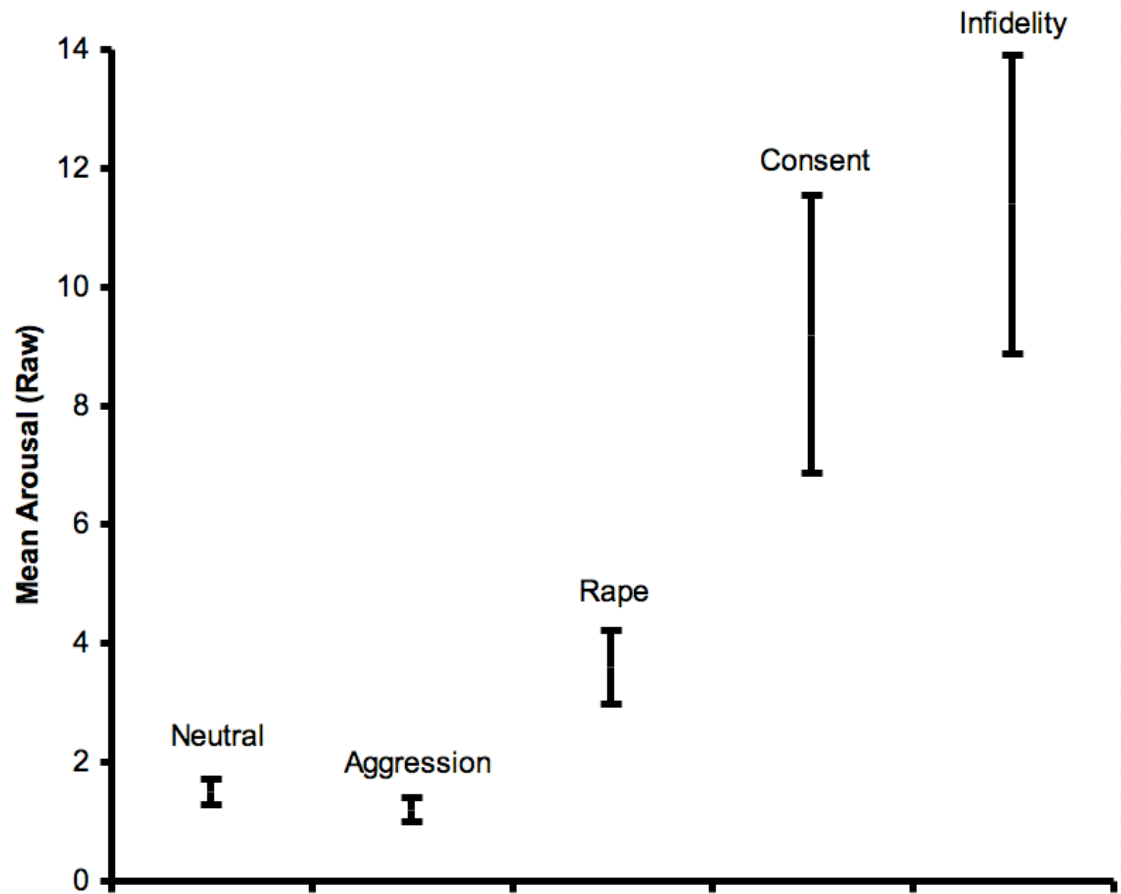
Chapter 7
General Discussion

7.1 Theoretical Advancements

Results from my dissertation have several theoretical implications concerning the differences and similarities between sexual coaxing and sexual coercion, why psychopathy is related to sexual offending in relationships, and the function of sexual coercion as a response to cuckoldry risk.

7.1.1 Sexual Coercion and Sexual Coaxing

In Chapter 2, I explored the psychometric differences between sexual coaxing and sexual coercion. From these scale development studies, it appeared as though despite their correlation, coaxing and coercion represented mutually exclusive constructs. Although both types of tactics are used to circumvent a partner's sexual choice, there are situations and characteristics of individuals that predict when either strategy is more likely.

Situations

In a community sample, I found that men were more willing to endorse sexually coercive tactics when faced with recent and direct cuckoldry risk events, and more willing to endorse sexually coaxing acts when faced with recent indirect cuckoldry risk events. Finding such results among community/student samples suggest these relationships exist among men who are not psychopathic or antisocial, and that cuckoldry risk alone is enough to elicit sexually coercive behaviours. Initial evidence from a forensic sample also lends support to the influence of cuckoldry risk. After combining data sets with partner rapists who had both a crime synopsis and psychopathy score ($N = 16$), I found that 81.8% of nonpsychopathic partner rapists ($n = 11$) experienced cuckoldry risk, whereas 20% of psychopathic partner rapists ($n = 5$) experienced

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cuckoldry risk. I am cautious in interpreting this result due to the small sample, but considering partner rapists had a less extensive criminal history and were less likely to recidivate than rapists, and that neither age nor competitive disadvantage characterized these men, there is a possibility that cuckoldry risk alone is a significant contributor to partner sexual coercion.

So why would men who are not antisocial use sexual coercion with their romantic partner instead of sexual coaxing? One possibility is the frequency of sexual refusal from their partners. Also, as I discussed in Chapter 4, there are costs associated with engaging in sexual coercion, so this tactic ought to be used when cuckoldry risk is high and coaxing is thwarted. Consistent with this notion, is evidence that women might avoid intercourse with their partner after an extra-pair copulation takes place, and that sexual jealousy alone motivates very extreme proprietary behaviours among men (Daly & Wilson, 1988b; Wilson & Daly, 1992). I also observed in a community sample, that men in relationships exhibited greater sexual arousal to stories of infidelity—a necessary condition for sexual coercion under these circumstances.

Variance in the propensity to use coercion and coaxing in response to situational cues is not limited to cuckoldry risk situations. We saw that an interest in sexual coaxing was greatest in younger people who were in dating and cohabiting relationships. Other situations that might influence the propensity to use either tactic include health, stress, and fatigue. These variables could also be tested as moderators of the relationship between cuckoldry risk and tactics to obtain sex, because sexual refusal in these cases is due to something other than infidelity.

Individuals

I did not explore the personality characteristics of men who were likely to use sexual coaxing behaviours because the focus of my dissertation was to understand sexual coercion. I expect that subsequent research will find that characteristics related to sexual desire, such as

mating effort and hypersexuality, covary with sexual coaxing in a manner similar to what was found in my scale development study.

A greater propensity for partner sexual coercion was related to individual differences in attitudes towards sexual aggression, and more importantly, psychopathy. As expected, the relationship between psychopathy and partner sexual coercion was stronger than its relationship with partner sexual coaxing. The finding that more psychopathic men endorsed more forceful behaviours when hypothetically facing sexual reluctance from a partner is consistent with evidence showing that psychopathic characteristics are related to greater victim injury (e.g., Vitacco, Caldwell, Van Rybroek, & Gabel, 2007)[16].

7.1.2 Psychopaths in Relationships

Psychopaths are typically portrayed as transient and exploitative individuals. Psychopathic men, however, also have many short-term marital relationships. What we do not know is the extent to which their coercive and exploitive behaviour is directed towards these partners. Finding that a third of partner rapists in the forensic sample were psychopaths provides some indication that their sexually coercive acts are not limited to strangers but to their partners as well. The relationship between psychopathy and sexual aggression has been given quite a bit of attention (for reviews see Knight & Guay, 2006; Seto & Lalumière, 2000), but I address how the most common explanations of sexual aggression in general (including a by-product of antisociality, sexual deviance, or as part of an obligate sexual strategy) apply to partner sexual coercion.

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[16] The severity of sexual offending, however, typically escalates over repeated offenses until intercourse is achieved, and rarely leads to serious injury such as death (Harris, Rice, Hilton, Lalumière, & Quinsey, 2007; Lalumière, Harris, Quinsey, & Rice, 2005; Walker, 1997).

A common way to explain the relationship between psychopathy and sexual violence is that certain psychopathic characteristics, particularly the combination of sexual promiscuity, impulsivity, and lack of empathy, disinhibit men's response to sexual refusal and desensitizes them to the violence used to overcome it. Likewise, in relationships, psychopathic men may be unresponsive to their partner's wishes, even when their partner expresses obvious displeasure and distress. Also, psychopaths may narcissistically continue to assume sexual exclusivity from women who expressed intentions of leaving the relationship or have already left. This latter explanation also raises the question of whether psychopathy and cuckoldry risk interact to produce such behaviour. Although psychopaths and nonpsychopaths alike may be more willing to use coercive tactics as a final effort to copulate before losing a mating partner, being psychopathic might increase the probability the person will go through with the act.

Biastophilia, a sexual preference for scenarios depicting nonconsenting intercourse[17], has been described as a possible characteristic of psychopaths (Seto & Lalumière, 2000). Despite conflicting evidence on the relationship between a sexual preference for coercive sex and psychopathy (Firestone, Bradford, Greenberg, & Serran, 2000; Serin, Malcolm, & Khanna, 1994), there is ample evidence that men who are both sexually deviant and psychopathic are most likely to commit a subsequent violent offense, implying that such risks to partners of psychopaths should also be determined (Harris et al., 2003; Olver & Wong, 2006; Rice & Harris, 1997; Serin, Mailloux, & Malcolm, 2001). My results indicate that although partner rapists as a group had significantly lower sexual arousal for coercive sex than rapists, 40% still preferred rape scenarios over stories about consenting sex. It is therefore possible that sexual deviance and psychopathy contributes to more violent partner sexual coercion, and such offenders are likely at the highest risk of committing another violent offense.

There have been suggestions that sexually coercive behavior is a defining feature of psychopathy (Harris et al., 2007). That is, psychopaths are a discrete natural class for which sexual aggression is part of an obligate sexual strategy. If true, then psychopathic men are coercive in any sexual context, including relationships. A way to test this hypothesis is to see if psychopaths who offend against their partner have sexual offenses against acquaintances and strangers as well. Such a finding would also support the hypothesis that psychopathy and cuckoldry risk represent mutually exclusive etiologies. Unfortunately, the relationship to past victims was not available in my data, so additional research is needed to test this hypothesis.

The courtship behaviours of psychopaths are unstudied, though finding a significant relationship between psychopathy and sexual coaxing suggests psychopaths are willing to use any tactic to obtain sex from a romantic partner. It is likely that psychopaths are adept at sexual coaxing because manipulation, lying, promiscuity, and many short-term marital relationships are defining characteristics of these men. Coerciveness may therefore arise when the partner's disinterest in the relationship manifests itself. In some ways, use of coercion under this context may also be guided by cuckoldry risk, but more rigorous research on the interaction between these two routes remains to be tested.

7.1.3 Sexual Conflict and Cuckoldry Risk

I took a top-down theoretical approach in my thesis by using a theory about sexual conflict to explain sexual coercion in relationships. The cuckoldry risk hypothesis was derived from sperm competition theory—I hypothesized that partner sexual coercion stemmed from both intersexual conflict due to female resistance, and from intrasexual conflict due to cuckoldry risk. Studying sexual offending in relationships can also inform theory. Other researchers, for

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[17] This differs from sadism, which is a sexual interest in humiliation, pain, suffering, and victim injury.

example, have studied antisocial behaviour to understand different types of conflict, such as the use of homicide to assay spousal and parent-offspring conflict (Daly & Wilson, 1988a). Studying the characteristics of sexual coercion in relationships—such as when it occurred and against whom—potentially provides us with more details about the type of conflict faced in our ancestral past that would result in the evolution of partner sexual coercion as a mating tactic. Some of these characteristics involve the type of risk and aspects of sexual refusal.

Sperm Competition and Cuckoldry Risk

My results have implications for conceptualizing and measuring risk. First, from the study on sexual arousal to sperm competition, I concluded that varying the proportion of nude males to females is a better signal of sperm competition intensity rather than sperm competition risk. Sperm competition intensity could only be a mechanism of competition if women have more than one extra-pair copulation during her fertile cycle. The human literature on infidelity suggests this may not be the case – researchers typically measure having a "secondary sexual partner", and report incidence or prevalence rates of infidelity (e.g., Blow & Hartnett, 2005; Forste & Tanfer, 1996), not the number of different partners within certain timeframes. I could not locate any studies to suggest women have concurrent extra-pair copulations (i.e., sex with at least two other men in addition to her partner within the same fertile cycle). This suggests sperm competition intensity in humans may not have posed a real threat to fitness. Cuckoldry risk, which is sperm competition where pair-bonds are formed, is therefore a more accurate way to describe sexual conflict that men likely would have faced in ancestral environments.

My results suggest direct and indirect cues to cuckoldry have different effects on sexual behaviour. In much of the psychological literature on human sperm competition, risk was evaluated indirectly by using the proportion of time since last copulation (e.g., Shackelford,

Goetz, McKibbin, & Starratt, 2007; Shackelford et al., 2002). By finding indirect risk was related to coaxing whereas direct risk (i.e., cues to infidelity) was related to coercion suggests the latter is required for more forceful tactics to be used. Similarly, indirectly signalling sperm competition by varying the proportion of males to females (i.e., cue the probability of multiple mateships) did not produce higher sexual arousal than non-sperm competition categories. Men in relationships exhibited highest sexual arousal when cues were direct (i.e., signalling to the participant that their partners were having intercourse with another man). The most important form of sperm competition from a reproductive point of view arises in situations where a man has invested in a relationship that has produced offspring, some of which may not be his, not in situations in which sperm competition arises from multiple males having sex with a woman in whom the focal man has not invested. Thus, to maximize the effects of cuckoldry risk I suggest using more direct, overt signals rather than indirect, covert signals and focusing on individuals in committed relationships.

Sexual Refusal

Cuckoldry risk alone is not sufficient for the production of partner sexual coercion. A comprehensive theoretical understanding of partner sexual coercion will need to incorporate women's sexual refusal in relationships, including its persistence, degree, and reasons why refusal is taking place. Results from the study on cuckoldry risk provide some evidence of higher refusal rates by women than men in relationships. Further research on sexual refusal with a partner after an EPC would help us understand the degree of sexual conflict, particularly because coaxing should suffice if refusal is not persistent. One way to study this topic is to vary the refusal rate in the TOSS scenario, to see if men under cuckoldry risk endorse more coercive tactics when greater degrees of refusal are reported. Alternatively, we could ask how often intercourse is refused in relationships—frequency of sexual coercion should correlate with refusal

rates. In forensic samples, the crime synopsis could be reviewed for refusal behaviours, and whether degree of force is related to degree of resistance.

Other Sources of Cuckoldry Risk

The cuckoldry risk hypothesis also predicts that men with characteristics that make cuckoldry more likely should exhibit a greater propensity for partner sexual coercion. A characteristic of "cuckoldable" men (Buss & Duntley, 2007) is competitive disadvantage—I hypothesized that these men are sexually coercive towards their partner because although they were successful in attaining a mate, their lower embodied capital reduces their capacity to retain mates. Although I found self-reported neurodevelopmental insults and IQ were unrelated to partner sexual coercion, there are many other measures of such disadvantage that remain to be tested, such as men's facial asymmetry (Gangestad, Thornhill, & Garver-Apgar, 2005). Other characteristics that increase the probability of infidelity, such as genetic similarity among couples (Garver-Apgar, Gangestad, Thornhill, Miller, & Olp, 2006), ovulation (Gangestad, Thornhill, & Garver, 2002; Pillsworth, Haselton, & Buss, 2004), and unrestricted sociosexuality among women (Barta & Kiene, 2005; Seal, Agostinelli, & Hannett, 1994). Although some conditions that increase the probability of infidelity, such as age of both men and women and relationship types, are unrelated to sexual coercion in relationships, static conditions might not predict when partner sexual coercion will occur but might increase the predictive accuracy of those who will sexually coerce a sexual partner when faced with recent and direct cues to infidelity.

7.1.4 Sexual Offenders or Domestic Abusers?

Partner rapists have some characteristics of sexual offenders, such as psychopathy, and some characteristics of partner assaulters, such as limited criminal history and older age, suggesting partner rapists are a heterogeneous group. That is, in some cases partner sexual

coercion is part of a "cuckoldry risk management system", where mate guarding and aggression are used to prevent cuckoldry, and sexual coercion is used to reduce risk once infidelity has occurred. In other cases, partner sexual coercion is part of an obligate strategy that involves exploiting others, including sexual exploitation of mates. Further research with larger and more varied samples would further our understanding of partner rape heterogeneity.

7.2 Practical Advancements

There are several practical implications from my thesis. First, the Tactics to Obtain Sex Scale, by assessing a person's current propensity for sexual coercion and sexual coaxing, provides researchers with a tool to determine the causes of such behavior because of its sensitivity to change over time and conditions, and allows clinicians to track changes in relevant cognitions. Second, in correctional settings, partner rapists should not be assigned to either sex offender or partner assaulter groups because their profiles indicate heterogeneity. Rather, treatment approaches should be tailored towards the individual's specific criminogenic needs. Particular attention should be paid to psychopathic partner offenders because of their dangerousness and poor prognosis for treatment. Third, the finding that time moderates the relationship between cuckoldry risk and sexual coercion has implications for the development of dynamic risk assessment procedures. Front line workers, for example, may be able to determine imminent risk of unwanted sex when initial signs of conflict are reported. Lastly, use of phallometric technology has typically been used in criminal justice settings to assess paraphilic sexual interests and to determine risk of reoffending. I provide further evidence that phallometric assessments can also be used in academic settings for the purpose hypothesis testing.

7.3 Limitations and Future Research

Although I addressed specific limitations to each study, there are some general limitations to this thesis. Taking a multi-method multi-trait approach to understanding the causes of partner sexual coercion came at cost of concentrating on one particular cause or research question. Although questions were answered about various psychological constructs, additional questions remain about the influence of self-reported propensity of sexual coercion, psychopathy, cuckoldry risk, and competitive disadvantage on partner sexual coercion. For example, although the COERCE subscale was validated by postdicting sexually coercive behaviours in relationships, a better understanding of its prediction of imminent sexual coercion would be informative. Also, my sample of partner rapists was relatively small. It became apparent that finding a large number of partner rapists from a single forensic institution is unlikely, so further research may need to sample from multiple locations.

Throughout this thesis I highlighted several avenues of research that can extend this research. One particular test of the cuckoldry risk hypothesis not yet mentioned integrates methodologies I used in my studies on cuckoldry risk and phallometry. Knowing a strong correspondence exists between sexual preference for coercive sex and sexually coercive behaviours, testing the relationship between cuckoldry risk and sexual arousal to rape scenarios would provide a strong test of this hypothesis, especially if among community participants.

Longitudinal designs where both the members of the relationship are measured would be very informative. Use of such a design would allow testing the characteristics of the partner, changes in relationship characteristics over time, and resolution of sexual conflict.

7.4 Conclusion

In this thesis, I addressed the differences between sexual coaxing and coercion in relationships, identified individual differences in partner sexual coercion propensity, and tested the function of partner sexual coercion as a response to cuckoldry by observing its proximate causes, particularly men's sensitivity to temporal and direct cues, and consequences, such as coercion propensity and sexual arousal. From these studies, psychopathy and cuckoldry risk emerged as important determinants of partner sexual coercion. With added controls, use of longitudinal studies, and sampling larger and more varied samples, the function of sexual coercion in relationships, either as reproductive behaviour or as a byproduct of antisociality, can be better understood and used to advance prevention strategies.

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