

## Original Article

### Competitive Disadvantage Makes Attitudes Towards Rape Less Negative

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**Abstract:** Evolutionary theorists have argued that perceived competitive disadvantage may lead to more positive evaluation of, and greater likelihood of engaging in, risky and antisocial behavior. However, experimental studies have not yet examined the effects of competitive disadvantage on perceptions of rape. In the current study, we created a manipulation of perceived competitive status to test its effects on beliefs about rape. In one condition, participants were made to feel disadvantaged relative to male peers in terms of financial, physical, and intellectual power, whereas in the other condition they were made to feel advantaged. Participants were 120 heterosexual male undergraduate students. The manipulation was effective; compared to participants in the advantage condition, those in the disadvantage condition rated themselves as significantly worse off financially, shorter, in worse physical shape, and as having lower course marks than the average male student at the university. Compared to perceived competitive advantage, perceived disadvantage led to less negative attitudes towards rape. However, perceived competitive status did not significantly affect justifications and excuses for rape. Future studies using similar experimental manipulations can complement correlational studies and may contribute to greater clarity, precision, and sophistication of research and theory on the role of competitive disadvantage in rape.

**Keywords:** competitive disadvantage, status, attitudes, rape, sexual coercion

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## Introduction

In ancestral environments, physically strong, intelligent men with access to resources would have been able to offer good genes and greater protection and support to mates and offspring and, thus, would have had a competitive advantage over other men with regards to the quality of potential sexual partners (Buss and Schmitt, 1993; Penke, Todd, Lenton, and Fasolo, 2008). Evolutionary theorists have argued that competitive disadvantage may lead to adoption of a life strategy characterized by discounting of long-

term consequences and gain and greater focus on short-term gains, which may in turn lead to short-term mating strategies and risky and aggressive behavior, including sexual coercion (e.g., Lalumière, Harris, Quinsey, and Rice, 2005; Mishra and Lalumière, 2008; Quinsey, Skilling, Lalumière, and Craig, 2004; Thornhill and Palmer, 2000; Wilson and Daly, 1997).

There is some correlational evidence suggesting a link between competitive status and perceptions of rape. A meta-analytic review found a small but significant association between lower socioeconomic status (SES) and greater endorsement of justifications and excuses for rape (average  $r = -.18$ , 95% CI [-.23, -.13],  $k = 3$ ; Anderson, Cooper, and Okamura, 1997). Lalumière and Quinsey (1996) found that lower SES was associated with greater endorsement of beliefs supportive of violence towards women, hostility towards women, and sexual coercion.

Numerous theories and models of sex offending assert that attitudes towards a behavior mediate the likelihood of engaging in that behavior (e.g., hierarchical-mediational confluence model [HCM; Malamuth, 2003], integrated theory of the etiology of sexual offending [Marshall and Barbaree, 1990], structured risk assessment model [Thornton, 2002], judgment model of cognitive distortions [JMCD; Ward, Gannon, and Keown, 2006]). This is also the case for nonsexual aggression (e.g., general aggression model [GAM; Anderson and Bushman, 2002], social learning theory [Bandura, 1973]), general crime (e.g., personal, interpersonal, and community-reinforcement [PIC-R] model [Andrews and Bonta, 2006]), and general behavior (e.g., theory of reasoned action [Ajzen and Fishbein, 1980, 2005], theory of planned behavior [Ajzen, 1991, 2001]). Although the influence of attitudes on general behavior is moderated by a number of variables, such as the accessibility and stability of the attitude (Glasman and Albarracín, 2006; Kraus, 1995), the relationship between attitudes and behavior can be strong. Meta-analyses have revealed medium ( $r = .38$ ,  $k = 88$ ; Kraus, 1995) to large ( $r = .52$  (95% CI [.49, .54],  $n = 4,598$ ; Glasman and Albarracín, 2006) average correlations between attitudes and subsequent behavior.

Focusing specifically on rape, there is some evidence that rapists endorse excuses and justifications for rape more than men who have not committed rape (Bumby, 1996; DeGue, DeLillo, and Scalora, 2010; Murnen, Wright, and Kaluzny, 2002). Researchers have also found that greater self-reported likelihood to rape is associated with more positive attitudes towards rape and more positive outcome expectancies for rape (Bouffard, 2002; Nunes, Hermann, and Ratcliffe, 2011). Taken together the available research indicates that attitudes, expected costs and benefits, and more general cognitions about rape are associated with sexual aggression. Consistent with the empirical evidence and theory, the focus on offence-supportive cognitions in sex offender risk assessment (Olver, Wong, Nicholaichuk, and Gordon, 2007) and treatment (McGrath, Cumming, Burchard, Zeoli, and Ellerby, 2010) clearly indicates that they are widely thought to be important determinants of sexual aggression.

The effects of competitive disadvantage on cognitions about rape have not yet been examined in experimental studies. Experimental research examining more general risky behaviors has found that disadvantage (Mishra and Lalumière, 2011) and high need states (Mishra and Lalumière, 2010) lead to greater risk-taking. Similarly, shorter life expectancy

has been linked to aggressiveness in both experimental (Dunkel, Mathes, and Papini, 2010) and correlational (Wilson and Daly, 1997) research. Being at a competitive disadvantage in terms of genetic quality and power would greatly limit a man's ability to mate with desirable partners. He lacks the genetic quality for desirable women to find him of interest for short-term mating and he lacks the resources to make him attractive for long-term mating (e.g., Penke et al., 2008). The perception that one has reduced mate value due to competitive disadvantage may induce a state of high need, which may cast risky, antisocial, and, in particular, sexually coercive behavior in a more positive light – from a reproductive fitness perspective, what does he have to lose? The purpose of the current study is to experimentally manipulate competitive status to observe its effect on beliefs about rape. We hypothesized that perceived competitive disadvantage would lead to less negative attitudes towards rape and endorsement of more justifications and excuses for rape.

## **Materials and Methods**

### *Participants*

The final sample consisted of 120 heterosexual male undergraduate students at Carleton University who received course credit for their participation in this on-line survey study. Although 181 participants started the on-line survey (advantage  $n = 90$ , disadvantage  $n = 91$ ), 37 were excluded because they (a) did not respond to any questions ( $n = 15$ ), (b) did not consent to the use of their data after the deception was revealed ( $n = 1$ ), (c) were female ( $n = 4$ ), or (d) self-reported primary sexual attraction to men ( $n = 7$ ) or both men and women ( $n = 6$ ). Note that some participants met more than one of these exclusion criteria. Of the remaining 144 participants, 24 were excluded for missing data on any of the main measures.

All participants reported that they understood written English. Median age was 20 to 21 years old; the youngest age category was 17 and the oldest was 40 to 44. In terms of romantic relationship status, 61.7% were single, 29.2% were in a romantic relationship, 5.0% were living with a romantic partner, 4.2% were married, and none were separated or divorced. In light of their relevance to competitive status, data on access to resources, physical characteristics, and grades were also gathered. In terms of living arrangements, 7.6% were living alone, 42.4% with a parent or guardian, and 50.0% with a roommate. Approximately one third reported that they owned their own apartment or house (30.8%). Participants reported a median weekly income of \$1 to \$150 (ranged from \$0 to \$1,001 or more), median bank account balance of \$1,001 to \$1,500 (ranged from \$0 to \$20,001 or more), and median debt of \$1 to \$200 (ranged from \$0 to \$50,001 or more). One quarter (25.0%) owned their own vehicle, with a median cost of \$5,001 to \$10,000 (ranged from \$0 to \$70,001 or more). Median height was 5 foot 11 inches (ranged from 5 foot 2 inches to 6 foot 7 inches). In terms of physical shape, 54.2% reported an average/mixed build, 24.2% reported a muscular build, 6.7% reported being overweight/obese, and 15.0% reported being underweight/thin. Median overall grade point average (GPA) was B (ranged from A+ to D-) among those who knew their GPA; 25.0% did not know their GPA. This project was approved by the Carleton University Ethics Committee for Psychological Research.

### Measures

*Rape Semantic Differential Scale.* Rape was rated on six bipolar scales. Specifically, participants were presented with “Rape is” and selected a response on each 7-point scale ranging from -3 (e.g., *very negative*) to +3 (e.g., *very positive*), with zero being *neutral*. The bipolar anchors for the response scales were *very negative* to *very positive*, *extremely not fun* to *extremely fun*, *very bad* to *very good*, *very wrong* to *very right*, *very immoral* to *very moral*, and *very unenjoyable* to *very enjoyable*. The six scales were summed to compute a total score, which can range from -18 (indicating an extremely negative attitude towards rape) to +18 (indicating an extremely positive attitude towards rape). Internal consistency was high in the current study (Cronbach’s alpha = .83).

*Rape Outcome Expectancies (ROE) Scale.* The ROE Scale (Nunes et al., 2011) is designed to measure outcome expectancies for rape. Three self-generated outcomes of “forcing a woman to have sex with you” are rated on their perceived likelihood (“How likely is it that this outcome would happen?”) and evaluation (“How positive or negative would this outcome be for you if it did happen?”). Participants are asked to think of one possible outcome of sexual assault and then rate the perceived likelihood of that outcome on a 7-point scale ranging from 1 (*never happen*) to 7 (*guaranteed to happen*). They then rate the evaluation of that outcome on a 7-point scale ranging from -3 (*very negative*) to +3 (*very positive*); the midpoint on the scale is 0 (*neutral*). These likelihood and evaluation ratings are repeated for the second and third outcomes.

The measure produces two total scores: an evaluation score and an overall score. The *ROE Evaluation Scale* total score is computed by summing the evaluation ratings of the three outcomes. Total evaluation scores can range from -9 to +9, with higher values indicating a more positive evaluation of the outcomes of rape considered by the participant. The *ROE Scale* total score is computed by multiplying the likelihood rating by the evaluation rating for each outcome and summing the products across all three outcomes. ROE Scale scores can range from -63 (indicating an extremely negative attitude towards rape) to +63 (indicating an extremely positive attitude towards rape). We have found that higher scores on both the evaluation and overall ROE Scale are associated with higher self-reported likelihood to rape (Nunes et al., 2011).

*RAPE Scale.* The RAPE Scale (Bumby, 1996) is a self-report measure of justifications and excuses for rape. Thirty-six items are scored on a 4-point scale ranging from 1 (*strongly disagree*) to 4 (*strongly agree*). Total scores can range from 36 to 144, with higher scores reflecting stronger and/or more frequent endorsement of justifications and excuses for rape. Sample items are, “If a woman does not resist strongly to sexual advances, she is probably willing to have sex” and “I believe that, if a woman lets a man kiss her and touch her sexually, she should be willing to go all the way.” The scale has excellent internal consistency, test-retest reliability, and good construct validity (Arkowitz and Vess, 2003; Bumby, 1996). There is also good evidence for the construct validity of the RAPE scale. For example, it is correlated ( $r = .33$  to  $.50$ ) with other established measures of beliefs supportive of rape (Arkowitz and Vess, 2003; Bumby, 1996) and rapists score higher than non-sex offenders (Bumby, 1996). Internal consistency was high in the current study (Cronbach’s alpha = .93).

*Procedure*

All measures and materials were administered through an on-line survey (Survey Console). The materials were presented to all participants in the following order: 1) initial consent form; 2) several background questions about age, gender, financial status indicators, height, physical shape, and grades; 3) competitive status manipulation; 4) rape semantic differential scales; 5) ROE Scale, 6) RAPE Scale; 7) manipulation check questions; 8) revelation of deception; 9) final consent form; and 10) debriefing information.

We created the competitive status manipulation for the current study. Participants were pseudorandomly assigned to one condition, such that assignment to the advantage or disadvantage condition alternated between consecutive participants. For example, the first participant was assigned to the disadvantage condition, the second to the advantage condition, the third to the disadvantage condition, and so on. The following instructions were presented to all participants: "Please carefully read the following information from a recent survey of male students at Carleton University. You will be asked some questions about this information later." The *disadvantage* condition was designed to make one feel disadvantaged compared to male peers in terms of financial, physical, and intellectual power by presenting a fictional, exaggerated description of the typical male student at the university:

Most male students at Carleton University are doing well financially. The average male student earns over \$20,000 per year, has considerable savings, and is less than \$2,000 in debt. He owns his own car. He does not live with his parents but rather in his own apartment or house off-campus. He also owns nice clothing and the latest electronics (cell phone, laptop computer, iPod, etc.).

The average male Carleton student is also physically impressive. Most are in good shape compared to the national average, are athletic and muscular, and 5 foot 11 inches or taller.

Academically, the average male Carleton student is also excellent. The majority of male students get As in most of their courses.

The *advantage* condition was designed to make one feel advantaged compared to male peers in terms of financial, physical, and intellectual power by presenting a fictional, understated description of the typical male student at the university:

Most male students at Carleton University are not well off financially. The average male student earns under \$2,000 per year, has under \$50 in the bank, and is more than \$20,000 in debt. He does not own his own car and must use public transit. He lives with his parents. His clothing is cheap and out-of-style and he does not have up to date electronics (cell phone, laptop, iPod, etc.).

The average male Carleton student is also not very physically impressive. Most are out of shape, not athletic, and 5 foot 5 inches or shorter.

Academically, the average male Carleton student is struggling. The majority of male students get Ds in most of their courses.

*Manipulation Check.* To assess the effectiveness of the manipulation, participants were asked to rate themselves compared to the typical male Carleton University student described in the manipulation. Specifically, they rated their relative position on finances (1 [*much better*] to 5 [*much worse*]), height (1 [*much taller*] to 5 [*much shorter*]), physical shape (1 [*much better*] to 5 [*much worse*]), and course marks (1 [*much higher*] to 5 [*much lower*]).

## **Results**

### *Missing Values*

As noted in the Participants section, 24 participants had only partially complete data on the main measures (16.67%). More specifically, 7 participants were missing some or all items of the ROE Scale (and ROE Evaluation Scale), 4 were missing some or all items of the rape semantic differential scale, and 15 were missing some or all items of the Bumby Rape Scale. A series of *t* tests indicated that compared to those with complete data on the Bumby Rape Scale, those with missing data tended to have higher scores on the ROE Scale ( $p = .051$ ) and significantly higher scores on the rape semantic differential scale ( $p = .019$ ). Otherwise the participants with and without missing values on each measure did not differ significantly on the other main measures. Chi-square analyses indicated that the proportion of missing values for the main measures was not significantly different across experimental conditions.

### *Group comparisons*

Participants did not differ significantly between experimental conditions on age, romantic relationship status, earnings, savings, debt, vehicle ownership, vehicle cost, accommodations, home ownership, physical build, or course grades. However, despite pseudorandom assignment to condition, participants did differ on height: Those assigned to the advantage condition were significantly taller ( $Mdn = 5$  foot 11 inches) than those assigned to the disadvantage condition ( $Mdn = 5$  foot 10 inches). To address whether this height difference posed a threat to the internal validity of the study, we examined the correlations between height and the main variables. Height was not significantly correlated with any of the measures of beliefs about rape in either condition ( $r = -.05$  to  $.12$ ). Results were virtually identical with non-parametric correlations (Spearman's rho).

A series of *t* tests indicated the manipulation was effective. Specifically, compared to participants in the advantage condition, those in the disadvantage condition rated themselves worse off financially ( $Mdn = 3$  vs. 2), shorter ( $Mdn = 3$  vs. 2), in worse physical shape ( $Mdn = 3$  vs. 2), and as having lower course marks ( $Mdn = 4$  vs. 2) than the average male student at the university (all  $ps < .001$ ). Non-parametric tests (Mann-Whitney *U*) produced the same results.

Descriptive statistics on the main variables by experimental condition are presented in Table 1. Outlying scores were reduced to one point above the highest non-outlying value in their respective conditions on the rape semantic differential scale (2 extreme high scores in the advantage condition and 2 extreme high scores in the disadvantage condition), the ROE Evaluation Scale (1 extreme high score in the advantage condition and 2 extreme high

scores in the disadvantage condition), and the ROE Scale (1 extreme high score in the advantage condition and 3 extreme high scores in the disadvantage condition). There were no outlying values on the Bumby Rape Scale. To examine the magnitude of the differences between experimental conditions, Cohen's  $d$  was calculated for each comparison. By convention,  $d$  values of around 0.20, 0.50, and 0.80 are considered small, medium, and large effect sizes, respectively (Cohen, 1988). The 95% confidence interval around  $d$  was also reported to provide an indication of the range of values for  $d$  that would be expected in 95% of other samples from the same population. Statistical significance of  $d$  can be determined from the confidence interval. If the 95% confidence interval does not contain zero, the effect size is significantly different from zero ( $p < .05$ ).

As shown in Table 1, the disadvantage condition had less negative attitudes towards rape as measured by the rape semantic differential scale and the ROE Evaluation Scale (medium effect sizes). Although small effects in the same direction were found for the ROE Scale and the Bumby RAPE Scale, these differences were not statistically significant. We also computed the average effect size across all four dependent measures using Comprehensive Meta-Analysis (Biostat, 2006). The average effect size was 0.32, 95% CI (0.14, 0.50), indicating that, on average, participants in the disadvantage condition endorsed beliefs more supportive of rape. Correlations between the measures are shown in Table 2. All measures were moderately to strongly intercorrelated.

**Table 1.** Descriptive statistics and effect sizes (Cohen's  $d$ ) for comparisons of the experimental conditions

Scale	Advantage <sup>a</sup>			Disadvantage <sup>b</sup>			$d$	95% CI	
	$M$	$SD$	Mdn	$M$	$SD$	Mdn		lower	upper
Rape SD	-17.65	0.99	-18.00	-16.75	2.39	-18.00	0.48*	0.12	0.84
ROE Evaluation	-7.40	2.48	-9.00	-6.35	3.00	-8.00	0.38*	0.01	0.74
ROE Scale	-38.44	19.49	-45.00	-35.62	17.31	-37.00	0.15	-0.21	0.51
RAPE Scale	62.69	14.52	62.00	66.20	12.69	65.00	0.26	-0.10	0.62
Average effect size	-	-	-	-	-	-	0.32*	0.14	0.50

*Note.* Rape SD = summed semantic differential ratings of rape; ROE Evaluation = Evaluation of expected outcomes on the Rape Outcome Expectancies Scale; ROE Scale = Rape Outcome Expectancies Scale; RAPE Scale = Bumby RAPE Scale.

<sup>a</sup>  $n = 55$ .

<sup>b</sup>  $n = 65$ .

\*  $p < .05$ .

**Table 2.** Correlations between dependent variables

	1	2	3	4
1. Rape semantic differential	-			
2. ROE Evaluation	.28*	-		
3. ROE Scale	.31*	.76*	-	
4. RAPE Scale	.36*	.36*	.47*	-

*Note.*  $N = 120$ . ROE Scale = Rape Outcome Expectancies Scale; ROE Evaluation = Evaluation of expected outcomes on the ROE Scale; RAPE Scale = Bumby RAPE Scale.

\*  $p < .05$ .

## Discussion

We experimentally manipulated competitive status and found that, compared to perceived competitive advantage, perceived disadvantage led to less negative attitudes towards rape. However, contrary to our expectations, competitive disadvantage did not significantly affect justifications and excuses for rape as measured by the Rape Scale. The differences between groups were in the expected direction for all measures and the effect sizes were small to medium. The average effect size across all four measures was small but significant, indicating that participants in the disadvantage condition generally endorsed beliefs more supportive of rape than participants in the advantage condition.

Our findings are generally supportive of a causal link between competitive status and perceptions of sexual coercion. The results are consistent with past theory and research: Negative comparison with male peers should lower one's self-perceived mate value, which in turn would lead to increased focus on immediate gains rather than long-term benefits and consequences (Lalumière et al., 2005; Mishra and Lalumière, 2008, 2010, 2011; Penke et al., 2008). Thus, rape may seem less negative for competitively disadvantaged men because the alternative for them may be to not mate at all or mate only with less desirable females (Lalumière et al., 2005; Penke et al., 2008).

A number of limitations warrant caution in interpreting our findings. First, the absence of a control condition in which perceived status was not changed (i.e., a neutral condition) makes it difficult to determine whether the disadvantage condition made perceptions of rape more positive, the advantage condition made perceptions of rape more negative, or both. Second, because we attempted to manipulate several aspects of competitive status at once (resources, physical size and strength, and intelligence), it was not possible to isolate the aspects responsible for the observed effects. Third, the height in the disadvantage condition appeared to be too low given that our sample was taller than expected (median height was 5 foot 11 inches). Future research should include a control condition, isolate the different status indicators, and generally refine the status manipulation. In addition, it would be interesting to explore whether the perceived competitive status manipulation interacts with individual differences in perceived competitive status and history of sexual coercion.

The purpose of this study was to explore competitive disadvantage as an explanation for sexual coercion, but we did not examine potential mediating mechanisms of the relationship between perceived disadvantage and attitudes towards rape. For example, perceived competitive disadvantage may induce frustration (e.g., Dollard, Doob, Miller, Mowrer, and Sears, 1939), anticipatory narcissistic reactance (Baumeister, Catanese, and Wallace, 2002), low self-esteem (Kavanagh, Robins, and Ellis, 2010; Marshall, Anderson, and Champagne, 1997; Penke et al., 2008; Walker, 1999), or negative affect (Howells, Day, and Wright, 2004), which may in turn influence attitudes towards rape (Nunes, Malcom, and Pettersen, 2010). Future research should explore whether these and other potentially relevant factors mediate the effects of competitive disadvantage on attitudes towards rape. Future research should also attempt to replicate our current findings, extend them to other samples and other manipulations, and explore the effects of competitive disadvantage on sexually coercive behavior (e.g., self-reported likelihood to rape or analogue measures) and the extent to which attitudes towards rape mediate the relationship between disadvantage and behavior. Although the link between attitudes and behaviors was not examined in the current study, in previous research we have found significant correlations between self-reported likelihood to rape and some of the attitude measures examined in the current study (ROE Scale and ROE Evaluation Scale; Nunes et al., 2011). If our findings were replicated and extended to sexually aggressive behavior, this would suggest that facilitating increased relative status through legitimate means may be an effective intervention for many young men (e.g., Lalumière et al., 2005; Quinsey et al., 2004).

The current study contributes to the existing literature in two important ways. First, we focused specifically on attitudes towards rape defined as summary evaluations of rape (e.g., Ajzen, 2001; Eagly and Chaiken, 1993; Fazio, 2007) as well as the broader mix of cognitions (e.g., rape myths, cognitive distortions) that have typically been examined in the literature to date (e.g., Briere, Malamuth, and Check, 1985; Bumby, 1996; Burt, 1980; Feild, 1978; Larsen and Long, 1988; Payne, Lonsway, and Fitzgerald, 1999). Second, this is the first study that we know of to experimentally test the effects of perceived competitive disadvantage on beliefs about rape. We designed a brief, simple, and effective manipulation of competitive status and found that perceived disadvantage led to less negative attitudes towards rape. Future studies using this or similar experimental manipulations (e.g., Mishra and Lalumière, 2011) can complement correlational studies and may contribute to greater clarity, precision, and sophistication of research and theory on the role of competitive disadvantage in rape.

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## References

- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50, 179-211.
- Ajzen, I. (2001). Nature and operation of attitudes. *Annual Review of Psychology*, 52, 27-58.
- Ajzen, I., and Fishbein, M. (1980). *Understanding attitudes and predicting social behavior*. Englewood Cliffs, NJ: Prentice Hall.
- Ajzen, I., and Fishbein, M. (2005). The influence of attitudes on behavior. In D. Albarracín, B. T. Johnson, and M. P. Zanna (Eds.), *The handbook of attitudes* (pp. 173-221). Mahwah, NJ: Lawrence Erlbaum Associates.
- Anderson, C. A., and Bushman, B. J. (2002). Human aggression. *Annual Review of Psychology*, 53, 27-51.
- Anderson, K. B., Cooper, H., and Okamura, L. (1997). Individual differences and attitudes toward rape: A meta-analytic review. *Personality and Social Psychology Bulletin*, 23, 295-315.
- Andrews, D. A., and Bonta, J. (2006). *The psychology of criminal conduct* (4<sup>th</sup> ed.). Cincinnati, OH: Anderson.
- Arkowitz, S., and Vess, J. (2003). An evaluation of the Bumby RAPE and MOLEST scales as measures of cognitive distortions with civilly committed sexual offenders. *Sexual Abuse: Journal of Research and Treatment*, 15, 237-249.
- Bandura, A. (1973). *Aggression: A social learning analysis*. Englewood Cliffs, NJ: Prentice-Hall.
- Baumeister, R. F., Catanese, K. R., and Wallace, H. R. (2002). Conquest by force: A narcissistic reactance theory of rape and sexual coercion. *Review of General Psychology*, 6, 92-135.
- Biostat (2006). *Comprehensive Meta-Analysis (Version 2)* [Computer Software]. Englewood, NJ: Biostat.
- Bouffard, J. A. (2002). The influence of emotion on rational decision making in sexual aggression. *Journal of Criminal Justice*, 30, 121-134.
- Briere, J., Malamuth, N., and Check, J. V. P. (1985). Sexuality and rape-supportive beliefs. *International Journal of Women's Studies*, 8, 398-403.
- Bumby, K. M. (1996). Assessing the cognitive distortions of child molesters and rapists: Developments and validation of the MOLEST and RAPE scales. *Sexual Abuse: A Journal of Research and Treatment*, 8, 37-54.
- Burt, M. R. (1980). Cultural myths and supports for rape. *Journal of Personality and Social Psychology*, 38, 217-230.
- Buss, D. M., and Schmitt, D. P. (1993). Sexual strategies theory: An evolutionary perspective on human mating. *Psychological Review*, 100, 204-232.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). New York: Academic Press.
- DeGue, S., DeLillo, D., and Scalora, M. (2010). Are all perpetrators alike? Comparing risk factors for sexual coercion and aggression. *Sexual Abuse: A Journal of Research and Treatment*. Advance online publication.

- Dollard, J., Doob, L., Miller, N., Mowrer, O., and Sears, R. (1939). *Frustration and aggression*. New Haven, CT: Yale University.
- Dunkel, C. S., Mathes, E., and Papini, D. R. (2011). The effect of life expectancy on aggression and generativity: A life history perspective. *Evolutionary Psychology*, 8, 492-505.
- Eagly, A. H., and Chaiken, S. (1993). *The psychology of attitudes*. Fort Worth, TX: Harcourt Brace Jovanovich.
- Fazio, R. H. (2007). Attitudes as object-evaluation associations of varying strength. *Social Cognition*, 25, 664-703.
- Feild, H. (1978). Attitudes toward rape: A comparative analysis of police, rapists, crisis counselors, and citizens. *Journal of Personality and Social Psychology*, 36, 156-179.
- Glasman, L., and Albarracín, D. (2006). Forming attitudes that predict future behavior: A meta-analysis of the attitude-behavior relation. *Psychological Bulletin*, 132, 778-822.
- Howells, K., Day, A., and Wright, S. (2004). Affect, emotions and sex offending. *Psychology, Crime and Law*, 10, 179-195.
- Kavanagh, P. S., Robins, S. C., and Ellis, B. J. (2010). The mating sociometer: A regulatory mechanism for mating aspirations. *Journal of Personality and Social Psychology*, 99, 120-132.
- Kraus, S. J. (1995). Attitudes and the prediction of behavior: A meta-analysis of the empirical literature. *Personality and Social Psychology Bulletin*, 21, 58-75.
- Lalumière, M. L., Harris, G. T., Quinsey, V. L., and Rice, M. E. (2005). *The causes of rape: Understanding individual differences in male propensity for sexual aggression*. Washington, DC: American Psychological Association.
- Lalumière, M. L., and Quinsey, V. L. (1996). Sexual deviance, antisociality, mating effort, and the use of sexually coercive behaviors. *Personality and Individual Differences*, 21, 33-48.
- Larsen, K. S., and Long, E. (1988). Attitudes toward rape. *Journal of Sex Research*, 24, 299-304.
- Malamuth, N. (2003). Criminal and non-criminal sexual aggressors: Integrating psychopathy in a hierarchical-mediational confluence model. In R. A. Prentky, E. Janus, and M. Seto (Eds.), *Understanding and managing sexually coercive behavior*. *Annals of the New York Academy of Sciences*, Vol. 989. (pp. 33-58). New York: New York Academy of Sciences.
- Marshall, W. L., Anderson, D., and Champagne, F. (1997). Self-esteem and its relationship to sexual offending. *Psychology, Crime, and Law*, 3, 161-186.
- Marshall, W. L., and Barbaree, H. E. (1990). An integrated theory of the etiology of sexual offending. In W. L. Marshall, D. R. Laws, and H. E. Barbaree (Eds.), *Handbook of sexual assault: Issues, theories, and treatment of the offender* (pp. 257-275). New York: Plenum.
- McGrath, R. J., Cumming, G. F., Burchard, B. L., Zeoli, S., and Ellerby, L. (2010). *Current practices and emerging trends in sexual abuser management: The Safer Society 2009 North American Survey*. Brandon, VT: Safer Society Press.

- Mishra, S., and Lalumière, M. L. (2008). Risk taking, antisocial behavior, and life histories. In J. Duntley and T. K. Shackelford (Eds.), *Evolutionary forensic psychology: Darwinian foundations of crime and law* (pp. 176-197). New York: Oxford University Press.
- Mishra, S., and Lalumière, M. L. (2010). You can't always get what you want: The motivational effect of need on risk-sensitive decision-making. *Journal of Experimental Social Psychology*, *46*, 605-611.
- Mishra, S., and Lalumière, M. L. (2011, June). *Mind the gap: Evidence that inequality causes risky behavior*. Poster presented at the 72<sup>nd</sup> Annual Canadian Psychology Association Convention, Toronto, Ontario.
- Murnen, S. K., Wright, C., and Kaluzny, G. (2002). If "boys will be boys," then girls will be victims: A meta-analytic review of the research that relates masculine ideology to sexual aggression. *Sex Roles*, *46*, 359-375.
- Nunes, K. L., Hermann, C., and Ratcliffe, K. (2011). *Implicit and explicit attitudes towards rape are associated with likelihood to rape*. Manuscript submitted for publication.
- Nunes, K. L., Malcom, J. R., and Pettersen, C. (2010, October). The effect of anger on implicit and explicit evaluation of rape. In K. L. Nunes (Chair), *Experimental and observational research on the role of implicit cognition in rape and child molestation*. Symposium conducted at the 29<sup>th</sup> Annual Research and Treatment Conference of the Association for the Treatment of Sexual Abusers, Phoenix, Arizona.
- Olver, M. E., Wong, S. C. P., Nicholaichuk, T., and Gordon, A. (2007). The validity and reliability of the Violence Risk Scale – Sexual Offender Version: Assessing sex offender risk and evaluating therapeutic change. *Psychological Assessment*, *19*, 318-329.
- Payne, D. L., Lonsway, K. A., and Fitzgerald, L. F. (1999). Rape myth acceptance: Exploration of its structure and its measurement using the Illinois Rape Myth Acceptance Scale. *Journal of Research in Personality*, *33*, 27-68.
- Penke, L., Todd, P. M., Lenton, A. P., and Fasolo, B. (2008). How self-assessments can guide human mating decisions. In G. Geher and G. F. Miller (Eds.), *Mating intelligence: Sex, relationships, and the mind's reproductive system* (pp. 37-76). New York: Taylor and Francis.
- Quinsey, V. L., Skilling, T. A., Lalumière, M. L., and Craig, W. (2004). *Juvenile delinquency: Understanding individual differences*. Washington, DC: American Psychological Association.
- Thornhill, R., and Palmer, C. T. (2000). *A natural history of rape: Biological bases of sexual coercion*. Cambridge, MA: MIT Press.
- Thornton, D. (2002). Constructing and testing a framework for dynamic risk assessment. *Sexual Abuse: A Journal of Research and Treatment*, *14*, 139-153.
- Walker, I. (1999). Effects of personal and group relative deprivation on personal and collective self-esteem. *Group Processes and Intergroup Relations*, *2*, 365-380.
- Ward, T., Gannon, T. A., and Keown, K. (2006). Beliefs, values, and actions: The judgment model of cognitive distortions in sexual offenders. *Aggression and Violent Behavior*, *11*, 323-340.

Wilson, M., and Daly, M. (1997). Life expectancy, economic inequality, homicide, and reproductive timing in Chicago neighbourhoods. *British Medical Journal*, 314, 1271.