

Development and Validation of the Attitude toward Sexual  
Aggression against Women (ASAW) Scale

by

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## **Abstract**

There is consensus in the social psychological literature that attitudes (i.e., positive or negative evaluations of a psychological object) can be important determinants of behaviour (e.g., Ajzen et al., 2018). To facilitate more rigorous research on the relationship between attitudes and sexually aggressive behaviour, the purpose of this thesis was to develop and validate a measure of attitudes toward sexual aggression, namely, the Attitude toward Sexual Aggression against Women (ASAW) scale. To develop the ASAW, a large pool of potential items designed to assess favourable or unfavourable evaluations of a wide range of sexually aggressive behaviours was administered to three independent samples of men from the community. Items were selected based on psychometric and structural analyses, with the primary objective of selecting non-redundant items with the highest response variance (to reduce floor effects). The resulting 13-item scale demonstrated excellent internal consistency and factor analyses suggested it is unidimensional.

To test the validity of the ASAW's scores, I conducted two separate studies. The first study provided preliminary evidence of discriminant and incremental validity. Factor analyses indicated that ASAW items were distinct from the items of three commonly used measures of offence-supportive cognition, and that the ASAW explained unique variance in sexually aggressive behaviour after accounting for these other measures. The second study consisted of an experimental test of construct validity based on following reasoning: if scores on the ASAW are sensitive to a well-established attitude-change manipulation (i.e., persuasive communication; Stiff & Mongeau, 2016), this would suggest that the ASAW is measuring attitudes toward the target of the manipulation.

Results of the randomized experiment were mixed, suggesting that scores on the ASAW tended to be sensitive to the attitude-change manipulation, but not significantly more so than a measure of a related but distinct construct (i.e., rape myth acceptance). Taken together, these studies provide preliminary evidence for the ASAW's validity, including structural, discriminant, incremental, and construct validity. If additional tests provide more conclusive evidence of construct validity, then the ASAW should be used in future research to examine the role that attitudes may play in the perpetration of sexual aggression against women.

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## Preface

This is an integrated thesis, meaning that the work undertaken is presented as a series of research papers. Specifically, the current thesis is composed of five chapters, including a literature review chapter, three research paper chapters, and a general discussion chapter. The three research paper chapters consist of manuscripts that have been prepared for publication. Note that the manuscripts have been modified to some extent to avoid repetition and improve information flow. This primarily involved removing background information that is covered in the literature review chapter from the Introduction sections of the research paper chapters. Additionally, common discussion points across research paper chapters are discussed in the general discussion chapter. Last, given that many of the references overlap across the literature review and research paper chapters, all the references are listed together at the end of the thesis.

Also note that, when referring to information presented in previous research paper chapters throughout the thesis, I cite the individual research papers<sup>1</sup> as follows:

Chapter 2: Pedneault, C., I., Nunes, K. L., & Hermann, C. A. (2021). *Attitude toward Sexual Aggression against Women (ASAW) scale: Development and structural validity* [Unpublished manuscript]. Department of Psychology, Carleton University.

Chapter 3: Pedneault, C., I. & Nunes, K. L. (2021). *Attitude toward Sexual Aggression against Women (ASAW) scale: Discriminant and incremental validity* [Unpublished manuscript]. Department of Psychology, Carleton University.

Chapter 4: Pedneault, C., I. & Nunes, K. L. (2021). *Attitude toward Sexual Aggression against Women (ASAW) scale: Initial test of construct validity* [Unpublished manuscript]. Department of Psychology, Carleton University.

Please use these references if you would like to cite the research papers in your own work.

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<sup>1</sup> Although the work is co-authored, Chloe I. Pedneault led every aspect of the research, such as preparing the study material, obtaining the data, analyzing the results, and writing the manuscripts. Co-authors contributed to the formulation of research questions and plans, and played a supporting role in the execution of the studies (e.g., provided input on the materials and methodology).

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## **Chapter 1: Literature Review**

Sexual violence against women is a global public health issue (e.g., World Health Organization [WHO], 2013). The WHO (2013) estimates that 36% of women (15 years and older) have experienced intimate partner violence or sexual violence by a non-partner. In Canada, an estimated 30% of women have been the victim of sexual assault at least once since the age of 15 (Cotter & Savage, 2019). Furthermore, national prevalence estimates in the United States suggest that upwards of 20% of women are victims of sexual assault in adulthood (Elliott et al., 2004; Fedina et al., 2018; Gidycz et al., 2008), and 20% experience completed or attempted rape at some point during their lifetime (Smith et al., 2018). Sexual assault can have short- and long-term impacts on women's physical and mental health, including anxiety, anger, depression, post-traumatic stress, and suicidal ideation (e.g., Choudhary et al., 2012; Cotter & Savage, 2019; Elliott et al., 2004; Resick, 1993; WHO, 2013). Moreover, sexual offences pose a substantial social and economic burden on society, including victims' families, friends, and communities (e.g., Hoddenbagh et al., 2014; Basile et al., 2016). Accordingly, addressing and preventing sexual violence against women is a priority for governments around the world (e.g., Smith et al., 2018; WHO, 2013; Women and Gender Equality Canada, 2019).

For the purpose of this thesis, sexual violence (hereafter referred to as sexual aggression) includes any form of nonconsensual sexual activity obtained via coercive tactics, including verbal coercion, physical force, and incapacitation via drugs, alcohol, or some other method (e.g., Bouffard & Goodson, 2017). Additionally, I will focus on sexual aggression as perpetrated by men given that men are overwhelmingly the perpetrators of sexual aggression against women (e.g., 95% of women reported that the

perpetrator was male; Cotter & Savage, 2019). As just reviewed, sexual aggression is common; however, most sexual assaults are not reported to police (e.g., Conroy & Cotter, 2017) and even fewer end with a conviction (Rotenberg, 2017). Therefore, few sexually aggressive men find themselves in the correctional system. Instead, research suggests that men from the general community likely represent the largest population of sexually aggressive individuals. When samples of North American men recruited from the community are surveyed, upwards of 40% report engaging in some form of sexual aggression, with approximately 5-10% reporting behaviour consistent with sexual assault (e.g., Abbey & Jacques-Tiura, 2011; Abbey et al., 2007; Hermann et al., 2018). Together, this suggests that interventions aimed at reducing sexually aggressive behaviour should include men from the general population.

To reduce sexual aggression against women, it is important to understand the factors that lead some men to engage in sexually aggressive behaviour. Drawing on social psychological theory and research, the attitude construct has likely received the most empirical attention relative to any other in explaining human behaviour (e.g., Ajzen et al., 2018; Albarracín & Shavitt, 2018). *Attitudes* are favourable or unfavorable evaluations of a psychological object, such as a person, thing, or behaviour (e.g., Ajzen, 1991; 2001; Eagly & Chaiken, 2007). Evidence suggest that they can be important determinants of behaviour in a variety of contexts (e.g., Ajzen et al., 2018; Kraus, 1995; Glasman & Albarracín, 2006), including in the public health domain (Sheeran et al., 2016).

Nonetheless, attitudes (at least as defined in the social psychological literature) have received little empirical attention within the context of sexually aggressive behaviour (Nunes et al., 2013, 2018). That is, until recently, few studies attempted to

measure favourable or unfavourable evaluations of sexually aggressive behaviour. However, preliminary research suggests that attitudes toward sexual aggression may be associated with, and predictive of, sexually aggressive behaviour against women (Hermann et al., 2018; Hermann & Nunes, 2018; Nunes et al., 2013, 2018; Pedneault, Hermann, & Nunes, 2020; Pedneault, Nunes et al., 2020). Furthermore, early evidence suggests that attitudes may be distinct from other offence-supportive cognitions (i.e., cognitions thought to be associated with sexual aggression; Nunes et al., 2018; Pedneault, Hermann, & Nunes, 2020). To facilitate more rigorous research on attitudes toward sexual aggression, a validated measure of attitudes toward sexually aggressive behaviour is required. The purpose of this thesis is to develop and validate a new measure of attitudes toward sexual aggression to support future research on the potential role of attitudes in the perpetration of sexually aggressive behaviour against women. The following sections provide an overview of the attitude construct, preliminary research on attitudes toward sexual aggression against women, and how attitudes fit within the broader correctional/forensic literature on offence-supportive cognitions.

## **1.1 Attitude – The Construct**

There is consensus in the social psychological literature that the defining feature of attitude is evaluation (e.g., Ajzen, 1991; 2001; Eagly & Chaiken, 1993; Fazio, 2007). According to Ajzen (2001), “attitude represents a summary evaluation of a psychological object captured in such attribute dimensions as good-bad, harmful-beneficial, pleasant-unpleasant, and likable-dislikable” (p. 28). Similarly, Eagly and Chaiken (1993) suggested that attitude is a “psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor” (p. 1). Fazio (2007) proposed that

attitudes are the association in memory between a psychological object and a summary evaluation of that object, concluding that “attitudes are defined as summary evaluations” (Fazio, 2007, p. 608).

It is worth mentioning here that the attitude construct can be divided into explicit and implicit attitudes (e.g., Gawronski & Bodenhausen, 2006). Explicit attitudes are consciously deliberated and are typically assessed using self-report measures that overtly ask respondents about their attitude. In contrast, implicit attitudes are automatically activated and are generally assessed indirectly using response latency measures (e.g., Implicit Association Test; Greenwald et al., 1998). This thesis focuses exclusively on explicit attitudes; therefore, moving forward, I will simply refer to them as attitudes. For research on implicit attitudes toward sexual aggression, see Hermann and Nunes (2018), Hermann et al. (2018), Nunes et al. (2013), and Widman and Olson (2013).

### **1.1.1 Measurement of Attitudes**

Attitudes are latent, meaning that they cannot be observed directly (Krosnick et al., 2018). Consequently, various attitude measures have been developed. Two of the most common methods for measuring attitudes include the summating rating scale (Likert, 1932) and the semantic differential scale (Osgood et al., 1957). Likert’s (1932) summated rating scale, more commonly known as the Likert scale, asks respondents to indicate the extent to which they agree or disagree with a set of statements on a 5-point scale. Although this type of scale is commonly used to assess a range of cognitions, it has become one of the most widely accepted methods for measuring attitudes. When a Likert scale is used to assess attitudes, each item should reflect a strongly favourable (e.g., I love sports) or strongly unfavourable (e.g., I hate sports) attitude toward a psychological

object. An attitude score is then computed by summing the ratings across statements. Notably, a Likert scale that is designed to assess attitudes should exclude any statements that are not clearly evaluative, such as factual statements (e.g., Soccer is a sport) or non-evaluative belief statements (e.g., People who play sports are physically active; Fishbein & Ajzen, 1975). That is, agreement or disagreement with non-evaluative statements would not be indicative of an attitude. This point will become important later when discussing measures of offence-supportive cognition.

Osgood and colleagues' (1957) semantic differential scale asks respondents to evaluate a psychological object (e.g., Sports) on a 7-point scale anchored with bipolar adjectives. Based on a series of factor analyses, Osgood et al. (1957) identified bipolar adjective pairs that consistently loaded highly on an evaluative factor, suggesting that those adjectives are highly evaluative. Notably, Osgood et al. (1957) identified adjective pairs that were "purely" evaluative (p. 36), defined as those for which the extracted variance was almost entirely explained by the evaluative factor (rather than activity and potency factors). Examples of purely evaluative scales include good – bad, beautiful – ugly, pleasant – unpleasant.

The most notable difference between the semantic differential and Likert scale methods is the response scale. That is, for the semantic differential scale, respondents are asked to evaluate a psychological object using a bipolar evaluative dimension; whereas, the Likert scale ask respondents to indicate their level of agreement or disagreement with evaluative statements. The latter requires more cognitive effort because respondents must first determine their evaluation of the psychological object and then translate this into the extent to which they agree or disagree with a given statement (Krosnick et al., 2018).

Furthermore, the semantic differential scale is better suited for measuring moderately strong or weak attitudes as the response scale includes the full evaluative dimension (e.g., extremely bad to extremely good; Krosnick et al., 2018). In contrast, interpreting Likert scale responses to moderately positive or negative evaluative statements can be ambiguous. For example, respondents with strong positive or negative attitudes toward sports could plausibly agree or disagree with the statement “I sort of like sports”. Indeed, evidence suggests that responses to scales that include the full evaluative dimension have higher reliability and validity (Krosnick et al., 2018). Nonetheless, Likert and semantic differential scales both continue to shape the measurement of attitudes.

### **1.1.2 Attitude-Behaviour Link**

The theory of planned behaviour (Ajzen, 1991) is one of the most influential social psychological models of human behaviour. It maintains that a person’s actions are determined by behavioural intentions, which are in turn influenced by their attitude toward the behaviour in question (i.e., positive or negative evaluations of the behaviour), subjective norms (i.e., perceived social pressure), and perceived behavioural control (i.e., perceived ability to act). Importantly, the theory of planned behaviour specifies that it is the attitude toward the *behaviour* that predicts intentions, not just any type of attitude relevant to the behaviour. In line with the expectancy-value model (Fishbein & Ajzen, 1975), the theory of planned behaviour posits that an attitude toward a given behaviour is a function of salient outcome expectancies. Outcome expectancies are the product of outcome evaluations (i.e., positive or negative) and perceived probabilities (i.e., likely or unlikely to occur). To illustrate, if a person believes there is a strong probability that they will be arrested if they steal from a store – and they evaluate being arrested negatively –

this would be expected to have a negative influence on their attitude toward shoplifting. Thus, the mechanisms underlying the attitude-behaviour relationship involve deliberative processing of outcome expectancies.

In contrast, the MODE (i.e., Motivation and Opportunity as DEterminants; Fazio, 1990) model specifies the conditions under which the attitude-behaviour relationship will be based on deliberative or spontaneous processes. Specifically, it suggests that individuals must (a) be motivated and (b) have the opportunity to undergo deliberative processing to retrieve a summary evaluation of the consequences of performing a behaviour. Therefore, attitudes and behaviour will be linked to the extent that individuals are motivated and have the opportunity to deliberate on their attitude toward the behaviour. Alternatively, when motivation and opportunity are low, spontaneously activated evaluations of the attitude object will guide one's behaviour without necessarily considering the consequences of that behaviour. In sum, the MODE model suggests that the attitude-behaviour link can result from relatively deliberative or spontaneous processes.

Meta-analyses have consistently found a moderate to large relationship between attitudes and behaviour. For instance, Kraus (1995) found that attitudes significantly predicted a wide range of behaviours (mean  $r = .38$ ,  $p < .001$ ,  $k = 88$ ), including prejudice, voting, and use of contraception (Kraus, 1995). In a separate meta-analysis, Glasman and Albarracín (2006) found that newly formed attitudes toward a fictitious psychological object were strongly associated with subsequent behaviour toward that object (weighted mean  $r = .51$ , 95% CI [.48, .54],  $k = 29$ ). Consistent with the theory of planned behaviour, a review of 18 meta-analyses in the public health domain found that

attitudes toward health-related behaviours were strongly associated with behavioural intentions (weighted mean  $r = .54$ ) and moderately associated with actual behaviour (weighted mean  $r = .33$ ; Sheeran et al., 2016). Furthermore, Sheeran and colleagues (2016) also conducted a meta-analysis of randomized control studies that successfully manipulated health-related attitudes to test their causal influence on subsequent intentions and behaviour. Consistent with a causal relationship, attitude change predicted small to moderate changes in intentions (weighted mean  $d = 0.48$ , 95% CI [0.39, 0.56],  $k = 59$ ) and behaviour (weighted mean  $d = 0.38$ , 95% CI [0.32, 0.45]),  $k = 67$ ). Taken together, theory and evidence suggest that attitudes can predict and explain behaviour.

### **1.1.2.1 Principle of Compatibility**

It is also important to note that meta-analyses have found substantial variability in the magnitude of the attitude-behaviour relationship across studies. Although a full review of the moderators of this relationship is beyond the scope of this thesis<sup>2</sup>, one of the most influential moderators of the attitude-behaviour relationship is the level of correspondence between the measures of attitude and behaviour (Ajzen et al., 2018). The principle of compatibility maintains that correlations between attitudes and behaviour will be higher when they specify the same target (e.g., woman), action (e.g., sexual assault), context (e.g., at a party), and time (e.g., this weekend; Ajzen & Fishbein, 1977). Some of these elements may be unspecified (e.g., a time is not specified), but the attitude and behaviour measures should correspond on both specified and unspecified elements.

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<sup>2</sup> See Ajzen et al., 2018 for a review of influential moderators. Important moderators include attitude strength, stability, and confidence. Degree of accessibility and personal relevance also moderate the attitude-behaviour relationship. Additionally, direct experience with the attitude object is associated with higher attitude-behaviour correlations.

Kraus (1995) meta-analyzed eight studies that experimentally manipulated attitude-behaviour correspondence. When comparing the highest and lowest levels of correspondence for each study, the magnitude of the attitude-behaviour relationship was significantly larger when correspondence was high (mean  $r = .54$ ) compared to low (mean  $r = .13$ ). Thus, attitude-behaviour correspondence is important to consider when selecting and developing an attitude measure with the goal of predicting and explaining behaviour.

## **1.2 Attitudes toward Sexually Aggressive Behaviour**

In the previous section, I reviewed the attitude construct from a social psychological perspective. According to this perspective, attitudes toward sexual aggression are favourable or unfavourable summary evaluations of sexually aggressive behaviour. As previously mentioned, this conceptualization of the attitude construct has received little empirical attention within the context of sexually aggressive behaviour. This may be because sexually aggressive behaviour has traditionally been the subject of correctional/forensic psychology rather than social psychology, which is consistent with the view of sexual aggression as a public safety (vs. public health) issue. Nonetheless, preliminary evidence suggests that attitudes toward sexual aggression may be associated with, and predictive of, sexually aggressive behaviour<sup>3</sup>. This research can be broken down by the measures used. Earlier studies examined rape outcome expectancies which, according to the expectancy-value model (Fishbein & Ajzen, 1975), are precursors to attitudes toward a behaviour. Although outcome expectancies are not direct indicators of

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<sup>3</sup> Studies have also examined the relationship between implicit attitudes and sexual aggression; however, their findings have been mixed (Hermann & Nunes 2018; Hermann et al., 2018; Nunes et al., 2013).

the attitude construct, they are reviewed here because this research represents the first application of social psychological attitude theory in the sexual aggression literature. More recently, measures have been developed to assess attitudes toward rape (i.e., Evaluation of Rape Scale; Nunes et al., 2018) and attitudes toward a range of sexually aggressive behaviours (Evaluation Sexual Experience Survey-Tactics First Revised [Evaluation SES-TFR]; Hermann et al., 2018).

### **1.2.1 Rape Outcome Expectancy Measures**

In line with the expectancy-value model mentioned earlier (Fishbein & Ajzen, 1975), O'Donohue and colleagues (1996) found that men who evaluated consequences of sexual aggression more favourably also reported significantly more past sexually aggressive behaviour ( $r = -.36$ ) and a greater likelihood of committing rape in the future ( $r = -.39$ ). Similarly, Bouffard (2002) found that male undergraduate students who rated negative outcomes of sexual aggression as less certain also reported a significantly higher likelihood of engaging in sexually aggressive behaviour in the future ( $r_{\text{certainty}} = -.25$ ). In contrast, however, perceived certainty of positive outcomes of sexual aggression was unrelated to self-reported likelihood of sexually aggressive behaviour ( $r_{\text{certainty}} = .04$ ).

Using a slightly different approach to measuring outcome expectancies, Nunes and colleagues (2013) asked 86 male undergraduate students to generate three possible outcomes of rape and evaluate these outcomes on a 7-point Likert scale from *very negative* to *very positive*. After dividing participants into groups based on history of sexual aggression and likelihood to rape, they found that participants who reported the most past sexual aggression showed significantly more favourable evaluations of the outcomes of rape than those who reported no past sexual aggression ( $d = 0.85$ , 95% CI

[0.20, 1.50]). Similarly, participants who reported the most likelihood to rape showed significantly more favourable evaluations of the outcomes of rape compared to those who reported no likelihood to rape ( $d = 1.20$ , 95% CI [0.43, 1.96]).

Using the same measure, Hermann et al. (2018) also found small to moderate significant positive correlations between evaluations of the outcomes of rape and indicators of sexual aggression in a sample of men from the community (past sexually aggressive behaviour,  $r = .23$  [ $n = 181$ ]; proclivity of being sexually aggressive,  $r = .46$  [ $n = 171$ ]; likelihood to rape,  $r = .34$  [ $n = 180$ ]). However, no significant correlations were found among male undergraduate students (past sexually aggressive behaviour,  $r = .03$  [ $n = 72$ ]; proclivity of being sexually aggressive,  $r = .10$  [ $n = 73$ ]; likelihood to rape,  $r = .14$  [ $n = 71$ ]). Furthermore, in a prospective study with a four-month follow-up period, Hermann and Nunes (2018) found that men who reported engaging in sexual aggression during the four-month follow-up (Time 2) reported significantly less negative evaluations of the outcomes of rape than those who only reported past sexual aggression at Time 1 ( $d = 0.94$ , 95% CI [0.32; 1.56],  $n = 59$ ), and those who reported no past sexual aggression at either time point ( $d = 0.88$ , 95% CI [0.28; 1.49],  $n = 69$ ). In sum, more positive evaluations of the outcomes of rape appear to be associated with more self-reported sexual aggression and likelihood of being sexually aggressive in the future.

## **1.2.2 Measures of Attitudes toward Sexual Aggression**

### **1.2.2.1 Evaluation of Rape Scale**

Whereas rape outcome expectancy measures assess attitude precursors (i.e., beliefs about the outcomes rape), Nunes et al. (2018) developed the Evaluation of Rape Scale to directly assess attitudes toward 'rape' using seven semantic differential scales with bipolar

anchors (i.e., *negative* vs. *positive*; *bad* vs. *good*; *wrong* vs. *right*; *immoral* vs. *moral*; *not enjoyable* vs. *enjoyable*, *not fun* vs. *fun*; and *unpleasant* vs. *pleasant*). An attitude score is derived by averaging evaluations across semantic differential scales. In a sample of 660 male undergraduate students, more positive attitudes toward rape were significantly associated with more self-reported past sexually aggressive behaviour ( $r = .25$ ) and likelihood of engaging in sexual aggression in the future ( $r = .32$ ; Nunes et al., 2018). Furthermore, Hermann et al. (2018) extended these findings with a different sample of undergraduate students ( $r = .48 - .63$ ;  $n = 66$ ) and men from the community ( $r = .41 - .63$ ;  $n = 183$ ; Hermann et al., 2018).

#### **1.2.2.2 Evaluation SES-TFR**

To explore attitudes toward a more nuanced conceptualization of sexual aggression (vs. ‘rape’), Hermann and colleagues (2018) modified the Sexual Experience Survey – Tactics First version (SES-TF; Abbey et al., 2005) to assess attitudes toward behaviourally specific acts of sexual aggression (Evaluation SES-TFR). Each item is rated on a 7-point scale from *very negative* to *very positive*. Specifically, respondents are asked to evaluate 36 sexually aggressive behaviours involving six different sexual acts (i.e., fondling, kissing, and sexually touching; attempted sexual intercourse; oral sex; sexual intercourse; anal sex; and inserting an object) and six different tactics (i.e., arguments and pressure; lies or false promises; guilt or displeasure; giving a woman drugs or alcohol; taking advantage of a woman when she is incapacitated due to drugs or alcohol; and physical force). An attitude scores is derived by averaging evaluations across sexually aggressive behaviours. More positive attitudes on the Evaluation SES-TFR showed moderate to large correlations with self-reported past sexually aggressive

behaviour and likelihood of engaging in sexual aggression in the future ( $r = .31 - .84$ ;  $n = 142$  [male undergraduate students];  $r = .40 - .81$ ;  $n = 373$  [community men]; Hermann et al., 2018). Furthermore, in a prospective study, Hermann and Nunes (2018) found that more positive attitudes on the Evaluation SES-TFR significantly predicted self-reported sexually aggressive behaviour during a four-month follow-up period. Specifically, longitudinal cross-lagged panel analyses revealed that attitudes toward sexual aggression at Time 1 significantly predicted self-reported sexually aggressive behaviour four months later at Time 2 (Standardized Probit Regression Coefficient = 0.20,  $p = .008$ ).

More recently, Pedneault, Nunes, et al. (2020) used a modified version<sup>4</sup> of the Evaluation SES-TFR to examine the extent to which attitudes toward sexual aggression mediate the association between subjective norms and sexually aggressive behaviour among male undergraduate students. Scores indicating more positive attitudes toward sexual aggression were highly correlated with self-reported past sexually aggressive behaviour ( $r = .81$ ) and likelihood of engaging in sexual aggression in the future ( $r = .98$ ; Pedneault, Nunes, et al., 2020). Additionally, attitudes toward sexual aggression fully mediated the association between subjective norms regarding sexual aggression and sexually aggressive behaviour. Together, these findings suggest that attitudes toward sexual aggression may be associated with, and predictive of, sexually aggressive behaviour. Notably, results have been consistent across different attitude measures, indicators of sexual aggression, and populations, suggesting that this relationship is not simply a methodological artifact.

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<sup>4</sup> This measure included four additional items regarding sexual acts committed with peers.

### **1.3 Sexual Aggression Theory and Research – Where do Attitudes Fit?**

There is no consensus in the sexual aggression literature regarding the developmental processes underlying the onset and maintenance of sexually aggressive behaviour (e.g., James & Proulx, 2020). However, the most comprehensive explanatory model appears to be the Integrated Theory of Sexual Offending (ITSO; Ward & Beech, 2006). This model integrates a vast array of literature regarding human biology, neuropsychology, psychological functioning, and theories of sexual offending. Briefly, the ITSO claims that brain development interacts with ecological factors (e.g., social/cultural, personal, and physical circumstances) to influence the development of interlocking neuropsychological systems via social learning and biological mechanisms. These neuropsychological systems include the motivation/emotional, action selection and control, and perception and memory systems. Developmental deficits within each of these systems are hypothesized to trigger psychological symptoms (e.g., offence-supportive cognitions) that increase the likelihood of sexual offending. According to the ITSO, attitudes toward sexual aggression would originate from the perception and memory system, which is responsible for the processing of incoming information. In sum, the ITSO appears to provide a useful framework for understanding the potential role that attitudes may play in sexually aggressive behaviour. Notably, however, the model itself has not been subjected to empirical validation (James & Proulx, 2020).

Another promising etiological theory of sexual aggression against women is Malamuth et al.'s (1991) Confluence Model. Whereas most explanatory theories of sexually aggressive behaviour have been developed to explain the behaviour of individuals who have been convicted of a sexual offence (see James & Proulx, 2020 for a

review), the Confluence Model was developed to explain sexually aggressive behaviour among men from non-correctional/forensic populations (i.e., undergraduate students and men from the community; Malamuth, 1991, 2003; Malamuth et al., 1996). The model specifies two pathways leading to sexually aggressive behaviour. The first pathway hypothesizes that early delinquency is associated with sexual promiscuity, which is in turn linked to sexual aggression (antisocial/impersonal sex pathway). The second pathway postulates that acceptance of violence against women is associated with hostility toward women and desire for sexual dominance which, in turn, are linked to sexually aggressive behaviour (hostile masculinity pathway). This model has been validated in cross-sectional and prospective studies (see Malamuth, 2003 for a review). Like the ITSO, the hostile masculinity pathway clearly suggests that cognitions can be important factors in the perpetration of sexual aggression against women.

Indeed, offence-supportive cognitions have long been thought to play a role in the initiation and maintenance of sexually aggressive behavior (see Ó Ciardha & Ward, 2013; Szumski et al., 2018; and Ward et al., 2006 for reviews). Offence-supportive cognition is an umbrella term used to encompass a wide range of cognitions thought to be associated with sexual aggression, including rape myth acceptance (e.g., Johnson & Beech, 2017), cognitive distortions (e.g., Ó Ciardha & Ward, 2013), excuses (e.g., Hermann et al., 2012), and justifications for rape (e.g., Maruna & Mann, 2006). It is important to note that the term attitude is sometimes used to refer to offence-supportive cognitions; however, as will be discussed later, these cognitions do not appear to conform to the social psychological conceptualization of attitude as evaluation (Nunes et al., 2013, 2018). Instead, Nunes et al. (2021a) have suggested that the correctional literature

appears to conform to a lay definition of the term attitude (e.g., “feeling or opinion about something or someone, or a way of behaving that is caused by this”; Cambridge Dictionary, n.d.). Thus, although some studies have used the term attitude to refer to various offence-supportive cognitions in the correctional/forensic literature, I refer to them as offence-supportive cognitions throughout this thesis to distinguish them from the social psychological conceptualization of attitude as favourable or unfavourable evaluations of a psychological object.

Prominent theories regarding offence-supportive cognitions suggest that they may be based in implicit theories or schema about the world that are learned at an early age (e.g., Polascheck & Ward, 2002). More recently, the multi-mechanism theory of cognitive distortions (Szumski et al., 2018) suggested that different offence-supportive cognitions may play different roles in male sexual offending. For instance, some cognitions may play an etiological role whereas others reinforce behaviour after an offence has been committed. This model, however, has not been empirically evaluated. Nonetheless, correlational evidence suggests that measures of offence-supportive cognitions are generally associated with sexual aggression against women (e.g., Johnson & Beech, 2017; Murnen et al., 2002; Yapp & Quayle, 2018). Additionally, some studies have found that offence-supportive cognitions can predict sexually aggressive behaviour among men from non-correctional populations (Malamuth, 1996; Thompson et al., 2011; Wegner et al., 2015); however, studies examining official conviction records have found that offence-supportive cognitions can be poor predictors of sexual reoffending (Helmus et al., 2013; Nunes et al., 2016).

Importantly, as previously mentioned, widely used measures of offence-supportive cognitions appear to be assessing something other than attitudes toward sexual aggression. To illustrate, most measures of offence-supportive cognition ask respondents to indicate their agreement with a series of statements on a Likert-type scale. The statements themselves vary from measure to measure, but they generally consist of belief statements regarding women, men, and rape. Recall that Likert scales are one of the most common methods for measuring attitudes; however, as mentioned earlier, the statements must clearly reflect a strong positive or negative evaluation of the attitude object. Now, consider the following belief statements from commonly used measures of offence-supportive cognition:

- “A rape probably didn’t happen if the woman has no bruises or marks” (Rape Myth Scale; Lonsway & Fitzgerald, 1995)
- “When men rape, it is because of their strong desire for sex.” (Illinois Rape Myth Acceptance Scale; Payne et al., 1999)
- “A raped woman is a less desirable woman.” (Attitudes Toward Rape Scale; Feild, 1978)
- “A woman who is stuck-up and thinks she is too good to talk to guys on the street deserves to be taught a lesson.” (Rape Myth Acceptance Scale; Burt, 1980)
- “Women who go to bars a lot are mainly looking to have sex.” (RAPE Scale; Bumby, 1996)

Would endorsing any of these statements clearly reflect a positive or negative evaluation of sexually aggressive behaviour against women? For example, could someone at once

agree that “When men rape, it is because of their strong desire for sex” and also hold a negative attitude toward sexual aggression? I would argue that these statements are ambiguous at best. Consistent with this notion, preliminary evidence suggests that attitudes toward sexual aggression may be distinct from other offence-supportive cognitions (Nunes et al., 2018; Pedneault, Hermann, & Nunes, 2020).

In a sample of male undergraduate students, Nunes et al. (2018) examined the underlying factor structure of the Evaluation of Rape Scale and a widely used measure of cognitive distortions. The results of an exploratory factor analysis revealed that items from the Evaluation of Rape Scale loaded on a separate factor from those of the measure of cognitive distortions. The two factors were significantly correlated ( $r = .46$ ), suggesting that these measures may be assessing distinct but correlated constructs. Furthermore, scores on the Evaluation of Rape Scale were independently associated with self-reported past sexually aggressive behaviour and likelihood of engaging in sexual aggression in the future. Pedneault, Hermann, and Nunes (2020) also replicated these results with a sample of men from the community using the Evaluation SES-TFR and different indicators of sexual aggression. Together, these findings suggest that attitudes may explain unique variance in sexually aggressive behaviour over and above that which is already captured by other measures of offence-supportive cognition.

#### **1.4 Critical Assessment of the Literature and Next Steps**

To date, studies examining attitudes toward sexual aggression have exclusively been correlational, although one prospective study provided some indication that attitudes toward sexual aggression may predict subsequent sexually aggressive behaviour (Hermann & Nunes, 2018). There have been no experimental tests of the causal

relationship between attitudes and sexually aggressive behaviour; however, given that attitudes have been shown to influence other types of behaviour (e.g., Sheeran et al., 2016), this is an avenue worth exploring. Most importantly, studies examining attitudes toward sexual aggression have been exploratory in nature because none of the measures developed to assess attitudes toward sexual aggression have been empirically validated. Specifically, the attitude measures discussed earlier (i.e., Evaluation of Rape Scale and Evaluation SES-TFR) were all developed for the purpose of addressing specific research questions. Although these measures were based on well-established attitude measurement methods (e.g., semantic differential scale; Osgood et al., 1957), their items did not undergo any psychometric testing before being included in the measure. Thus, as discussed in subsequent chapters, their psychometric characteristics have room for improvement. Furthermore, there have been no direct tests of their construct validity, meaning that the extent to which their scores truly reflect attitudes toward sexual aggression is unknown. Nonetheless, these limitations are to be expected given that research on attitudes toward sexual aggression is relatively new and only a handful of studies have examined the topic. However, if the goal is to understand the potential role of attitudes in explaining sexually aggressive behaviour, it is essential to develop and validate a measure of attitudes toward sexual aggression using appropriate scale development and validation methods (Clake & Watson, 2019; Flake et al., 2017).

## **1.5 Overview of Integrated Thesis**

The purpose of this thesis is to develop and explore the validity of a new measure of attitudes toward sexual aggression against women to facilitate more rigorous research on the relationship between attitudes and sexually aggressive behaviour. The following three

research paper chapters each address different parts of the scale development and validation process. In Chapter 2, I describe the development of the Attitude toward Sexual Aggression against Women (ASAW) scale and present the results of psychometric and structural analyses. Chapter 3 consists of a study examining the ASAW's discriminant and incremental validity relative to other measures of offence-supportive cognitions. In Chapter 4, I present the results of an experiment in which I examined the extent to which scores on the ASAW truly reflect attitudes toward sexual aggression against women (i.e., construct validity). Last, Chapter 5 provides a general discussion of the main findings and their implications.

## **Chapter 2: Attitude toward Sexual Aggression against Women (ASAW)**

### **Scale: Development and Structural Validity**

The purpose of this research paper was to develop a new measure of attitudes toward sexual aggression against women, with the goal of addressing some of the limitations of previous measures used to assess this construct. Specifically, this chapter provides a detailed account of the scale development process, including item development, testing, and psychometric analyses. Based on the results of these analyses, a subset of items was selected to create the Attitude toward Sexual Aggression against Women (ASAW) scale. Next, the underlying factor structure of the ASAW was examined using exploratory and confirmatory factor analysis. Whereas the current chapter is primarily concerned with the development of the ASAW, Chapters 3 and 4 examine the validity of its scores.

## 2.1 Introduction

Consistent with social psychological theory and research (Ajzen, 1991; 2001; Eagly & Chaiken, 2007; Glasman & Albarracín, 2006; Kraus, 1995; Sheeran et al., 2016), preliminary evidence suggests that attitudes toward sexual aggression are associated with, and potentially predictive of, sexually aggressive behaviour against women (Hermann et al., 2018; Hermann & Nunes, 2018; Nunes et al., 2013, 2018; Pedneault, Nunes, et al., 2020; Pedneault, Hermann, & Nunes, 2020). Findings have been consistent across samples (community men and male undergraduate students), indicators of sexual aggression (e.g., self-reported history of sexually aggressive behaviour and future likelihood of sexual aggression), and measure of attitudes toward sexual aggression (Evaluation of Rape Scale [Nunes et al., 2018] and Evaluation Sexual Experience Scale-Tactics First Revised [Hermann et al., 2018]). However, research to date has been exploratory given that none of the measures designed to assess attitudes toward sexual aggression have undergone any tests of validity. That is, their items were intuitively derived from the literature and the authors' expertise, but they did not undergo psychometric testing or validation.

Indeed, several psychometric limitations have been identified. For instance, high inter-item correlations have been reported (i.e., polychoric correlations  $\geq .85$ ; Pedneault, Hermann, & Nunes, 2020), which unnecessarily increase the length of a scale and complicate certain statistical analyses that are essential for assessing structural validity (e.g., factor analysis; Clark & Watson, 2019; Flake et al., 2017). Additionally, scores are extremely positively skewed, such that most men report only very unfavourable attitudes toward sexual aggression (i.e., floor effects; Hermann et al., 2018; Pedneault, Nunes, et

al., 2020), which limits the scale's ability to detect individual differences and attitude change. Although it is possible that this represents the true distribution of attitudes toward sexual aggression among the populations studied, it is equally probable that items developed to assess attitudes toward sexual aggression do not fully capture the intended construct because they were not empirically derived from a large pool of potential items. To ensure good construct coverage, scale development should begin with an overly inclusive pool of items from which the best subset is selected to reflect the construct of interest (Clark & Watson, 2019).

### **2.1.1 Present Studies**

This paper presents the development of a new measure of attitudes toward sexual aggression: the Attitude toward Sexual Aggression against Women (ASAW) scale. The objective of developing a new measure was to minimize the limitations of previous measures of attitudes toward sexual aggression. This research paper consists of two studies. The first describes the development of the ASAW scale, including item development, selection, and factor structure. The second study was conducted to confirm the ASAW's factor structure with an independent sample.

## **2.2 Study 1: Development of the ASAW Scale**

Given the high rates of sexual aggression among men from the general population (e.g., Abbey & Jacques-Tiura, 2011; Abbey et al., 2007; Hermann et al., 2018), the ASAW was developed for use with men from the general community. Following best practice (Clark & Watson, 2019), I created a large pool of potential items from which I selected the best subset for inclusion in the ASAW. Item development and selection was an iterative process of testing and validation with several samples of men from the

community (Clark & Watson, 2019). Items were developed to assess attitudes toward a wide range of sexually aggressive tactics and sexual acts against women. For instance, tactics ranged from verbal coercion to physical force, and sexual acts included non-consensual sharing/taking of sexual images, unwanted sexual touching, oral sex, and sexual intercourse. Many of the sexually aggressive behaviours were derived from the Sexual Experience Survey and its modified forms (Abbey et al., 2005; Koss et al., 2007; Koss & Gidycz, 1985; Koss et al., 1987; Koss & Oros, 1982). Additionally, some items were inspired by the literature on condom use resistance tactics (e.g., Davis, Schraufnagel, et al., 2014) and non-consensual sharing of sexual images (e.g., Krieger, 2017; Marganski & Melander, 2018). Importantly, consistent with best practices (Koss & Gidycz, 1985; Koss et al., 1987; Koss & Oros, 1982), items included behaviourally specific language and avoided the use of slang and expressions when describing sexually aggressive behaviour.

Unlike previous measures of attitudes toward sexual aggression, sexually aggressive behaviours were also paired with potentially mitigating contexts to capture more nuance and variability in attitudes toward sexually aggressive behaviour. Research has identified several factors that increase the level of blame attributed to victims of sexual assault and decrease the perceived culpability of the perpetrator (Adolfsson & Strömwall, 2017; Grubb & Turner, 2012; Klettke & Mellor, 2017; van der Bruggen & Grubb, 2014). I hypothesized that including potentially mitigating factors would reduce the perceived wrongfulness of the sexually aggressive behaviour for some individuals and, thus, reduce floor effects. Some of these factors include the victim's prior relationship and sexual activity with the perpetrator, whether the victim was intoxicated, what the victim was

wearing, and whether the victim flirted with the perpetrator before the assault. Consistent with best practice (Gehlbach & Brinkworth, 2011), all items were reviewed by subject matter experts; namely, the first authors of the Evaluation of Rape Scale (Nunes et al., 2018) and the Evaluation SES-TFR (Hermann et al., 2018).

### **2.2.1 Method**

Item testing involved presenting overlapping sets of items to three independent samples of men from the community. Men (18 or older) living in Canada or the United States were recruited through Qualtrics<sup>5</sup> from an online panel of participants. Based on several factors, including item redundancy and response distribution, some items were retained whereas others were discarded. The specific methods and results for each sample are described next.

#### **2.2.1.1 Participants**

##### **2.2.1.1.1 Sample 1**

A total of 957 heterosexual<sup>6</sup> men participated in this study; 128 of these participants withdrew and 55 did not otherwise complete the study. Of the 774 men who completed the study, 0.8% ( $n = 6$ ) were excluded for speeding (i.e., completing the study faster than 1/3 the median time others took to respond to the survey) and 50.1% ( $n = 388$ ) were excluded because they failed more than one of three instructional attention-check questions embedded throughout the survey (e.g., You're with a woman who is wearing a

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<sup>5</sup> Qualtrics is associated with several online panel partners who are responsible for recruiting participants to participate in research (Qualtrics, 2014).

<sup>6</sup> Heterosexual orientation was determined from the demographic question “Who are you most sexually attracted to?”. To be included, participants had to endorse “mostly sexually attracted to women”.

sexy dress and has been flirting with you. Please select a bit good from the options below to demonstrate that you are paying attention.). Instructional attention-check questions are designed to detect careless responding and lack of comprehension (Shamon & Berning, 2020). Evidence suggests that filtering out those respondents who demonstrate careless responding can improve data quality (e.g., Berinsky et al., 2014; Goodman et al., 2013; Oppenheimer et al., 2009; Shamon & Berning, 2020). Although the proportion of participants who failed the attention-check questions in this sample appears quite high (50% of the sample), it is within the range observed in other studies that have used attention-checks (see Thomas & Clifford, 2017 for a review).

The final sample consisted of 380 participants who were on average 31.2 ( $SD = 10.2$ ) years old, ranging from 18 to 75. Sixty-five percent ( $n = 247$ ) were from the United States and 35% ( $n = 133$ ) were from Canada. Approximately half were single (52.9%,  $n = 201$ ), 25.8% ( $n = 98$ ) were married, 9.7% ( $n = 37$ ) were in a romantic relationship, 8.9% ( $n = 34$ ) were living with a romantic partner, and 2.6% ( $n = 10$ ) were separated, divorced, or widowed. Participants who were excluded for failing more than one attention-check question did not significantly differ from the final sample in terms of age,  $t(884) = 1.06$ ,  $p = .288$ , country of residence,  $\phi = -.06$ ,  $p = .059$ , or relationship status,  $\phi = .03$ ,  $p = .967$ . Race/ethnicity was not collected for this sample.

#### **2.2.1.1.2 Sample 2**

A total of 239 heterosexual men participated in the second survey. Forty-two withdrew and 29 did not complete the study. Of the 168 men who completed the study, 6.6% ( $n = 11$ ) were excluded for speeding and 4.8% ( $n = 8$ ) were excluded because they failed more than one of the three attention-check questions designed to identify careless

responding and lack of comprehension. The instructional attention-check questions in the current sample (e.g., Please select "a bit positive". This is just to check if people are paying attention) were easier/more obvious than those used in Sample 1 (e.g., You're with a woman who is wearing a sexy dress and has been flirting with you. Please select a bit good from the options below to demonstrate that you are paying attention.), which may explain why a smaller proportion of participants failed the attention-check in Sample 2 (approximately 5% vs. 50% in Sample 1). The final sample consisted of 149 participants. For this sample, I set age quotas<sup>7</sup> to recruit mostly younger men and these quotas were met.

On average, participants were 30.5 ( $SD = 9.7$ ) years old, ranging from 18 to 75. Additionally, 49% ( $n = 73$ ) were living in the United States and 51% ( $n = 76$ ) were living in Canada. The majority identified as White (70.5%,  $n = 105$ ), 14.1% ( $n = 21$ ) identified as Asian, 5.4% ( $n = 8$ ) Hispanic, 4.0% ( $n = 6$ ) Black, 2.7% ( $n = 4$ ) Arab, 1.3% ( $n = 2$ ) Indigenous, 1.3% ( $n = 2$ ) East Indian, and 0.7% ( $n = 1$ ) Iranian. More than half were single (56.4%,  $n = 84$ ), 27.5% ( $n = 41$ ) were married, 5.4% ( $n = 8$ ) were in a romantic relationship, 10.1% ( $n = 15$ ) were living with a romantic partner, and 0.7% ( $n = 1$ ) were separated, divorced, or widowed. Most participants completed college or university (61.1%,  $n = 91$ ), 36.9% ( $n = 55$ ) completed high school, and 2.0% ( $n = 3$ ) reported that they did not complete high school. Given the small number of participants who were excluded for failing more than one attention-check question, I did not statistically compare these participants to those who were retained for analysis.

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<sup>7</sup> No maximum on participants aged 18-30, a maximum of 25% of participants aged 31-40, a maximum of 15% of participants aged 41-50, and a maximum of 10% of participants aged 51 or older.

### 2.2.1.1.3 Sample 3

A total of 787 men who are sexually attracted to women participated in the third survey; 322 withdrew and 17 did not complete the study. Of the 448 men who completed the study, 1.8% ( $n = 8$ ) were excluded for speeding (i.e., completing the survey in less than 1/3 the median survey completion time) and 26.3% ( $n = 118$ ) were excluded for failing more than one of three instructional attention-check questions (e.g., Data quality is important to us. Please select "not at all bad" to show that you have read this question. We appreciate your continued attention.). This resulted in a final sample of 322 participants. The same age quotas as those used in Sample 2 were applied to ensure that the sample consisted of mostly younger men. The average age was 33.7, ranging from 18 to 87. Most participants identified as White (68.0%,  $n = 219$ ), followed by Asian (15.2%,  $n = 49$ ), Black (8.4%,  $n = 27$ ), Hispanic (4.3%,  $n = 14$ ), East Indian (3.4%,  $n = 11$ ), Arab (1.2%,  $n = 4$ ), Indigenous (0.6%,  $n = 2$ ), and Other (2.7%,  $n = 7$ ); 3.4% identified with more than one group. Of those who indicated their relationship status ( $n = 317$ ), 44.5% ( $n = 141$ ) indicated they were single, 35.0% ( $n = 111$ ) were married, 16.1% ( $n = 51$ ) were in a romantic relationship or living with a romantic partner, and 4.4% ( $n = 14$ ) were separated, divorced, or widowed. Additionally, of the 317 participants who indicated their highest level of education, most indicated they completed college or university (70.3%,  $n = 223$ ), 27.1% ( $n = 86$ ) had completed high school, and 2.5% ( $n = 8$ ) had not completed high school. There were no significant differences between this sample and participants who were excluded for failing more than one attention-check question in terms of age,  $t(438) = 1.41, p = .159$ , country of residence,  $\phi = .08, p = .105$ ,

race/ethnicity,  $\phi = .12$ ,  $p = .656$ , relationship status,  $\phi = .10$ ,  $p = .359$ , or education,  $\phi = .08$ ,  $p = .250$ .

### **2.2.1.2 Procedure**

The same procedure was used for all three samples. Qualtrics Panel members received an invitation to participate in this study that included a link to the online survey. Those who consented to participate after reading the consent form (see Appendix A) were presented with a demographic questionnaire (questions varied slightly across samples, but all included questions about age, gender, sexual orientation, and relationship status; see Appendix B). Next, they completed the pool of potential ASAW items developed for their respective sample (described in the next section). Three attention-check questions were also randomly distributed throughout the items (see Appendix C). Participants could withdraw from the survey at any point. Once a participant withdrew or completed the survey, they were presented images of nature scenes intended to enhance mood (see Appendix D), followed by a debriefing form (see Appendix E). Participants who completed the survey received a small monetary reward. This procedure was approved by the Carleton University Ethics Board.

## **2.2.2 Item Development and Selection**

### **2.2.2.1 Sample 1**

An initial pool of 51 new items was developed for this sample (see Appendix F.1). Each item consisted of a combination of one sexual act (i.e., kissing and sexual touching; giving oral sex; or having sex), one coercive tactic (i.e., threat to reputation or employment; blocking a woman from getting away; verbal or physical intimidation;

incapacitation; threat of physical harm; or physical force), and one potentially mitigating factor (i.e., woman is wearing a sexy dress and flirting with you; woman is drunk or high; or woman is your date/girlfriend/wife). For example, “You’re with a woman who is drunk or high [*potentially mitigating factor*]. She refuses to give you oral sex, so you tell her that you’ll make something bad happen to her reputation or employment [*coercive tactic*] if she doesn’t give you oral sex [*sexual act*]”. Each item was fully crossed with each of the following 4-point bipolar response scales: (a) *very bad, a bit bad, a bit good, very good*, (b) *very negative, a bit negative, a bit positive, very positive*, and (c) *very sad, a bit sad, a bit fun, very fun*. The first two response scales have been shown to load highly on an evaluation factor in validation studies (Osgood et al., 1957). I included the third scale, *very sad-very fun*, because I hypothesized that it may have a slightly different evaluative meaning than the others. In total, fully crossing the pool of items with the three response scales resulted in 153 items.

The primary goals with respect to item selection were to a) minimize redundancy across items and b) reduce floor effects. To do this, I examined the inter-item polychoric correlation (used for ordinal variables) matrix containing all 153 items. Items that had correlations of .90 or higher<sup>8</sup> were considered redundant (i.e., explained the same variance in the construct as another item). This cut-off falls within the range of values (.70-.90) typically considered indicative of multicollinearity (e.g., Kline, 2016; Thompson et al., 2017; Yoo et al., 2014). For each bivariate correlation greater than or equal to .90, only the item with the highest variance was retained. For all items, a higher

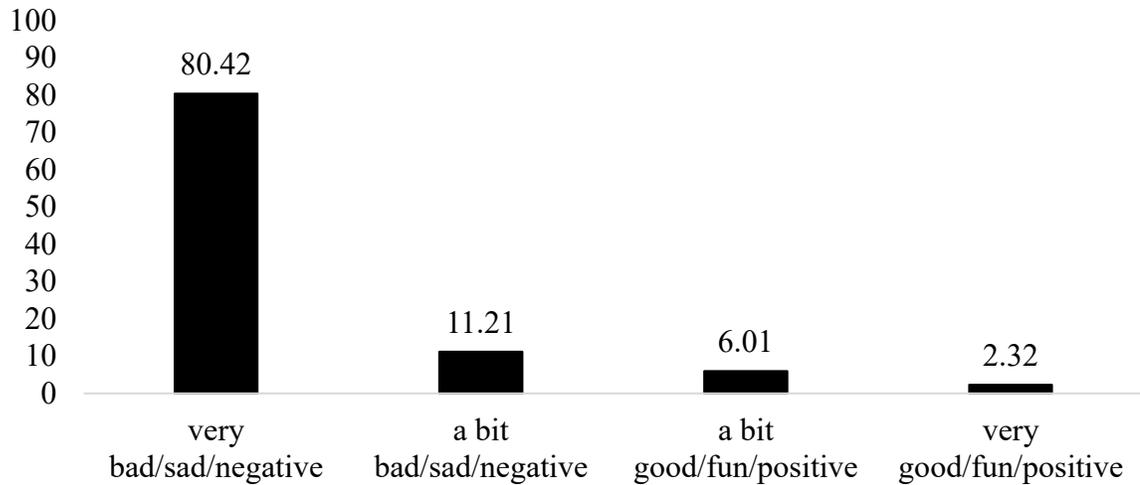
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<sup>8</sup> Originally, a cut-off of .85 was used, but this cut-off resulted in the retention of only five non-redundant items. Therefore, to increase the number of retained items, the cut-off was increased to .90.

variance indicated that more respondents endorsed something other than the most unfavourable response option on the given scale. As all items were highly positively skewed, retaining items with the highest variance was important to reduce floor effects. At the end of this process, there remained two sets of identical items that were evaluated on different response scales; only the item with the highest variance was retained.

This resulted in a total of 12 unique, non-redundant items (polychoric correlations < .90) with the highest variance. Of these 12 items, there were three items that asked about sexual activity with a woman when she is too drunk or high to know or stop what is happening, three asked about blocking a woman from getting away, two items asked about using physical force against a woman, two asked about making something bad happen to a woman's reputation or employment, and two asked about intimidating a woman in order to have some sort of sexual activity with her.

Polychoric correlations between the 12 items ranged from .67 to .898, indicating that all items were highly correlated. Additionally, internal consistency across the items was high (Cronbach's alpha [ $\alpha$ ] = .96). All items were positively skewed, with respondents endorsing the most unfavourable response option (i.e., *very bad/very sad/very negative*) more than 80% of the time on average across items (see Figure 2.1). In sum, responses from Sample 1 indicated that the original pool of items was highly correlated and largely redundant. Therefore, most of the initial item pool was discarded. Furthermore, the items that were retained had limited response variability, with most respondents endorsing the most unfavourable response option for each item. Together, these findings indicate room for improvement. Therefore, I developed a new pool of items to test with Sample 2.



**Figure 2.1.** Average endorsement of each response option across the 12 items retained from Sample 1 ( $N = 380$ )

#### 2.2.2.2 Sample 2

An additional 63 new items were developed with the goals of (a) increasing construct coverage, (b) reducing inter-item redundancy, and (c) reducing floor effects (see Appendix F.2 for a full list of items). First, I included a new potentially mitigating context: consenting to one type of sexual activity before refusing another type of sexual activity. I hypothesized that men may perceive sexually aggressive behaviour less unfavourably if it was with a woman who had previously consented to at least some sexual activity beforehand. Second, I included six new coercive tactics:

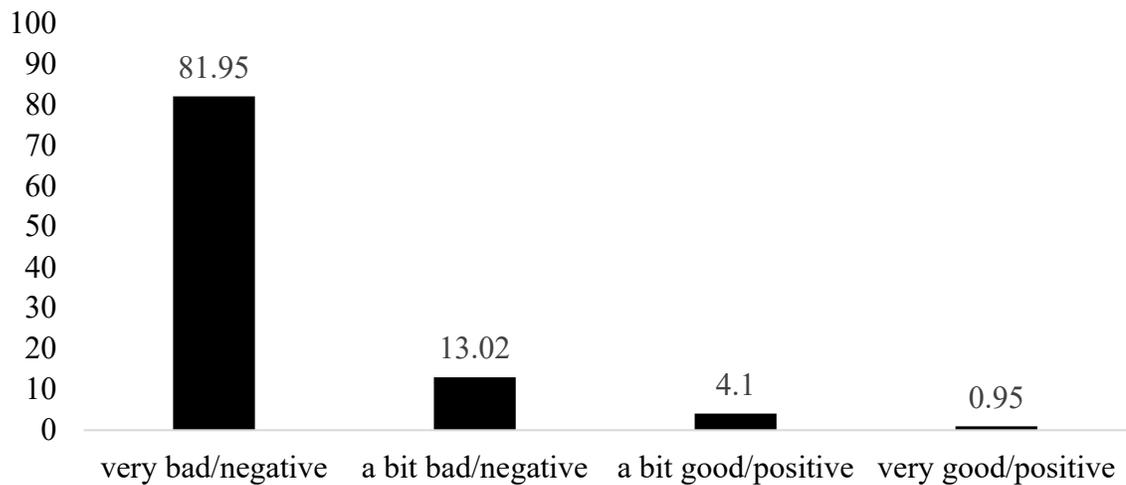
- a) Taking sexual pictures of a woman without her permission
- b) Telling the woman that you'll spread rumours about her
- c) Telling the woman that you'll post sexual pictures of her on the internet

- d) Persistently putting your hand on the woman's leg, grabbing her breast, and grabbing her butt.
- e) Purposely breaking or removing a condom without the woman knowing and continuing to have sex without the condom
- f) Moving from vaginal to anal sex without consent

Each new item was fully crossed with the following two response scales (a) *very bad, a bit bad, a bit good, very good* and (b) *very negative, a bit negative, a bit positive, very positive*. This resulted in a total of 126 items. I chose to drop the *very sad-very fun* response scale because it performed similarly to the other response scales in Sample 1 and has less empirical support (e.g., Osgood et al., 1957).

The item selection process differed slightly from Sample 1. First, items were divided into 12 categories based on the type of coercive tactic they addressed. This modification was made to ensure a more diverse and balanced group of tactics were included in the final measure. Starting with the tactic with the highest variance, the item with the highest variance from each tactic was selected for retention, with the exception that it was not redundant with the previously retained items (redundancy was defined as any polychoric correlation  $\geq .85$ ). The process was repeated a second time, such that a maximum of two items were retained from each tactic. Following this process, two sets of items were almost identical; therefore, only the item with the highest variance from each set was retained. This resulted in a subset of 13 items. At least one item was retained from each tactic except for the tactics of "making something bad happen to her reputation or employment" and "spreading rumours about her", which were completely redundant (correlated  $\geq .85$ ) with the other tactics.

Polychoric correlations between the 13 items ranged from .45 to .849, indicating that multicollinearity across the items was reduced compared to Sample 1. Additionally, internal consistency was high ( $\alpha = .92$ ). However, items remained highly skewed (floor effect), with 82% of participants on average endorsing the most unfavourable response option across the 13 items (see Figure 2.2). This is slightly higher than in Sample 1.



**Figure 2.2.** Average endorsement of each response option across the 13 items retained from Sample 2 ( $N = 149$ )

In sum, relative to the items tested in Sample 1, a broader range of non-redundant tactics and potentially mitigating factors were tested in Sample 2. However, response distributions still indicated floor effects. Consistent with previous research examining attitudes toward sexual aggression, response variability on the ASAW items was generally a matter of degree (e.g., *very negative* vs. *a bit negative*) and not of direction (e.g., *very negative* vs. *very positive*). This is not necessarily surprising given that few people would be expected to evaluate sexual aggression *favourably*. Indeed, sexual

aggression is almost universally condemned, even in correctional populations (e.g., Ricciardelli & Moir, 2013). Additionally, although certain factors may make some sexually aggressive behaviour appear less bad/negative (i.e., difference of degree), they likely would not make them appear good/positive (i.e., difference of direction). Consequently, I hypothesized that a unipolar response scale may reveal greater variability in attitudes toward sexual aggression among men from the community. I tested this hypothesis with a third independent sample of men.

### 2.2.2.3 Sample 3

All unique items retained from Sample 1 and Sample 2 (total of 29 unique items), as well as some additional items selected to increase construct coverage, were fully crossed with two bipolar response scales and two unipolar response scales (see Appendix F.3). In total, participants were asked to complete 116 items.

Bipolar response scales:

- a) *very bad, a bit bad, a bit good, very good*
- b) *very negative, a bit negative, a bit positive, very positive*

Unipolar response scales:

- a) *very bad, pretty bad, not that bad, not at all bad*
- b) *very negative, pretty negative, not that negative, not at all negative*

To select the best response scale for the ASAW, I examined the response distributions across each response scale. Visual inspection of the response distributions of individual items across the four different response scales suggested that the *very bad-not at all bad* response scale may be slightly less positively skewed than the other response scales.

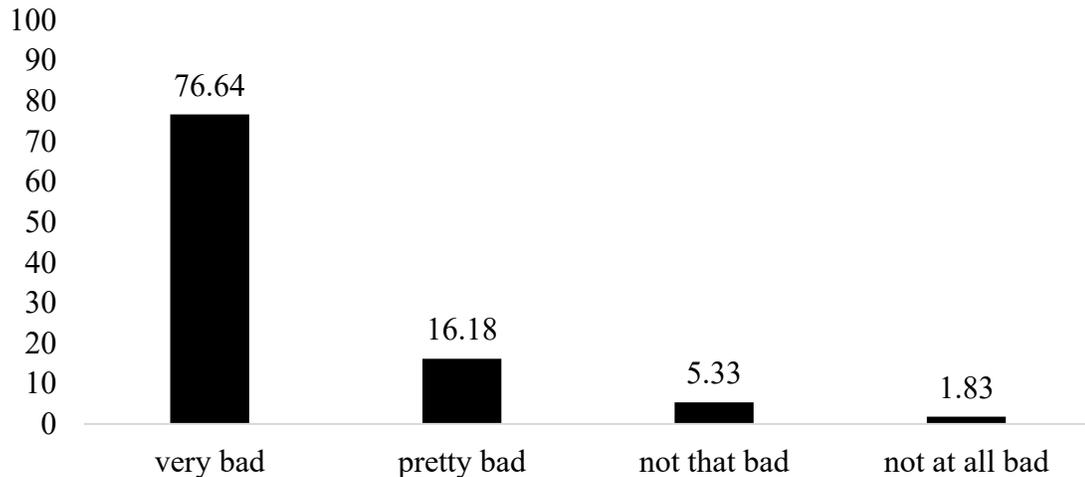
Next, I tested whether there were any significant differences in attitudes across the four

response scales by averaging scores for each response scale. Using non-parametric statistics as all four response scales were highly skewed, an omnibus Friedman test indicated that there was a statistically significant difference in median scores across the four response scales,  $\chi^2(3) = 38.03, p < .001$ . Post-hoc analysis using the Wilcoxon signed-rank test with a Bonferroni correction ( $\alpha = .05/6 = .008$ ) revealed that the *very bad-not at all bad* response scale (Median = 1.07, Interquartile Range [IQR] = 1 – 1.38 ) elicited significantly higher endorsement of more favourable attitudes than the *very negative-not at all negative* (Median = 1.03, IQR = 1 – 1.37,  $Z = -3.10, p = .002$ ), *very bad-very good* (Median = 1.03, IQR = 1 – 1.33,  $Z = -4.28, p < .001$ ), and *very negative-very positive* (Median = 1.03, IQR = 1 – 1.27,  $Z = -5.83, p < .001$ ) response scales. Therefore, I chose to move forward with the *very bad-not at all bad* response scale for the final measure.

Subsequent analyses were conducted with the 30 items from this response scale. As with Sample 2, I divided the items into 12 categories based on the type of sexually aggressive tactic addressed. Starting with the tactic with the highest variance item, the item with the highest variance from each tactic was selected for retention, with the exception that it was not redundant with the previously retained items (defined as a polychoric correlation  $\geq .85$ ). This process continued until a maximum of two items were selected from each category. This resulted in a subset of 15 non-redundant items. I further discarded one item that asked about threatening to physically harm a woman to get oral sex because it had the lowest variance and was less frequently endorsed than items that asked about actual use of force to get oral sex. Additionally, I discarded one of two items

that asked about use of physical force to get oral sex because they were almost identical. This resulted in the final 13-item ASAW scale.

Average endorsement of each response option across the 13 items is presented in Figure 2.3. Items demonstrated high internal consistency ( $\alpha = .93$ ). A total score for the ASAW is computed by averaging responses (possible range of 1-4), with higher scores indicating more favourable attitudes toward sexual aggression against women. ASAW scores ranged from 1.00-3.31, with a mean of 1.32 ( $SD = 0.48$ ).



**Figure 2.3.** Average endorsement of each response option across the final 13 items retained for the ASAW (Sample 3,  $N = 322$ )

### 2.2.3 Exploratory Factor Analysis

Next, EFA was used to begin examining the underlying structure of the ASAW. When interpreting the results of an EFA, if items cluster together to form a single factor, this suggests that they are assessing the same underlying construct; however, if items

separate to form multiple factors, this suggests that they may be assessing distinct underlying constructs.

### **2.2.3.1 Overview of Analyses**

The EFA was conducted in MPlus version 8.4. Factors were extracted from a polychoric correlation matrix using robust weighted least square estimation (i.e., WLSMV estimator). Pearson product-moment correlations tend to underestimate the degree of association between ordinal variables because data variability is reduced relative to continuous data (Flora & Curran, 2004; Holgado-Tello et al., 2010). In contrast, polychoric correlations more accurately estimate correlations between ordinal data and are more robust to violations of normality. Additionally, robust weighted least square estimation is the recommended extraction method for categorical indicators as it does not make distributional assumptions (Kline, 2016; Schmitt, 2011). No attempt was made to impute missing data as the WLSMV estimator computes the model parameters using all available data.

Three factor retention methods were considered when selecting the number of factors to retain: (a) Kaiser criterion, (b) parallel analysis, and (c) minimum average partial (MAP) test. According to the Kaiser criterion, only factors that explain more variance than a single item (i.e., factors with eigenvalue greater than one) should be considered for retention (Kaiser, 1960). Parallel analysis involves generating a series of random datasets with the same sample size and number of variables as the original data (O'Connor, 2000). The number of factors to retain is determined by how many eigenvalues in the original dataset are greater than the 95<sup>th</sup> percentile of the distribution of randomly generated eigenvalues. Velicer's (1976) MAP test involves comparing the

amount of systematic variance to the amount of unsystematic variance present in the correlation matrix after each factor has been extracted. The number of factors to retain is determined by the number of factor extractions that result in the smallest average squared partial correlation (O'Connor, 2000). Research suggests that parallel analysis and the MAP test are the most accurate methods for determining the number of factors to retain (Schmitt, 2011).

When selecting the final number of factors to retain, I also examined the pattern of standardized factor loadings on each of the extracted factors. Factor loadings  $\geq .40$  were considered to load onto a factor (Matsunaga, 2010). Factors were rotated using oblique rotation (Geomin rotation) to improve the interpretability of the factor loadings. Unlike orthogonal rotation, oblique rotation allows factors to correlate, which is important when examining psychological constructs that are likely to be associated. Orthogonal rotation may produce unrealistic factor structures when factors are correlated (Schmidt, 2011).

All extracted models were also evaluated using the following three model fit indices: (a) root mean square error of approximation (RMSEA), (b) comparative fit index (CFI), and (c) standardized root mean square residual (SRMR). RMSEA and SRMR are considered badness-of-fit measures, such that larger values indicate poorer fit. RMSEA and SRMR values  $> .10$  may indicate poor fit (Kline, 2016). CFI is considered a goodness-of-fit measure, such that larger values indicate better fit. CFI values greater than .95 are commonly considered to indicate acceptable fit (Hu & Bentler, 1999).

### **2.2.3.2 Results**

The MAP test suggested retaining one factor and the parallel analysis suggested retaining up to three factors. However, the second (eigenvalue = 0.80) and third (eigenvalue = 0.61) factors had eigenvalues less than one, suggesting they are trivial factors. Nevertheless, I extracted models with one to three factors. The one-factor model fit the data well (RMSEA 0.08, 90% CI [0.07, 0.09]; CFI = 0.98; SRMR = 0.06), with factor loadings ranging from .78 to .90. Two-factor (RMSEA 0.06, 90% CI [0.05, 0.08]; CFI = 0.99; SRMR = 0.04) and three-factor (RMSEA 0.05, 90% CI [0.03, 0.07]; CFI = 0.996; SRMR = 0.03) models also fit the data well; however, they were less interpretable as they included cross-loadings and Heywood cases (i.e., impossible values). More importantly, they did not meaningfully improve model fit (i.e., models with one to three factors all fit the data well). Therefore, I selected the one-factor model, which accounted for 71.6% of the variance in the data. Factor loadings for the one-factor model are presented in Table 2.1.

**Table 2.1**

*ASAW Results from EFA (Study 1, Sample 3, N = 322) and CFA (Study 2, N = 648)*

ASAW Item	EFA	CFA	
	Loadings	Estimate <sup>a</sup>	SE
1 You're with a woman who is wearing a sexy dress and has been flirting with you. She's refusing to let you kiss or sexually touch her, so you block her from getting away from you (for example, by blocking the doorway) until she lets you kiss or sexually touch her.	<b>.88</b>	<b>.74</b>	.03
2 You're with a woman who is drunk or high. She's having sex with you but refuses to let you take sexual pictures of her. You take sexual pictures of her anyway.	<b>.86</b>	<b>.79</b>	.03
3 You're talking with a woman you just met. You put your hand on her leg, but she pushes it away. You put your hand back on her leg.	<b>.79</b>	<b>.77</b>	.02

4	You have oral sex with your date/girlfriend/wife when she is too drunk or high to know or stop what is happening.	<b>.79</b>	<b>.79</b>	.02
5	You're with a woman who is wearing a sexy dress and has been flirting with you. She's giving you oral sex but refuses to have sexual intercourse with you, so you tell her that you'll spread rumours about her if she doesn't have sex with you.	<b>.86</b>	<b>.82</b>	.02
6	Your date/girlfriend/wife agrees to have sex with you, but only if you wear a condom. You put a condom on. While you're having sex, you purposely break or remove the condom without her knowing and continue to have sex with her without a condom.	<b>.83</b>	<b>.81</b>	.02
7	You're with a woman who is wearing a sexy dress and has been flirting with you. She refuses to give you oral sex, so you tell her that you'll make something bad happen to her reputation or employment if she doesn't give you oral sex.	<b>.88</b>	<b>.87</b>	.02
8	You're with a woman you just met who is wearing a sexy dress and has been flirting with you. You grab her butt, but she pushes your hand away. You grab her butt again.	<b>.83</b>	<b>.82</b>	.02
9	Your date/girlfriend/wife refuses to let you kiss or sexually touch her, so you intimidate her by yelling, swearing, or breaking stuff until she lets you kiss or sexually touch her.	<b>.90</b>	<b>.87</b>	.02
10	You have sex with a woman who was flirting with you and wearing a sexy dress when she is too drunk or high to know or stop what is happening.	<b>.82</b>	<b>.83</b>	.02
11	Your girlfriend/wife is refusing to have sex with you, so you tell her that you'll post sexual pictures of her on the internet if she doesn't have sex with you.	<b>.87</b>	<b>.90</b>	.02
12	Your date/girlfriend/wife refuses to give you oral sex, so you physically force her (for example, by holding her down) to give you oral sex.	<b>.87</b>	<b>.87</b>	.02
13	You're having vaginal sex with your date/girlfriend/wife. You push your penis against her anus to have anal sex with her, but she moves your penis away and says she doesn't want to have anal sex. You have anal sex with her anyway.	<b>.78</b>	<b>.82</b>	.02

*Note.* EFA = exploratory factor analysis. CFA = confirmatory factor analysis. Factor loadings and estimates  $\geq .40$  are bolded.

<sup>a</sup>Standardized estimates were computed using STDY standardization in Mplus.

## 2.3 Study 2: Confirmation of Unidimensional Structure

The purpose of Study 2 was to confirm the unidimensional structure of the ASAW found in Study 1. Specifically, I collected data from a new sample of men from the community and tested the unidimensional structure using confirmatory factor analysis (CFA).

### 2.3.1 Method

#### 2.3.1.1 Participants

A total of 648 men living in Canada or the United States who are sexually attracted to women completed this study and met the inclusion criteria. Due to an error in data collection<sup>9</sup>, partial response data (i.e., data from individuals who did not complete the study or who were screened out because they did not meet the inclusion criteria) were only available for the second half of the data collection period. Among participants for whom partial data were available ( $N = 735$ ), 33.7% ( $n = 248$ ) withdrew at some point during the study, with most withdrawals (73.3%,  $n = 184$ ) occurring on the first page of the survey (i.e., demographic questionnaire). Additionally, 11.2% ( $n = 54$ ) of participants did not complete the study (e.g., closed the window before completing). Of the remaining 430 participants, 10.0% ( $n = 43$ ) were excluded for failing more than one of the three attention-check questions and 8.4% ( $n = 36$ ) were excluded for speeding (i.e., responding in less than half the median time). These individuals were significantly younger ( $M =$

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<sup>9</sup> I had originally planned to collect a total sample of 350 participants, but partial responses were accidentally not recorded by the survey platform for the first 297 participants. That is, data were not recorded for participants who withdrew or did not complete the study, completed the study in less than one half the median time (i.e., speeders), or failed more than one of three attention-check questions designed to identify inattentive respondents. Survey administrators quickly remedied this error and collected a new sample ( $n = 351$ ), including partial responses ( $n = 384$ ).

30.1,  $SD = 8.3$ ) than participants retained for analysis ( $M = 33.7$ ,  $SD = 11.8$ ),  $d = -0.32$ , 95% CI [-0.57, -0.08]; no significant differences were observed for race/ethnicity,  $\phi = .10$ ,  $p = .809$ , relationship status,  $\phi = .11$ ,  $p = .240$ , or education,  $\phi = .06$ ,  $p = .441$ .

Excluding these participants resulted in a subsample of 351. Because I have no reason to suspect that partial data would have differed for the first half of the data collection period, I combined this sample with the first 297 participants who met the inclusion criteria but for whom partial data were not available. This resulted in a final sample of 648 participants.

As in Study 1, I set age quotas to recruit mostly younger men. Additionally, a country quota was set to recruit equally from Canada and the United States. Both quotas were met, with the exception that a slightly larger number of participants aged 31-40 were recruited to compensate for the slow uptake of 18–30-year-olds. Participants were on average 35.3 years of age ( $SD = 13.16$ ), ranging from 18 to 89. Most identified as White (71.1%,  $n = 461$ ), followed by East/Southeast Asian (9.1%,  $n = 59$ ), Black (6.8%,  $n = 44$ ), South Asian (4.8%,  $n = 31$ ), Latino (4.0%,  $n = 26$ ), Indigenous (1.5%,  $n = 10$ ), Middle Eastern (1.2%,  $n = 8$ ), and another race category (1.4%,  $n = 9$ ); 4.8% ( $n = 31$ ) identified as more than one race category. Of those who reported their education level ( $N = 639$ ), most completed college or university (67.4%,  $n = 431$ ), 30.0% ( $n = 192$ ) completed high school, and 2.5% ( $n = 16$ ) did not complete high school. Of those who indicated their relationship status ( $N = 646$ ), 42.9% ( $n = 277$ ) were married, 37.5% ( $n = 242$ ) were single, 16.1% ( $n = 104$ ) were in a romantic relationship or living with a romantic partner, and 3.6% ( $n = 23$ ) were separated, divorced, or widowed.

### **2.3.1.2 Procedure**

Participants were recruited through Qualtrics from an online panel of participants. An invitation which included a link to the survey was sent to eligible panel participants. If they clicked on the study link in the invitation, they were presented with a consent form (see Appendix G). Those who consented were presented with a demographic questionnaire (see Appendix H), followed by the ASAW (see Appendix I). Next, participants were presented with three other measures assessing cognitions regarding rape and three measures of sexually aggressive behaviour (not included in the current study). Three attention-check questions were randomly distributed throughout the measures (see Appendix J). When participants completed the study or withdrew, they were presented with pictures of nature scenes intended to elevate mood followed by a debriefing form (see Appendix K). Participants received a small reward for their time. This study was approved by the Carleton University Research Ethics Board.

### **2.3.2 Results**

I included the ASAW items in a CFA to test the one-factor structure indicated by the EFA in Study 1. Analyses were conducted in Mplus Version 8.2 using the WLSMV estimator. Polychoric correlations ranged from .52 to .84, indicating the correlation matrix was suitable for factor analysis. The unidimensional model fit the data well (RMSEA = .07, 90% CI [.06, .08]; CFI = .98; SRMR = .04) and all items were strongly associated with the latent factor (see Table 2.1 for standardized coefficient estimates). In line with the EFA results from Study 1, CFA results further suggest that responses on the ASAW are driven by a single underlying construct.

### **2.3.3 General Discussion**

The purpose of these studies was to develop a new measure of attitudes toward sexual aggression against women and confirm its factor structure. Beginning with a large pool of potential items, non-redundant items with the highest variance were selected based on the responses from three independent samples of men from the community. This process resulted in the 13-item Attitude toward Sexual Aggression against Women (ASAW) scale. Compared to previous measures of attitudes toward sexual aggression, the ASAW includes a broader range of sexually aggressive acts and tactics. Additionally, unlike previous measures, the ASAW includes potentially mitigating contexts that have been shown to decrease perceived perpetrator culpability and increase victim blaming. Furthermore, the ASAW has demonstrated improved psychometric properties relative to previous measures of attitudes toward sexual aggression. Specifically, the issue of multicollinearity across items was completely eliminated and floor effects were reduced. This suggests that the ASAW may be more sensitive to individual differences and prosocial changes in attitudes toward sexual aggression compared to previous measures.

Results from the EFA suggested that the ASAW items fit a one-factor model, which was subsequently confirmed using CFA with a large, independent sample of men from the community. This is consistent with contemporary theoretical conceptualizations of the attitude construct that imply a unidimensional structure (Ajzen et al., 2018; Fishbein & Ajzen, 1975). For instance, an attitude is defined as a summary evaluation of an attitude object; thus, whereas a person can hold several evaluations relevant to the attitude object, a single attitude is constructed from those evaluations. The current findings are also in line with previous studies that have examined the factor structure of measures designed to assess attitudes toward sexual aggression. For instance, an EFA

conducted by Nunes et al. (2018) found that items from the Evaluation of Rape Scale all loaded strongly onto a single factor. Similarly, Pedneault, Hermann, and Nunes (2020) found that items from the Evaluation SES-TFR fit a one-factor structure. In sum, consistent with theory and research on attitudes, evidence suggests that the ASAW scale is unidimensional.

### **2.3.3.1 Limitations**

The ASAW was only developed to assess attitudes toward sexual aggression against women as perpetrated by men, which limits its generalizability with respect to other forms of sexual aggression. For instance, women also engage in sexually aggressive behaviour and men are far too frequently the victims of sexual assault (e.g., Stemple et al., 2017). Furthermore, sexual (e.g., gay, lesbian, pansexual) and gender (e.g., non-binary) minorities represent high-risk groups for sexual victimization (McCauley et al., 2018). For the ASAW, I chose to focus on sexual aggression against women as perpetrated by men as a first step because women represent the majority of sexual assault victims and men represent the majority of sexual assault perpetrators. However, future research should consider all forms/victims of sexual aggression in the development of new measures of attitudes toward sexually aggressive behaviour.

The ASAW includes items that depict behaviours that do not meet legal definitions of sexual assault in North America; consequently, some may question the extent to which certain items qualify as sexually aggressive. In the past, researchers have made the distinction between verbally coercive and physically aggressive behaviour (e.g., Hermann et al., 2018). However, evidence suggests that these behaviours likely represent a continuum (less severe to more severe) rather than different categories of behaviour (e.g.,

Bouffard & Goodson, 2017). Thus, including “less severe” forms of sexual aggression appears important to capture the full distribution of attitudes toward sexual aggression, especially in non-forensic/correctional populations which are presumably less antisocial. Furthermore, factor analyses suggested that responses across the various sexually aggressive behaviours were driven by a single underlying construct, further supporting their inclusion in the scale.

### **2.3.4 Conclusions and Next Steps**

This study represents the first step in the development and validation of a new measure of attitudes toward sexual aggression. The ASAW is the first measure of attitudes toward sexual aggression for which items were empirically derived. Additionally, consistent with theoretical models of the attitude construct, results confirmed the ASAW’s unidimensional structure. Importantly, the current paper does not provide any evidence for the validity of ASAW scores. This is addressed in the following chapters. First, to ensure that the ASAW would make a useful contribution to research and practice aimed at understanding sexual aggression, Chapter 3 examines the extent to which the ASAW is distinct from other measures of offence-supportive cognition known to be associated with sexually aggressive behaviour (i.e., discriminant validity), as well as the extent to which ASAW scores explain incremental variance in sexually aggressive behaviour after accounting for other measures of offence-supportive cognitions (i.e., incremental validity). Additionally, Chapter 4 presents the results of an experimental test of the ASAW’s construct validity to begin exploring the extent to which its scores truly reflect attitudes toward sexual aggression against women.

## **Chapter 3: Attitude toward Sexual Aggression against Women (ASAW)**

### **Scale: Discriminant and Incremental Validity**

The purpose of this research paper was to begin examining the ASAW's discriminant and incremental validity. Given that several measures have already been developed to assess cognitions relevant to sexual aggression (i.e., offence-supportive cognitions), it is important to understand how the ASAW fits within this broader literature. Therefore, the current study examined the extent to which the ASAW is distinct from widely used measures of offence-supportive cognitions (i.e., discriminant validity). Additionally, given that the primary purpose for developing the ASAW is to facilitate research on the relationship between attitudes and sexually aggressive behaviour, I also examined the extent to which the ASAW explains unique variance in sexual aggression after accounting for other offence-supportive cognitions (i.e., incremental validity).

### 3.1 Introduction

The current study is the first to examine the ASAW's discriminant and incremental validity. It is important to examine discriminant and incremental validity to demonstrate the extent to which the ASAW provides novel and useful information for research and practice. Discriminant validity involves demonstrating that a measure is empirically distinct from measures of theoretically distinct constructs (Clark & Watson, 2019). For instance, if two measures of different constructs are too strongly associated relative to what would be expected based on theory and previous research, this could indicate a lack of discriminant validity. Relatedly, incremental validity is the extent to which a measure explains unique variance in a criterion beyond that which is already explained by other relevant sources of data (Clark & Watson, 2019). For instance, if a measure is independently associated with a criterion variable after accounting for other measures of theoretically relevant constructs, this would provide evidence of incremental validity.

In some cases, the most important distinctions to demonstrate are those between theoretically distinct but closely related constructs. With respect to the ASAW, it was developed to address a perceived gap in the literature regarding offence-supportive cognitions. That is, measures of offence-supportive cognition appear to be assessing something other than attitudes toward sexual aggression; thus, the ASAW was developed to address this gap. However, if evidence suggests that the ASAW does not measure an empirically distinct construct from that which is already captured by other measures of offence-supportive cognitions, then this would suggest that the measure does not contribute any novel information. Furthermore, given that the ASAW was developed to

further research on the causes of sexual aggression, its scores should explain unique variance in sexually aggressive behaviour, over and above that which is explained by widely available measures of offence-supportive cognitions. If the ASAW does not explain unique variance in sexual aggression, this would limit its potential empirical and practical contributions to understanding and addressing sexually aggressive behaviour.

### **3.1.1 Offence-Supportive Cognitions**

*Offence-supportive cognition* is an umbrella term used to encompass a wide range of cognitions thought to be associated with the perpetration of sexually aggressive behaviour (e.g., Hall & Hirschman, 1991; Johnson & Beech, 2017; Malamuth et al., 1996; Murnen et al., 2002; Ward & Beech, 2006; Ward et al., 2006), such as rape myth acceptance, cognitive distortions, and rape supportive beliefs. Research shows that offence-supportive cognitions are associated with sexually aggressive behaviour (e.g., Malamuth et al., 1996; Murnen et al., 2002; Pedneault, Hermann, & Nunes, 2020; Pedneault, Nunes, et al., 2020; Suarez & Gadalla, 2010); however, the distinctions and/or overlap between different offence-supportive cognitions have received little empirical attention (Hermann et al., 2012; Maruna & Mann, 2006; Nunes et al., 2016; Pedneault, Hermann, & Nunes, 2020; Ward et al., 2006). That said, reviews of commonly used measures of offence-supportive cognitions suggest that they may be assessing something other than attitudes toward sexual aggression (Nunes et al., 2013, 2018).

To illustrate, recall that the defining feature of attitudes is evaluation (i.e., favourable or unfavourable evaluation of a psychological object). Now, consider the items from three commonly used measures of offence-supportive cognition presented in Table 3.1. These items are from the Illinois Rape Myth Acceptance Scale (IRMAS;

Payne et al., 1999), RAPE Scale (Bumby, 1996), and Attitudes Toward Rape scale (ATR; Feild, 1978), all of which ask respondents to rate their agreement with various statements. Would endorsement of any of these statements require someone to evaluate sexual aggression favourably or unfavourably? For example, could someone at once agree that “Women generally want sex no matter how they can get it” and hold an unfavourable attitude toward sexual aggression against women? Preliminary evidence suggests that these cognitions may indeed be distinct (Ajzen, 1991, 2001; Nunes et al., 2013, 2018; Pedneault, Hermann, & Nunes, 2020).

**Table 3.1.**

*Items from Three Commonly Used Measures of Offence-Supportive Cognition*

Measure		
IRMAS	RAPE Scale	ATR
<ul style="list-style-type: none"> <li>• A lot of women lead a man on and then they cry rape.</li> <li>• Rape is unlikely to happen in the woman’s own familiar neighborhood.</li> <li>• Men from nice middle-class homes almost never rape.</li> </ul>	<ul style="list-style-type: none"> <li>• Women generally want sex no matter how they can get it.</li> <li>• If women did not sleep around so much, they would be less likely to get raped.</li> <li>• A lot of men who rape do so because they are deprived of sex.</li> </ul>	<ul style="list-style-type: none"> <li>• Most women secretly desire to be raped.</li> <li>• A charge of rape two days after the act has occurred is probably not rape.</li> <li>• In order to protect the male, it should be difficult to prove that a rape has occurred.</li> </ul>

*Notes:* IMRAS = Illinois Rape Myth Acceptance Scale. ATR = Attitudes Toward Rape

In a sample of 660 male undergraduate students, Nunes et al. (2018) used exploratory factor analysis (EFA) to examine the overlap and distinctiveness between the RAPE Scale and a semantic differential measure of attitudes toward rape (Evaluation of

Rape Scale). The EFA yielded two factors, such that all the attitude items loaded highly on one factor and all the RAPE Scale items loaded highly on a separate factor. This suggests that scores on the Evaluation of Rape Scale and the RAPE Scale may be driven by distinct underlying constructs. Notably, the results also suggested that these constructs were moderately correlated ( $r = .46$ ), indicating that participants who endorsed more positive attitudes toward rape also endorsed more cognitive distortions regarding rape. Furthermore, regression analyses revealed that scores on both measures were independently associated with self-reported past sexual aggression and likelihood to rape, suggesting that both measures provided unique information relevant to sexually aggressive behaviour against women.

In a conceptual replication with a sample of community men and different measures of attitudes and sexual aggression, Pedneault, Hermann, and Nunes (2020) reported similar findings. Specifically, in a sample of 507 men from the community, EFA results revealed that items from the Evaluation Sexual Experience Survey-Tactics First Revised (Evaluation SES-TFR; Hermann et al., 2018) formed a distinct factor from the RAPE Scale items. Again, factors were moderately correlated ( $r = .44$ ). Additionally, after accounting for the RAPE Scale, the Evaluation SES-TFR was independently associated with self-reported past sexual aggression, likelihood of engaging in sexually aggressive behaviour, and likelihood to rape. Together, these studies suggest that attitudes may be distinct from other offence-supportive cognitions and explain incremental variance in sexually aggressive behaviour.

### **3.1.2 Present Study**

As an initial test of the ASAW's discriminant validity, I conducted a series of EFAs to explore the overlap and distinctiveness across the ASAW and three commonly used measures of offence-supportive cognition, namely, the IRMAS (Short-Form), RAPE Scale, and ATR. If the ASAW items separate from the items of these other measures of offence-supportive cognition, this would provide evidence of discriminant validity. Alternatively, if the items from the ASAW load highly on the same factor(s) as the other measures, this would suggest a lack of discriminant validity.

To test the ASAW's incremental validity, I estimated separate multiple regression models to examine the extent to which the ASAW is independently associated with self-reported indicators of sexually aggressive behaviour after accounting for each of the other measures of offence-supportive cognitions. Specifically, I examined relationships with self-reported past sexual aggression, likelihood of engaging in sexually aggressive behaviours, and likelihood to rape. If the ASAW explains unique variance in these indicators of sexually aggressive behaviour after accounting for the other measures of offence supportive cognition, this would provide evidence of incremental validity. Alternatively, if the ASAW is not independently associated with sexual aggression, this would suggest that it does not contribute any new information relevant to sexually aggressive behaviour.

## **3.2 Method**

### **3.2.1 Participants**

The data examined in this study are from the same sample of men used to confirm the factor structure of the ASAW (Pedneault et al., 2021; Study 2). Therefore, details regarding data exclusions are not reiterated here. However, given that the current study

involved multivariate analyses, one additional participant was excluded because they demonstrated a response set (i.e., selecting the same response across long questionnaires, but alternating the extremeness of their response between measures) resulting in an extreme multivariate outlier. Thus, the final sample consisted of 647 participants. Participants were on average 35.3 years of age ( $SD = 13.16$ ), ranging from 18 to 89. Most identified as White (71.3%,  $n = 461$ ), followed by East/Southeast Asian (9.1%,  $n = 59$ ), Black (6.8%,  $n = 44$ ), South Asian (4.6%,  $n = 30$ ), Latino (4.0%,  $n = 26$ ), Indigenous (1.5%,  $n = 10$ ), Middle Eastern (1.2%,  $n = 8$ ), and another race category (1.4%,  $n = 9$ ); 4.8% ( $n = 31$ ) identified as more than one race category. Of those who reported their education level ( $n = 638$ ), most completed college or university (67.4%,  $n = 430$ ), 30.1% ( $n = 192$ ) completed high school, and 2.5% ( $n = 16$ ) did not complete high school. Of those who indicated their relationship status ( $n = 645$ ), 42.9% ( $n = 277$ ) were married, 37.4% ( $n = 241$ ) were single, 16.1% ( $n = 104$ ) were in a romantic relationship or living with a romantic partner, and 3.6% ( $n = 23$ ) were separated, divorced, or widowed. Additionally, most participants reported being mostly sexually attracted to women (95.2%,  $n = 616$ ) and 4.8% ( $n = 31$ ) reported being mostly sexually attracted to both women and men equally.

### **3.2.2 Measures**

#### **3.2.2.1 Demographic Questionnaire**

Demographic questions included age, gender, country of residence, race/racial background, education, relationship status, and sexual orientation (see Appendix H).

Participants were screened out of the study if they indicated that they were younger than

18, not male, not from Canada or the United States, or not mostly sexually attracted to women or men and women equally.

### **3.2.2.2 Attitudes toward Sexual Aggression against Women**

The ASAW is a 13-item self-report measure designed to measure attitudes toward sexual aggression against women among men from the general community (Appendix I). Respondents are asked to evaluate various sexually aggressive behaviours against women using the following 4-point response scale: (1) *very bad*, (2) *pretty bad*, (3) *not that bad*, and (4) *not at all bad*. Sexually aggressive scenarios range from unwanted sexual touching (e.g., You're talking with a woman you just met. You put your hand on her leg, but she pushes it away. You put your hand back on her leg.) to forced sexual activity (e.g., Your date/girlfriend/wife refuses to give you oral sex, so you physically force her [for example, by holding her down] to give you oral sex). Items are averaged to compute a total score, with possible scores ranging from 1-4. Higher scores are interpreted as indicating more positive attitudes toward sexual aggression against women. Previous research has shown that the ASAW is unidimensional and has excellent internal consistency ( $\alpha = .93$  [Study 1]; Pedneault et al., 2021). Internal consistency was also excellent in the current sample ( $\alpha = .92$ ).

### **3.2.2.3 Rape Myth Acceptance**

The Illinois Rape Myth Acceptance-Short Form (IRMAS-SF, Payne et al., 1999; see Appendix L) is a 20-item self-report scale designed to assess rape myth acceptance, defined as “attitudes and beliefs that are generally false but are widely and persistently held, and that serve to deny and justify male sexual aggression against women [Lonsway

& Fitzgerald, 1994, p.134]”. Example items include “If a woman is raped while she is drunk, she is at least somewhat responsible for letting things get out of control” and “Men don’t usually intend to force sex on a woman, but sometimes they get too sexually carried away”. Participants were asked to rate their agreement with each item on the following 4-point scale: (1) *not at all agree*, (2) *slightly agree*, (3) *mostly agree*, (4) *very much agree*. Unlike the long form of the IRMAS, the IRMAS-SF was designed to assess general rape myth acceptance and, thus, does not have any subscales. A total score is computed by summing responses to 17 of the 20 items; three items are filler items. Total scores can range from 17 to 68, with higher scores indicating greater endorsement of rape myths. The IRMAS-SF has demonstrated excellent internal consistency in previous research with community men (e.g.,  $\alpha = .89$ ; Widman & Olson, 2013) and in the current study ( $\alpha = .91$ ).

#### **3.2.2.4 Cognitive Distortions**

The RAPE Scale (Bumby, 1996; see Appendix M) is a measure of cognitive distortions, defined as “learned assumptions, sets of beliefs, and self-statements about deviant sexual behaviors such as child molestation and rape which serve to deny, justify, minimize, and rationalize an offender’s actions” (p. 38). It is a self-report scale that asks participants to rate their endorsement of 36 statements on a 4-point Likert-type scale: (1) *strongly disagree*, (2) *disagree*, (3) *agree*, (4) *strongly agree*. Example statements include “A lot of women claim they were raped just because they want attention” and “Men who commit rape are probably responding to a lot of stress in their lives, and raping helps to reduce that stress”. A total score is computed by summing the items (total scores can range from 36 to 144), with higher scores indicating greater endorsement of cognitive

distortions. The RAPE Scale has demonstrated excellent internal consistency ( $\alpha = .96$ , Bumby, 1996; average  $\alpha = .95$ , Nunes et al., 2016) and test-retest reliability was high after a 2-week interval ( $r = .86$ ; Bumby, 1996) in samples of men with a history of sexual offending. It has also shown excellent internal consistency among community men in past research (e.g.,  $\alpha = .96$ , Pedneault, Hermann, & Nunes, 2020) and in the current sample ( $\alpha = .96$ ).

### **3.2.2.5 Beliefs about Rape**

The Attitudes Toward Rape (ATR) scale (Feild, 1978; see Appendix N) is a 32-item self-report scale designed to measure “people’s beliefs or opinions about rape” (p. 158). Each item was rated on the following 4-point Likert-type scale: (1) *strongly disagree*, (2) *disagree*, (3) *agree*, (4) *strongly agree*. Based on a principal components analysis of the ATR with a large community sample, Feild (1978) identified eight subscales: (a) Woman's Responsibility for Rape Prevention (11 items), (b) Victim Precipitation of Rape (3 items), (c) Severe Punishment for Rape (4 items), (d) Favourable Perception of a Woman After Rape (2 items), (e) Resistance as a Woman’s Role During Rape (2 items), (f) Sex as Motivation for Rape (4 items), (g) Normality of Rapists (2 items), and (h) Power as Motivation for Rape (4 items). However, this factor structure was not replicated in the current sample. As described in more detail in the Results section, all the items were included in an EFA. ATR items separated onto two factors, which appeared to reflect pro-rape beliefs and anti-rape beliefs, respectively (refer to Section 3.3.1.3 below for the EFA results). Additionally, several items did not load onto any of the factors. Thus, total scores were computed using only the items that loaded on either the pro-rape or anti-rape factors.

Specifically, 19 items with loadings  $\geq .40$  on the first factor were summed to create a pro-rape beliefs total score (ATR Pro-Rape)<sup>10</sup>, with higher scores indicating relatively more agreement with rape supportive beliefs, such as “A woman should be responsible for preventing her own rape” and “It would do some women some good to get raped”. Total scores could range from 19 to 76 and internal consistency was excellent ( $\alpha = .91$ ). Next, the six items with loadings  $\geq .40$  on the second factor were summed to create an anti-rape beliefs total score (ATR Anti-Rape). Scores could range from 6 to 24, with higher scores indicating relatively more agreement with anti-rape beliefs, such as “All rapists are mentally sick” and “A man who has committed rape should be given at least 30 years in prison”. Internal consistency was lower for these items ( $\alpha = .67$ ); thus, results involving this scale should be interpreted with caution.

### **3.2.2.6 Past Sexually Aggressive Behaviour**

Past sexually aggressive behaviour was assessed using the Sexual Experience Survey-Tactics First: Revised (SES-TFR, Hermann et al., 2018; see Appendix O.1), a modified version of the ‘Tactics First’ version of the Sexual Experience Survey (SES-TF) developed by Abbey et al. (2005). The original SES was developed by Koss and colleagues (Koss & Gidycz, 1985; Koss, et al., 1987; Koss & Oros, 1982) and has been revised numerous times since then (see Koss et al., 2007). The SES measures, including the SES-TF (e.g., Abbey et al., 2005; Davis, Gilmore et al., 2014; Widman & Olson,

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<sup>10</sup> Two items were excluded from the total scores because they cross-loaded ( $\geq .40$ ) on more than one factor and were not clearly pro-rape or anti-rape beliefs (i.e., “Rapists are sexually frustrated individuals” and “The reason most rapists commit rape is for sex”). This is consistent with Feild's (1978) initial conclusion that these items could not be classified as either pro or anti rape.

2013), are widely used to assess sexually aggressive behaviours (e.g., Abbey et al., 2007; Davis, Gilmore et al., 2014; Thompson et al., 2011).

The SES-TF asks participants about the frequency with which they have engaged in a number of sexual acts (e.g., sexual touching, oral sex, and vaginal sex) using the following sexually aggressive tactics since the age of 14: (a) arguments and pressure, (b) lies or false promises, (c) guilt or displeasure, (d) giving a woman drugs or alcohol, (e) taking advantage of a woman when she is incapacitated due to drugs or alcohol, and (f) physical force. Frequency is typically assessed on a 4- or 6- point scale ranging from *never to three/five times or more*.

Hermann et al. (2018) modified the SES-TF in several ways. First, the response scale was modified to a 10-point scale to assess frequencies of up to *nine times or more*. The scale was modified to assess a wider range of frequencies to make certain responses appear less extreme, with the goal of increasing honest reporting. Second, participants were asked to recall sexually aggressive behaviours since the age of 16, rather than 14, because this is the age of consent in Canada. Third, a definition of ‘woman’ was provided. Specifically, participants were instructed that “By ‘woman’ we mean any female 16 years old or older, or a female under 16 if she was less than 5 years younger than you at the time of the sexual contact (for example, you were 17 and she was 15)”. Fourth, the SES-TF was modified such that ‘anal sex’ and ‘inserting an object into her’ were treated as separate sexual acts, rather than one type of sexual behaviour.

The SES-TFR was scored using the separate outcomes and tactics severity weighting scheme developed by Davis, Gilmore et al. (2014), with higher scores indicating more past sexual aggression. Research suggests that sexually aggressive

behaviour can be reasonably accurately assessed using self-report measures (e.g., Pham et al., 2021; Weinrott & Saylor, 1991).

### **3.2.2.7 Likelihood of Engaging in Sexually Aggressive Behaviour**

The Proclivity SES-TFR (Hermann et al., 2018; see Appendix O.2) was used to assess likelihood of engaging in sexual aggression in the future. Participants are asked to rate the likelihood with which they would engage in each of the 36 sexually aggressive behaviours included in the SES-TFR. Each item is rated on a 7-point scale from (1) *not at all likely* to (7) *very likely*. A total score is computed by averaging responses to the 36 items (ranging from 36 to 252), with higher scores indicating a greater likelihood of engaging in sexually aggressive behaviour. The Proclivity SES-TFR has been found to predict subsequent sexually aggressive behaviour over a 4-month follow-up period among men from the community (Hermann et al., 2021).

### **3.2.2.8 Likelihood to Rape**

Likelihood to rape was assessed using the Likelihood to Rape Question (LR [see Appendix P]; Malamuth, 1981). Participants were asked the likelihood that they would rape a woman if they could be assured of not being caught or punished on a 5-point scale from (1) *not at all likely* to (5) *very likely*. The LR has also been found to predict subsequent sexual aggression during a 4-month follow-up period among men from the community (Hermann et al., 2021).

### **3.2.2.9 Attention-Check Questions**

Three instructional attention-check questions designed to detect inattentive respondents were randomly distributed throughout the survey (Appendix J). For example,

participants were asked “Data quality is important to us. Please select ‘not that bad’ to show that you have read this question. We appreciate your continued attention”.

Participants who did not select “not that bad” in response to this item failed that attention-check question. Participants who failed more than one of the three attention-check questions were excluded from the analyses.

### **3.2.3 Procedure**

An invitation which included a link to the survey was sent to eligible panel participants (i.e., men [18 or older] living in Canada or the United States who are sexually interested in women). If they clicked on the study link in the invitation, they were presented with a consent form outlining the risks and benefits of participating in the study (Appendix G). Those who agreed to participate were presented with the demographic questionnaire, followed by the ASAW. Next, participants were presented with the IRMAS-SF, RAPE Scale, and ATR in a counterbalanced order. Participants were then asked to complete the SES-TFR and the Proclivity SES-TFR, such that participants were asked about past and future proclivity for one sexually aggressive behaviour before moving on to the next. Participants then completed the LR question. Three attention-check questions were distributed throughout the survey. When participants completed the study or withdrew, they were presented with pictures of nature scenes intended to elevate mood and a debriefing form with information about the study goals and resources they can access if they have additional questions or if they feel distressed (see Appendix K). Participants who completed the study received a small monetary reward for their time. This study was approved by the Carleton University Research Ethics Board.

### **3.2.4 Overview of Analyses and Data Management**

#### **3.2.4.1 Exploratory Factor Analysis**

I conducted three separate exploratory factor analyses (EFA) to examine the overlap and distinctiveness between the ASAW and the IRMAS-SF, RAPE Scale, and ATR. The EFAs were conducted following the same procedures as outlined in Pedneault et al. (2021, Study 1).

#### **3.2.4.2 Correlations**

Using SPSS version 27, I examined the bivariate Pearson product-moment correlations between total scores on all measures. Scatterplots of each bivariate relationship indicated linear associations. All measures were severely positively skewed and had multiple outliers ( $\pm 3.29$  *SDs* away from the mean). Therefore, I computed bias corrected and accelerated (BCa) 95% bootstrapped confidence intervals around each correlation. BCa 95% bootstrapped confidence intervals do not assume a normal distribution and correct for skewed distributions, which reduces bias in the estimation of standard errors (Banjanovic & Osborne, 2016). I also computed Spearman's rank-order non-parametric correlations to examine the association between score rankings on each measure.

#### **3.2.4.3 Multiple Regression Models**

For each of the three offence-supportive cognition measures, three separate regression models were tested to examine the extent to which the ASAW is independently associated with one of the following outcome variables: past sexual aggression (SES-TFR), likelihood of engaging in sexual aggression (Proclivity SES-

TFR), and likelihood to rape (LR). For each model, the measure of offence-supportive cognition was entered first, followed by the ASAW in the second step of the model. I examined each model for influential residual outliers using a two-step process (Aguinis et al., 2013). First, I identified potential outliers, defined as cases with standardized residuals  $\pm 2.24$  and/or Mahalanobis distance greater than critical  $\chi^2$ , where the  $df$  = number of variables in the model and alpha level =  $\alpha/n$ . Then, I identified influential outliers as those with DFFITS values  $\pm 2\sqrt{\frac{k+1}{n}}$ , DFBETAS values  $\pm 2/\sqrt{n}$ , and/or Cook's Distance values  $>$  critical  $F$  with  $df_1 = (k + 1)$ ,  $df_2 = (n - k - 1)$  and alpha level = .50, where  $k$  is the number of predictors in the model. I conducted analyses with and without influential outliers. Regardless of outliers, the assumptions of normally distributed and homoscedastic error terms were violated; therefore, I computed BCa 95% bootstrapped confidence intervals to reduce bias in the estimated standard errors. Tolerance and VIF values were examined to determine if multicollinearity was present across predictors. Tolerance values below .20 and VIF values above 10 indicate that multicollinearity may be an issue. These analyses were all conducted in SPSS version 27.

### **3.3 Results**

#### **3.3.1 Is the ASAW Distinct from Other Measures of Offence-Supportive Cognition?**

##### **3.3.1.1 Rape Myth Acceptance**

The first EFA examined the factor structure of the ASAW and IRMAS-SF items. Polychoric bivariate correlations between these items ranged from .19 to .84, with most falling between .30 and .80. The MAP test suggested retaining up to two factors and parallel analysis suggested retaining up to seven factors. However, only three eigenvalues

were larger than 1.00, suggesting that only three factors explained more variance in the data than a single item. Thus, I extracted models with one to three factors. All the items loaded ( $\geq .40$ ) onto a single factor in the one-factor model but fit indices indicated poor fit (RMSEA = .08, 90% CI [.079, .086]; CFI = .91; SRMR = .12). In contrast, the two-factor model fit the data well (RMSEA = .04, 90% CI [.037, .045]; CFI = .98; SRMR = .04). In this model, all the ASAW items loaded highly on one factor and all the IRMAS-SF items loaded highly on a second factor. Additionally, the two factors were highly correlated ( $r = .64, p < .05$ ). The three-factor model only provided trivial improvement in model fit (RMSEA = .03, 90% CI [.030, .039]; CFI = .99; SRMR = .03) and the third factor consisted primarily of weak cross-loadings ( $< .40$ ). Thus, the two-factor model was selected (see Table 3.2 for rotated factor loadings).

### **3.3.1.2 Cognitive Distortions**

A second EFA was conducted with the ASAW and RAPE Scale items. Polychoric correlations ranged from .20 to .84, suggesting that multicollinearity was not an issue. The MAP test and parallel analysis suggested retaining up to four and six factors, respectively. Additionally, six eigenvalues were larger than 1.00; therefore, I extracted models with up to six factors. As with the IRMAS-SF, the two-factor model fit the data well (RMSEA = .04, 90% CI [.039, .044]; CFI = .97; SRMR = .04) and provided improved fit over the one-factor model (RMSEA = .07, 90% CI [.064, .068]; CFI = .92; SRMR = .09). For the two-factor model, all ASAW items loaded highly onto one factor and all but one RAPE Scale item loaded highly onto a separate factor. Both factors were highly correlated ( $r = .65, p < .05$ ). Models with three factors (RMSEA = .04, 90% CI [.034, .039]; CFI = .98; SRMR = .04), four factors (RMSEA = .03, 90% CI [.031, .036];

**Table 3.2***Rotated Factor Loadings from 2-Factor EFA Solution with the IRMAS-SF (N = 647)*

<b>Item</b>	<b>Factor 1</b>	<b>Factor 2</b>
<b>ASAW Scale</b>		
1. You're with a woman who is wearing a sexy dress and has been flirting with you. She's refusing to let you kiss or sexually touch her, so you block her from getting away from you (for example, by blocking the doorway) until she lets you kiss or sexually touch her.	.17	<b>.63</b>
2. You're with a woman who is drunk or high. She's having sex with you but refuses to let you take sexual pictures of her. You take sexual pictures of her anyway.	.04	<b>.76</b>
3. You're talking with a woman you just met. You put your hand on her leg, but she pushes it away. You put your hand back on her leg.	-.07	<b>.82</b>
4. You have oral sex with your date/girlfriend/wife when she is too drunk or high to know or stop what is happening.	.01	<b>.78</b>
5. You're with a woman who is wearing a sexy dress and has been flirting with you. She's giving you oral sex but refuses to have sexual intercourse with you, so you tell her that you'll spread rumours about her if she doesn't have sex with you.	-.03	<b>.85</b>
6. Your date/girlfriend/wife agrees to have sex with you, but only if you wear a condom. You put a condom on. While you're having sex, you purposely break or remove the condom without her knowing and continue to have sex with her without a condom.	.12	<b>.73</b>
7. You're with a woman who is wearing a sexy dress and has been flirting with you. She refuses to give you oral sex, so you tell her that you'll make something bad happen to her reputation or employment if she doesn't give you oral sex.	-.04	<b>.90</b>
8. You're with a woman you just met who is wearing a sexy dress and has been flirting with you. You grab her butt, but she pushes your hand away. You grab her butt again.	.07	<b>.77</b>
9. Your date/girlfriend/wife refuses to let you kiss or sexually touch her, so you intimidate her by yelling, swearing, or breaking stuff until she lets you kiss or sexually touch her.	.001	<b>.88</b>
10. You have sex with a woman who was flirting with you and wearing a sexy dress when she is too drunk or high to know or stop what is happening.	.14	<b>.74</b>
11. Your girlfriend/wife is refusing to have sex with you, so you tell her that you'll post sexual pictures of her on the internet if she doesn't have sex with you.	-.06	<b>.94</b>

12. Your date/girlfriend/wife refuses to give you oral sex, so you physically force her (for example, by holding her down) to give you oral sex.	.20	<b>.74</b>
13. You're having vaginal sex with your date/girlfriend/wife. You push your penis against her anus to have anal sex with her, but she moves your penis away and says she doesn't want to have anal sex. You have anal sex with her anyway.	.09	<b>.76</b>

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**IRMAS-SF**

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1. If a woman is raped while she is drunk, she is at least somewhat responsible for letting things get out of control.	<b>.79</b>	-.01
2. Although most women wouldn't admit it, they generally find being physically forced into sex a real "turn-on."	<b>.77</b>	.03
3. If a woman is willing to "make out" with a guy, then it's no big deal if he goes a little further and has sex.	<b>.77</b>	.04
4. Many women secretly desire to be raped.	<b>.74</b>	.12
5. If a woman doesn't physically fight back, you can't really say that it was rape.	<b>.79</b>	.09
6. Men from nice middle-class homes almost never rape.	<b>.74</b>	-.07
7. Rape accusations are often used as a way of getting back at men.	<b>.75</b>	-.10
8. It is usually only women who dress suggestively that are raped.	<b>.86</b>	-.06
9. If the rapist doesn't have a weapon, you really can't call it rape.	<b>.78</b>	.13
10. Rape is unlikely to happen in the woman's own familiar neighborhood.	<b>.72</b>	.04
11. Women tend to exaggerate how much rape affects them.	<b>.80</b>	.08
12. A lot of women lead a man on and then they cry rape.	<b>.88</b>	-.11
13. A woman who "teases" men deserves anything that might happen.	<b>.85</b>	.03
14. When women are raped, it's often because the way they said "no" was ambiguous.	<b>.82</b>	.04
15. Men don't usually intend to force sex on a woman, but sometimes they get too sexually carried away.	<b>.74</b>	-.07
16. A woman who dresses in skimpy clothes should not be surprised if a man tries to force her to have sex.	<b>.86</b>	-.01
17. Rape happens when a man's sex drive gets out of control.	<b>.69</b>	-.14

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*Notes.* ASAW = Attitude toward Sexual Aggression against Women. IRMAS = Illinois Rape Myth Acceptance Scale. Bolded values indicate rotated factor loadings  $\geq .40$ .

CFI = .98; SRMR = .03) and more provided trivial improvements in model fit and additional factors consisted mostly of cross-loadings. Thus, the two-factor model was selected (see Table 3.3 for rotated factor loadings).

### **3.3.1.3 Beliefs about Rape**

Next, ASAW items were included in an EFA with the ATR items. Polychoric correlations ranged from .001 to .84, suggesting that multicollinearity was not an issue but that some items were completely unrelated. The MAP test suggested retaining up to five factors and parallel analysis suggested retaining up to 10 factors. However, only seven eigenvalues were larger than 1.00; thus, I extracted models with one to seven factors. The one-factor model demonstrated poor fit (RMSEA = .07, 90% CI [.072, .076]; CFI = .86; SRMR = .10), with several factor loadings < .40. The two-factor model showed improvement (RMSEA = .06, 90% CI [.056, .061]; CFI = .92; SRMR = .08), but still indicated poor fit. In this model, ASAW items clustered together onto a single factor and most ATR items loaded onto a separate factor; however, eight ATR items cross-loaded or had primary loadings on the same factor as the ASAW items. The three-factor model fit the data well (RMSEA = .04, 90% CI [.039, .044]; CFI = .96; SRMR = .05) and the factor loadings were more interpretable as few cross-loadings remained. Models with four (RMSEA = .036, 90% CI [.033, .039]; CFI = .97; SRMR = .04), five (RMSEA = .03, 90% CI [.027, .033]; CFI = .98; SRMR = .04), and more factors did not show meaningful improvements in model fit and generally consisted of cross-loadings and trivial factors (i.e., factors with fewer than three loadings  $\geq$  .40). Therefore, the three-factor model was selected (see Table 3.4 for rotated factor loadings).

**Table 3.3***Rotated Factor Loadings from 2-Factor EFA Solution with the RAPE Scale (N = 647)*

<b>Item</b>	<b>Factor 1</b>	<b>Factor 2</b>
<b>ASAW Scale</b>		
1. You're with a woman who is wearing a sexy dress and has been flirting with you. She's refusing to let you kiss or sexually touch her, so you block her from getting away from you (for example, by blocking the doorway) until she lets you kiss or sexually touch her.	.13	<b>.65</b>
2. You're with a woman who is drunk or high. She's having sex with you but refuses to let you take sexual pictures of her. You take sexual pictures of her anyway.	.11	<b>.71</b>
3. You're talking with a woman you just met. You put your hand on her leg, but she pushes it away. You put your hand back on her leg.	-.01	<b>.77</b>
4. You have oral sex with your date/girlfriend/wife when she is too drunk or high to know or stop what is happening.	.04	<b>.75</b>
5. You're with a woman who is wearing a sexy dress and has been flirting with you. She's giving you oral sex but refuses to have sexual intercourse with you, so you tell her that you'll spread rumours about her if she doesn't have sex with you.	.001	<b>.82</b>
6. Your date/girlfriend/wife agrees to have sex with you, but only if you wear a condom. You put a condom on. While you're having sex, you purposely break or remove the condom without her knowing and continue to have sex with her without a condom.	.16	<b>.70</b>
7. You're with a woman who is wearing a sexy dress and has been flirting with you. She refuses to give you oral sex, so you tell her that you'll make something bad happen to her reputation or employment if she doesn't give you oral sex.	-.04	<b>.90</b>
8. You're with a woman you just met who is wearing a sexy dress and has been flirting with you. You grab her butt, but she pushes your hand away. You grab her butt again.	.06	<b>.77</b>
9. Your date/girlfriend/wife refuses to let you kiss or sexually touch her, so you intimidate her by yelling, swearing, or breaking stuff until she lets you kiss or sexually touch her.	.03	<b>.86</b>
10. You have sex with a woman who was flirting with you and wearing a sexy dress when she is too drunk or high to know or stop what is happening.	.13	<b>.74</b>
11. Your girlfriend/wife is refusing to have sex with you, so you tell her that you'll post sexual pictures of her on the internet if she doesn't have sex with you.	-.09	<b>.97</b>

12. Your date/girlfriend/wife refuses to give you oral sex, so you physically force her (for example, by holding her down) to give you oral sex.	.24	.71
13. You're having vaginal sex with your date/girlfriend/wife. You push your penis against her anus to have anal sex with her, but she moves your penis away and says she doesn't want to have anal sex. You have anal sex with her anyway.	.14	.71

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**RAPE Scale**

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1. Men who commit rape are probably responding to a lot of stress in their lives, and raping helps to reduce that stress.	.65	-.10
2. Women who get raped probably deserved it.	.71	.10
3. Women generally want sex no matter how they can get it.	.65	.19
4. Since prostitutes sell their bodies for sexual purposes anyway, it is not as bad if someone forces them into sex.	.68	.23
5. If a woman does not resist strongly to sexual advances, she is probably willing to have sex.	.73	.12
6. Women often falsely accuse men of rape.	.87	-.33
7. A lot of women who get raped had "bad reputations" in the first place.	.70	.11
8. If women did not sleep around so much, they would be less likely to get raped.	.75	.09
9. If a woman gets drunk at a party, it is really her own fault if someone takes advantage of her sexually.	.86	-.06
10. When women wear tight clothes, short skirts, and no bra or underwear, they are asking for sex.	.80	.01
11. A lot of women claim they were raped just because they want attention.	.91	-.24
12. Victims of rape are usually a little bit to blame for what happens.	.79	.02
13. If a man has had sex with a woman before, then he should be able to have sex with her any time he wants.	.72	.23
14. Just fantasizing about forcing someone to have sex isn't all that bad since no one is really being hurt.	.38	.08
15. Women who go to bars a lot are mainly looking to have sex.	.76	-.01
16. A lot of times when women say "no" they are just playing hard to get, and really mean "yes."	.74	.16
17. Part of a wife's duty is to satisfy her husband sexually whenever he wants it, whether or not she is in the mood.	.71	.15
18. Often a woman reports rape long after the fact because she gets mad at the man she had sex with and is just trying to get back at him.	.89	-.16
19. As long as a man does not slap or punch a woman in the process, forcing her to have sex is not as bad.	.70	.24
20. When a woman gets raped more than once, she is probably doing something to cause it.	.80	.06
21. Women who get raped will eventually forget about it and get on with their lives.	.69	.12

22. On a date, when a man spends a lot of money on a woman, the woman ought to at least give the man something in return sexually.	<b>.77</b>	.15
23. I believe that if a woman lets a man kiss her and touch her sexually, she should be willing to go all the way.	<b>.76</b>	.10
24. When women act like they are too good for men, most men probably think about raping the women to put them in their place.	<b>.68</b>	.09
25. I believe that society and the courts are too tough on rapists.	<b>.64</b>	.08
26. Most women are sluts and get what they deserve.	<b>.72</b>	.17
27. Before the police investigate a woman's claim of rape, it is a good idea to find out what she was wearing, if she had been drinking, and what kind of person she is.	<b>.86</b>	-.11
28. Generally, rape is not planned--a lot of times it just happens.	<b>.70</b>	-.21
29. If a person tells himself that he will never rape again, then he probably won't.	<b>.58</b>	.06
30. A lot of men who rape do so because they are deprived of sex.	<b>.84</b>	-.30
31. The reason a lot of women say "no" to sex is because they don't want to seem loose.	<b>.71</b>	.02
32. If a woman goes to the home of a man on the first date, she probably wants to have sex with him.	<b>.74</b>	-.07
33. Many women have a secret desire to be forced into having sex.	<b>.78</b>	.003
34. Most of the men who rape have stronger sexual urges than other men.	<b>.82</b>	-.21
35. I believe that any woman can prevent herself from being raped if she really wants to.	<b>.78</b>	-.07
36. Most of the time, the only reason a man commits rape is because he was sexually assaulted as a child.	<b>.73</b>	-.06

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*Notes.* ASAW = Attitude toward Sexual Aggression against Women. Bolded values indicate rotated factor loadings  $\geq .40$ .

In the three-factor model, all the ASAW items loaded highly onto a single factor; whereas, the ATR items separated onto two distinct factors. As previously mentioned in the Measures section, these two factors appeared to reflect pro-rape beliefs (e.g., In most cases when a woman was raped, she was asking for it) and anti-rape beliefs (e.g., A convicted rapist should be castrated), respectively. The factor on which the ASAW items loaded was highly correlated with the ATR pro-rape beliefs factor ( $r = .66, p < .05$ ), but showed a small negative correlation with the ATR anti-rape beliefs factor ( $r = -.24, p < .05$ ). Similarly, the pro-rape beliefs factor showed a small negative correlation with the anti-rape beliefs factor ( $r = -.20, p < .05$ ). As previously mentioned, ATR items with loadings  $\geq .40$  on the pro-rape and anti-rape beliefs factors were summed to create the ATR Pro-Rape and ATR Anti-Rape total scores, respectively.

#### **3.3.1.4 Sensitivity Analyses**

Although EFA is useful for conducting item-level analyses and identifying cross-loading items, simulation studies suggest that it can be poor at detecting lack of discriminant validity (e.g., Henseler et al., 2015). Therefore, an alternative method for detecting discriminant validity, the heterotrait-monotrait (HTMT) ratio of correlations approach, was applied as described in Henseler et al. (2015). Specifically, I computed the inter-item Pearson correlation matrices between the ASAW and the IRMAS-SF, the RAPE Scale, and the ATR, respectively. Next, I computed the HTMT statistic for each correlation matrix (see Appendix Q for calculations). HTMT values below .85 indicate discriminant validity. HTMT statistics were all below .85, suggesting that the ASAW is empirically distinct from the IRMAS-SF (HTMT = 0.61), RAPE Scale (HTMT = 0.65), and ATR (HTMT = 0.65).

**Table 3.4***Rotated Factor Loadings from 3-Factor EFA Solution with the ATR (N = 647)*

<b>Item</b>	<b>Factor 1</b>	<b>Factor 2</b>	<b>Factor 3</b>
<b>ASAW Scale</b>			
1. You're with a woman who is wearing a sexy dress and has been flirting with you. She's refusing to let you kiss or sexually touch her, so you block her from getting away from you (for example, by blocking the doorway) until she lets you kiss or sexually touch her.	<b>.68</b>	.11	.03
2. You're with a woman who is drunk or high. She's having sex with you but refuses to let you take sexual pictures of her. You take sexual pictures of her anyway.	<b>.76</b>	.05	.02
3. You're talking with a woman you just met. You put your hand on her leg, but she pushes it away. You put your hand back on her leg.	<b>.78</b>	-.07	-.13
4. You have oral sex with your date/girlfriend/wife when she is too drunk or high to know or stop what is happening.	<b>.83</b>	-.07	.02
5. You're with a woman who is wearing a sexy dress and has been flirting with you. She's giving you oral sex but refuses to have sexual intercourse with you, so you tell her that you'll spread rumours about her if she doesn't have sex with you.	<b>.76</b>	.02	-.18
6. Your date/girlfriend/wife agrees to have sex with you, but only if you wear a condom. You put a condom on. While you're having sex, you purposely break or remove the condom without her knowing and continue to have sex with her without a condom.	<b>.70</b>	.14	-.04
7. You're with a woman who is wearing a sexy dress and has been flirting with you. She refuses to give you oral sex, so you tell her that you'll make something bad happen to her reputation or employment if she doesn't give you oral sex.	<b>.85</b>	.01	-.08
8. You're with a woman you just met who is wearing a sexy dress and has been flirting with you. You grab her butt, but she pushes your hand away. You grab her butt again.	<b>.78</b>	.06	-.002
9. Your date/girlfriend/wife refuses to let you kiss or sexually touch her, so you intimidate her by yelling, swearing, or breaking stuff until she lets you kiss or sexually touch her.	<b>.78</b>	.10	-.11
10. You have sex with a woman who was flirting with you and wearing a sexy dress when she is too drunk or high to know or stop what is happening.	<b>.80</b>	.07	.04
11. Your girlfriend/wife is refusing to have sex with you, so you tell her that you'll post sexual pictures of her on the internet if she doesn't have sex with you.	<b>.88</b>	-.03	-.15

12. Your date/girlfriend/wife refuses to give you oral sex, so you physically force her (for example, by holding her down) to give you oral sex.	<b>.72</b>	.21	-.01
13. You're having vaginal sex with your date/girlfriend/wife. You push your penis against her anus to have anal sex with her, but she moves your penis away and says she doesn't want to have anal sex. You have anal sex with her anyway.	<b>.76</b>	.10	.03

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**ATR**


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1. A woman can be raped against her will.	-.20	-.12	-.05
2. The reason most rapists commit rape is for the thrill of physical violence.	.04	.24	.18
3. Rapists are "normal" men.	-.05	.35	-.12
4. In forcible rape, the victim never causes the crime.	-.06	-.32	.13
5. All rapists are mentally sick. (AR)	.06	-.20	<b>.44</b>
6. A charge of rape two days after the act has occurred is probably not rape. (PR)	.19	<b>.63</b>	.01
7. A woman should be responsible for preventing her own rape. (PR)	.09	<b>.67</b>	.04
8. A man who has committed rape should be given at least 30 years in prison. (AR)	.28	-.27	<b>.75</b>
9. Women are trained by society to be rape victims. (PR)	-.02	<b>.62</b>	-.01
10. A raped woman is a less desirable woman. (PR)	.02	<b>.67</b>	.05
11. If a woman is going to be raped, she might as well relax and enjoy it. (PR)	.08	<b>.74</b>	-.16
12. Rape provides the opportunity for many rapists to show their manhood. (PR)	.01	<b>.58</b>	-.04
13. Most women secretly desire to be raped. (PR)	.07	<b>.76</b>	-.07
14. It would do some women some good to get raped. (PR)	.09	<b>.84</b>	-.04
15. Women provoke rape by their appearance or behavior. (PR)	.01	<b>.80</b>	.06
16. "Nice" women do not get raped. (PR)	.18	<b>.68</b>	.03
17. Most charges of rape are unfounded. (PR)	-.10	<b>.64</b>	.16
18. In order to protect the male, it should be difficult to prove that a rape has occurred. (PR)	-.11	<b>.77</b>	-.04
19. Rape is the expression of an uncontrollable desire for sex. (PR)	-.05	<b>.67</b>	.34
20. Rape is the worst crime that can be committed. (AR)	.25	.02	<b>.55</b>
21. Rape is a sex crime. (AR)	-.01	-.17	<b>.53</b>
22. All rape is a male exercise in power over women.	-.03	.32	.14
23. During a rape, a woman should do everything she can do to resist. (AR)	.12	.02	<b>.51</b>
24. Rapists are sexually frustrated individuals.	-.04	<b>.45</b>	<b>.43</b>

25. In most cases when a woman was raped, she was asking for it. (PR)	.04	<b>.82</b>	-.07
26. The reason most rapists commit rape is for sex.	-.04	<b>.54</b>	<b>.42</b>
27. Rape of a woman by a man she knows can be defined as a "woman who changed her mind afterward". (PR)	.02	<b>.75</b>	-.04
28. A convicted rapist should be castrated. (AR)	.28	-.01	<b>.67</b>
29. A woman should feel guilty following a rape. (PR)	.05	<b>.74</b>	.001
30. The degree of a woman's resistance should be the major factor in determining if a rape has occurred. (PR)	.10	<b>.69</b>	.23
31. A raped woman is a responsible victim, not an innocent one. (PR)	.03	<b>.73</b>	.01
32. Rape serves as a way to put or keep women in their "place". (PR)	.10	<b>.61</b>	-.10

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*Notes.* ASAW = Attitude toward Sexual Aggression against Women. ATR = Attitudes toward Rape. PR = Included in ATR Pro-Rape total score. AR = Included in ATR Anti-Rape total score. Bolded values indicate rotated factor loadings  $\geq .40$ .

### 3.3.2 Are Scores on the ASAW Independently Associated with Sexually Aggressive Behaviour?

For the following analyses, listwise deletion was used for participants with any missing data on the following measures: ASAW (1.1%,  $n = 7$ ), IRMAS-SF (0.9%,  $n = 6$ ), RAPE Scale (1.2%,  $n = 8$ ), ATR Pro-Rape (1.4%,  $n = 9$ ), ATR Anti-Rape (0.2%,  $n = 1$ ), and Proclivity SES-TFR (7.6%,  $n = 49$ ). Listwise deletion was used because total scores could not be computed with missing data. None of the participants had missing data on the LR question. For the SES-TFR, which is a count variable of past sexually aggressive behaviour, participants with more than 15% missing data (i.e., missing data on six or more items) were excluded listwise (1.9%,  $n = 12$ ). For participants with less than 15% missing data on the SES-TFR, missing data were treated as zeros (never engaged in the sexually aggressive behaviour). In total, 77 (11.9%) participants were excluded from the full sample of 647 due to missing data, resulting in a subsample of 570 participants. Participants who were excluded from the subsample did not significantly differ from the rest of the sample in terms of age,  $d = .04$ , 95% CI [-.20, .27], race  $\phi = .07$ ,  $p = .847$ , or education,  $\phi = .06$ ,  $p = .364$ . However, there was a significant difference in terms of relationship status,  $\phi = .15$ ,  $p = .007$ . Specifically, fewer participants who were excluded from the subsample were single (25.0% vs. 39.0%, OR = 0.52, 95% CI [0.30, 0.90]) and more were married (61.8% vs. 40.4%, OR = 2.39, 95% CI [1.46, 3.91]).

In terms of self-reported past sexual aggression, 40.4% ( $n = 230$ ) reported engaging in any sexually aggressive behaviour with a woman since the age of 16. Specifically, 20.4% ( $n = 116$ ) reported using verbal coercion (but not physical force or incapacitation) to engage in some form of sexual act with a woman. Additionally, 20.0%

( $n = 114$ ) reported using physical force or incapacitation, 88.6% ( $n = 101$ ) of whom also reported using verbal coercion. Additionally, 33.2% ( $n = 189$ ) of participants endorsed at least some likelihood (i.e., anything other than *not at all likely*) of engaging in sexually aggressive behaviour in the future; 16.3% ( $n = 93$ ) endorsed some likelihood of future verbal coercion and 16.8% ( $n = 96$ ) endorsed some likelihood of physical force or incapacitation (95.8% [ $n = 92$ ] of whom also reported some likelihood of verbal coercion). Last, 7.5% ( $n = 43$ ) of participants endorsed at least some likelihood to rape if they could be assured of not being caught or punished.

Descriptive information for each measure and their bivariate correlations are presented in Table 3.5 (see Appendix R for descriptive information by self-reported sexual aggression). As a heuristic, Pearson's  $r$  values of .10 are considered small, .30 moderate, and .50 large (Cohen, 1992). Large bivariate correlations were observed between the ASAW, IRMAS-SF, RAPE Scale, and ATR Pro-Rape. In contrast, none of the cognition measures were associated with the ATR Anti-Rape total score. Consistent with the EFA results, the IRMAS-SF, RAPE Scale, and ATR Pro-Rape were more strongly associated with each other ( $r$  values ranging from .79 - .88) than with the ASAW (.54 - .60); non-overlapping 95% BCa bootstrapped confidence intervals indicate that the differences between these sets of correlations were statistically significant. Except for the ATR Anti-Rape subscale, all cognition measures showed significant moderate to large correlations with past sexual aggression (SES-TFR), likelihood of engaging in sexually aggressive behaviour (Proclivity SES-TFR), and likelihood to rape (LR). In contrast, the ATR Anti-Rape subscale was almost completely unrelated to any of the sexual aggression measures. A similar pattern of results was obtained when non-parametric

**Table 3.5***Descriptive Statistics and Pearson Correlations with Bias Corrected and Accelerated 95% Confidence Intervals (N = 570)*

<b>Measure</b>	1	2	3	4	5	6	7	8
1. ASAW								
2. IRMAS-SF	<b>.54 [.46, .61]</b>							
3. ATR Pro-Rape	<b>.58 [.50, .65]</b>	<b>.79 [.76, .82]</b>						
4. ATR Anti-Rape	-.05 [-.15, .05]	-.004 [-.09, .09]	-.03 [-.12, .06]					
5. RAPE	<b>.60 [.52, .67]</b>	<b>.82 [.80, .85]</b>	<b>.88 [.85, .90]</b>	-.02 [-.11, .08]				
6. SES-TFR	<b>.47 [.36, .57]</b>	<b>.48 [.39, .55]</b>	<b>.49 [.40, .55]</b>	-.02 [-.10, .06]	<b>.49 [.41, .57]</b>			
7. Proclivity SES-TFR	<b>.50 [.39, .61]</b>	<b>.48 [.40, .57]</b>	<b>.53 [.44, .61]</b>	.02 [-.07, .11]	<b>.54 [.45, .61]</b>	<b>.90 [.83, .95]</b>		
8. LR	<b>.31 [.19, .43]</b>	<b>.30 [.19, .41]</b>	<b>.33 [.19, .46]</b>	-.02 [-.11, .06]	<b>.31 [.19, .44]</b>	<b>.30 [.17, .43]</b>	<b>.40 [.23, .56]</b>	
Min	1	17	19	6	36	0	1.00	1
Max	4	45	76	24	144	666	4.72	5
<i>M(SD)</i>	1.35(0.47)	23.39(6.40)	30.35(9.21)	17.83(3.29)	61.45(18.97)	39.84(108.28)	1.16(0.46)	1.13(0.55)

*Notes.* ASAW = Attitude toward Sexual Aggression against Women. IRMAS = Illinois Rape Myth Acceptance Scale. ATR = Attitude toward Rape. SES-TFR = Sexual Experience Survey-Tactics First: Revised. LR = Likelihood to Rape. Bias corrected and accelerated 95% confidence intervals are in brackets. Bolded values indicate confidence intervals that do not include zero.

correlations were computed, although these correlations were generally slightly smaller (see Appendix S for the Spearman rank-order correlations).

Next, to examine the extent to which the ASAW explains unique variance in sexually aggressive behaviour, I tested a series of multiple regression models predicting past sexual aggression (SES-TFR), likelihood of engaging in sexually aggressive behaviour (Proclivity SES-TFR), and likelihood to rape (LR). Each model includes the ASAW and one other measure of offense-supportive cognition. As the bivariate correlations indicated that the ATR Anti-Rape subscale was not associated with any of the measures of sexually aggressive behaviour, this scale was not included in the regression models. I also created a composite score with the IRMAS-SF, RAPE Scale, and ATR Pro-Rape by first averaging the items within each scale, and then averaging these scores across the three measures (standardization was not required as all items were rated on a 4-point scale). Composite scores could range from 1-4, with higher scores indicating greater endorsement of offence-supportive cognitions. Internal consistency across the average scores for the three scales was high ( $\alpha = .93$ ). Each model's tolerance and VIF values were above .20 and below 10, respectively, indicating that multicollinearity was not a concern.

Influential residual outliers were identified for the models predicting past sexually aggressive behaviour ( $n = 26$ ) and likelihood to rape ( $n = 1$ ); there were no influential residual outliers for models predicting likelihood of engaging in sexually aggressive behaviour. The pattern of results did not differ with and without influential residual outliers; therefore, only the results including outliers are presented (see Appendix T for model results after excluding influential residual outliers). Models predicting past sexual

aggression, likelihood of engaging in sexually aggressive behaviour, and likelihood to rape are presented in Tables 3.6 to 3.8.

**Table 3.6**

*Regression Models Predicting Past Sexually Aggressive Behaviour (N = 570)*

Model	$R^2$	$B$	$B SE$	95% Bootstrap CI <sub>BCa</sub>	$\beta$
Model 1: Rape Myth Acceptance	.29				
IRMAS-SF		<b>5.34</b>	<b>1.13</b>	<b>[3.26, 7.45]</b>	.32
ASAW		<b>68.82</b>	<b>15.95</b>	<b>[40.26, 103.93]</b>	.30
Model 2: Cognitive Distortions	.29				
RAPE Scale		<b>1.88</b>	<b>0.38</b>	<b>[1.14, 2.61]</b>	.33
ASAW		<b>62.41</b>	<b>16.56</b>	<b>[31.73, 98.65]</b>	.27
Model 3: Beliefs about Rape	.29				
ATR Pro-Rape		<b>3.78</b>	<b>0.83</b>	<b>[2.35, 5.24]</b>	.32
ASAW		<b>65.26</b>	<b>18.71</b>	<b>[33.02, 112.15]</b>	.28
Model 4: All Measures	.30				
Composite		<b>89.98</b>	<b>17.19</b>	<b>[58.46, 121.59]</b>	.36
ASAW		<b>57.06</b>	<b>16.91</b>	<b>[28.89, 93.26]</b>	.25

*Notes:* IRMAS-SF = Illinois Rape Myth Acceptance Scale-Short Form. ATR = Attitudes toward Rape. ASAW = Attitude toward Sexual Aggression against Women. CI<sub>BCa</sub> = bias corrected and accelerated confidence interval. Bolded values indicate 95% confidence intervals that do not include zero.

Across all models, the measure of offence-supportive cognition and the ASAW scale were both independently associated with past sexual aggression, likelihood of engaging in sexually aggressive behaviour, and likelihood to rape. This indicates that the ASAW explained unique variance relevant to sexual aggression after accounting for the IRMAS-SF, RAPE Scale, and ATR Pro-Rape.

**Table 3.7***Regression Models Predicting Likelihood of Sexually Aggressive Behaviour (N = 570)*

Model	$R^2$	$B$	$B SE$	95% Bootstrap $CI_{BCa}$	$\beta$
Model 1: Rape Myth Acceptance	.31				
IRMAS-SF		<b>0.02</b>	<b>0.01</b>	<b>[0.01, 0.03]</b>	.30
ASAW		<b>0.32</b>	<b>0.09</b>	<b>[0.17, 0.51]</b>	.34
Model 2: Cognitive Distortions	.34				
RAPE Scale		<b>0.01</b>	<b>0.002</b>	<b>[0.006, 0.01]</b>	.37
ASAW		<b>0.27</b>	<b>0.08</b>	<b>[0.14, 0.45]</b>	.28
Model 3: Beliefs about Rape	.33				
ATR Pro-Rape		<b>0.02</b>	<b>0.003</b>	<b>[0.01, 0.02]</b>	.36
ASAW		<b>0.28</b>	<b>0.08</b>	<b>[0.15, 0.46]</b>	.29
Model 4: All Measures	.34				
Composite		<b>0.41</b>	<b>0.07</b>	<b>[0.28, 0.52]</b>	.39
ASAW		<b>0.25</b>	<b>0.08</b>	<b>[0.12, 0.43]</b>	.26

*Notes:* IRMAS-SF = Illinois Rape Myth Acceptance Scale-Short Form. ATR = Attitudes toward Rape. ASAW = Attitude toward Sexual Aggression against Women.  $CI_{BCa}$  = bias corrected and accelerated confidence interval. Bolded values indicate 95% confidence intervals that do not include zero.

### 3.4 Discussion

This is the first study to explore the relationships between the ASAW and other measures of offence-supportive cognitions, as well as indicators of sexually aggressive behaviour. Consistent with discriminant validity, items from the ASAW clustered together to form a distinct factor from those of widely used measures of rape myth acceptance, cognitive distortions, and beliefs regarding rape. That is, regardless of the measure of offence-supportive cognition, ASAW items loaded highly onto a separate factor, suggesting that scores on the ASAW are driven by a different latent construct. This is consistent with previous factor analyses that examined the distinctiveness and

overlap between measures designed to assess attitudes toward sexual aggression and cognitive distortions regarding rape (Nunes et al., 2018; Pedneault, Hermann, & Nunes, 2020).

**Table 3.8**

*Regression Models Predicting Likelihood to Rape (N = 570)*

Model	$R^2$	$B$	$B SE$	95% Bootstrap CI <sub>BCa</sub>	$\beta$
Model 1: Rape Myth Acceptance	.12				
IRMAS-SF		<b>0.02</b>	<b>0.01</b>	<b>[0.01, 0.03]</b>	.19
ASAW		<b>0.24</b>	<b>0.09</b>	<b>[0.11, 0.43]</b>	.21
Model 2: Cognitive Distortions	.12				
RAPE Scale		<b>0.01</b>	<b>0.002</b>	<b>[0.003, 0.01]</b>	.20
ASAW		<b>0.22</b>	<b>0.08</b>	<b>[0.09, 0.39]</b>	.19
Model 3: Beliefs about Rape	.13				
ATR Pro-Rape		<b>0.01</b>	<b>0.004</b>	<b>[0.006, 0.02]</b>	.22
ASAW		<b>0.21</b>	<b>0.07</b>	<b>[0.09, 0.35]</b>	.18
Model 4: All Measures	.13				
Composite		<b>0.29</b>	<b>0.08</b>	<b>[0.14, 0.44]</b>	.23
ASAW		<b>0.20</b>	<b>0.08</b>	<b>[0.08, 0.35]</b>	.17

*Notes:* IRMAS-SF = Illinois Rape Myth Acceptance Scale-Short Form. ATR = Attitudes toward Rape. ASAW = Attitude toward Sexual Aggression against Women. CI<sub>BCa</sub> = bias corrected and accelerated confidence interval. Bolded values indicate 95% confidence intervals that do not include zero.

The current study extends previous findings as it is the first to examine the distinctiveness/overlap between items intended to assess attitudes toward sexual aggression and measures of rape myth acceptance (i.e., IRMAS-SF) and beliefs regarding rape (ATR). As with the cognitive distortion scale, ASAW items formed a distinct factor from those designed to measure rape myth acceptance and beliefs about rape. This

suggests that the ASAW is measuring a different latent construct that is not currently captured by widely used measures of offence-supportive cognition. This conclusion is further supported by the results of the sensitivity analyses using the heterotrait-monotrait method (Henseler et al., 2015), which also indicated that the ASAW items had discriminant validity relative to measures of rape myth acceptance, cognitive distortions, and beliefs regarding rape.

Interestingly, whereas the measures of rape myth acceptance and cognitive distortions formed unidimensional factors, items from the measure of beliefs regarding rape separated into two distinct factors. These two factors appear to reflect (a) cognitions that are pro-rape or otherwise supportive of rape myths and (b) cognitions that are anti-rape or otherwise supportive of consequences for rapist, respectively. For example, items that loaded highly on the pro-rape factor include: “In most cases when a woman was raped, she was asking for it”, “If a woman is going to be raped, she might as well relax and enjoy it” and “A woman should feel guilty following a rape”. In contrast, items that loaded highly onto the anti-rape factor include: “All rapists are mentally sick”, “Rape is the worst crime that can be committed”, and “A convicted rapist should be castrated”. In fact, some of the “anti-rape” items appear to reflect unfavourable attitudes toward rape (i.e., unfavourable evaluations of rape). However, bivariate correlations indicated that more favourable attitudes toward sexual aggression as measured by the ASAW were uncorrelated with higher endorsement of anti-rape beliefs/unfavourable attitudes toward rape as measures by the ATR. One plausible interpretation for these findings is that holding unfavourable attitudes toward rape and rapists is not simply the inverse of holding relatively more favourable attitudes toward sexual aggression against women.

Nevertheless, internal consistency across the items reflecting anti-rape beliefs/unfavourable attitudes toward rape was low, suggesting that the total score for these items may not be reliable. In sum, future research should continue to explore the overlap and distinctiveness between the ASAW and other measures of offence-supportive cognitions.

In line with incremental validity, results also showed that the ASAW was independently associated with self-reported past sexual aggression, likelihood of engaging in sexually aggressive behaviour, and likelihood to rape after accounting for other offence-supportive cognitions. Results were consistent regardless of which measure of offence-supportive cognition was included in the model, such that the ASAW explained unique variance after accounting for measures of rape myth acceptance, cognitive distortions, and pro-rape beliefs, respectively. Furthermore, when all measures of offence-supportive cognitions were combined, the ASAW continued to explain unique variance in each indicator of sexually aggressive behaviour. These findings are consistent with previous research showing that measures designed to assess attitudes toward sexual aggression and cognitive distortions regarding rape are both independently associated with self-report indicators of sexually aggressive behaviour (Nunes et al., 2018; Pedneault, Hermann, & Nunes, 2020). Importantly, the current study extends these findings by showing that they also generalize to widely used measures of rape myth acceptance and pro-rape beliefs. Together, these findings provide preliminary evidence for the incremental validity of the ASAW in relation to commonly used measures of offence-supportive cognition.

Notably, the results do not challenge the importance of other offence-supportive cognitions. On the contrary, the results of the current study lend further support to the notion that offence-supportive cognitions are important correlates of sexually aggressive behaviour. Indeed, the ASAW and the other measures of offence-supportive cognitions were independently associated with self-reported indicators of sexual aggression, and together these measures explained more variance in sexually aggressive behaviour than either measure alone. This is consistent with the notion that a multi-method approach to measurement strengthens prediction of sexually aggressive behaviour (Malamuth, 2003; Murnen et al., 2002).

### **3.4.1 Limitations and Future Directions**

First, as the ASAW is a new measure, the extent to which its scores truly reflect attitudes toward sexual aggression against women has not been empirically tested. This limits the conclusions that can be drawn from this study. For instance, the EFA suggests that scores on the ASAW are driven by a distinct cognitive construct relative to other measures of offence-supportive cognition; however, without evidence of construct validity, it cannot be known whether this construct represents attitudes or something else.

Second, as previously mentioned, the use of EFA to assess discriminant validity has been criticized for having low sensitivity for detecting lack of discriminant validity in simulation studies (e.g., Henseler et al., 2015). That is, EFA is known to suggest strong discriminant validity when in fact it is lacking. Despite its limitations, EFA was selected for this study because it allows for item-level analysis. This was important for detecting any cross-loadings between items from the ASAW and the other measures of offence-supportive cognition. To address concerns regarding the use of EFA as a test of

discriminant validity, the HTMT ratio of correlations approach was used as a sensitivity analysis (Henseler et al., 2015). Consistent with the EFA results, HTMT statistics indicated that the ASAW was empirically distinct from each of the measures of offence-supportive cognitions.

Third, it is possible that the results of the EFA could be explained by a method factor. That is, variance accounted for by the features of the measure rather than the underlying construct being assessed (Kline, 2016). For instance, the ASAW asks respondent to evaluate sexually aggressive behaviours on a response scale from *very bad* to *not at all bad*; whereas, the remaining measures all ask respondents to rate their agreement with various statements on response scales ranging from *not at all agree/strongly disagree* to *very much agree/strongly agree*. It is possible that the differences in response scales or the rating task itself (e.g., rating a scenario rather than a statement) could explain the separation of ASAW items from the other measures. To rule out the possibility that the findings are due to method variance, future research could explore the validity of the ASAW using the multitrait-multimethod approach developed by Campbell and Fiske (1957).

Fourth, the cross-sectional design limits the conclusions that can be drawn regarding the relationship between the cognitive constructs examined and sexually aggressive behaviour. That is, as all measures were completed at the same time, the temporal order of the variables cannot be established. Furthermore, as none of the cognitions were experimentally manipulated, no conclusions can be drawn about their influence (or lack thereof) on sexually aggressive behaviour. However, the likelihood of sexual aggression and likelihood to rape scales can be considered measures of

behavioural intention. According to the theory of planned behaviour, behaviour is determined by intentions to engage in that behaviour (Ajzen, 1991). Thus, these measures represent a reasonable proxy for future sexual aggression. Regardless, the goal of these analyses was to explore the extent to which the ASAW explained unique variance in sexually aggressive behaviour; thus, a cross-sectional design was suitable for this purpose.

### **3.4.2 Conclusion**

The current study provides preliminary evidence for the discriminant and incremental validity of the ASAW. Relative to other measures of offence-supportive cognitions, the ASAW was distinct and explained incremental variance in indicators of sexual aggression, suggesting that it may make a useful contribution to the field of sexual aggression. However, as previously mentioned, the current findings do not directly test the extent to which scores on the ASAW truly reflect attitudes toward sexual aggression against women (i.e., construct validity). This is the topic of the next chapter (Chapter 4).

## **Chapter 4: Attitude toward Sexual Aggression against Women (ASAW)**

### **Scale: Initial Test of Construct Validity**

The purpose of this paper was to examine the extent to which scores on the ASAW truly reflect attitudes toward sexual aggression against women (i.e., construct validity). As there are currently no independent, validated indicators of attitudes toward sexual aggression against which to compare ASAW scores, a simple test of convergent validity could not be conducted. As an alternative, the following reasoning was adopted to test construct validity: if ASAW scores have construct validity, then they should be sensitive to actual changes in attitudes toward sexual aggression against women. Specifically, this paper presents the results of a randomized experiment in which attitudes toward sexual aggression against women were manipulated to be more negative using persuasive communication. Given that persuasive communication is known to be an effective method of attitude change, ASAW scores should decrease in response to the persuasive message if they truly reflect what they are intended to measure.

## 4.1 Introduction

The extent to which a measure is valid depends on a combination of evidence that shows the measure is consistent with the construct it intends to assess (Strauss & Smith, 2009). A direct test of construct validity would involve comparing the ASAW against an independent, validated indicator of attitudes toward sexual aggression against women. However, in this case, there are currently no validated indicators of attitudes toward sexual aggression against which to compare the ASAW. Thus, convergent validity could not be examined in this case. A promising alternative for examining construct validity was suggested by Cronbach and Meehl (1955) in their foundational paper on the topic. They proposed that evidence of construct validity could be gathered by examining the extent to which scores on a measure are sensitive to experimental intervention. In other words, if scores on the ASAW are sensitive to a (valid) intervention targeting attitudes toward sexual aggression against women, this would suggest that scores on the ASAW truly reflect the construct they intend to measure. Importantly, the experimental intervention itself must be valid to draw strong conclusions from such an approach. Fortunately, well-established attitude-change procedures have been developed within social psychology (e.g., Albarracín & Shavitt, 2018; Gawronski & Bodenhausen, 2006; Hofmann et al., 2010; Petty & Brinol, 2012; Rydell, & McConnell, 2006; Sritharan & Gawronski, 2010; Stiff & Mongeau, 2016).

To illustrate, Nunes and colleagues (2021) previously adapted well-established attitude-change procedures to examine the construct validity of the Evaluation of Violence Questionnaire (EVQ), a new measure of attitudes toward male-on-male violence. Specifically, they experimentally manipulated attitudes toward violence to be

more negative and examined the extent to which scores on the EVQ decreased (indicating more negative evaluations) following the attitude-change manipulation. The attitude-change manipulation involved two of the most well-established attitude-change procedures, namely, persuasive communication and evaluative conditioning (e.g., Hofmann et al., 2010; Stiff & Mongeau, 2016). Briefly, the persuasive message presented logical arguments about the consequences of violence and the evaluative conditioning procedure repeatedly paired violent behaviours with negative stimuli. Consistent with evidence of construct validity, results showed that EVQ scores became significantly more negative from pre- to post-manipulation in the attitude-change compared to the control condition ( $d = -0.52$ , 95% CI [-0.79, -0.25]). Additionally, average post-test EVQ scores were significantly lower in the attitude-change than in the control condition ( $d = -0.36$ , 95% CI [-0.54, -0.17]). Furthermore, Nunes and colleagues successfully used the same persuasive communication procedure to manipulate attitudes toward violence in two subsequent studies (Nunes, Pedneault, & Hermann, 2021; Perrault et al., 2021). Together, these findings show that it is possible to experimentally manipulate attitudes toward violent behaviour using evaluative conditioning and/or persuasive communication.

#### **4.1.1 Current Study**

The current study provides an initial test of the ASAW's construct validity by examining the extent to which its scores are sensitive to a well-established attitude-change procedure (i.e., persuasive communication). Using a Solomon four-group design, participants were randomly assigned to receive a message about the consequences of sexual assault against women or a control message. Extensive research has shown that persuasive communication is an effective attitude-change method (Petty & Brinol, 2012;

Stiff & Mongeau, 2016); thus, if scores on the ASAW become more negative following the attitude-change manipulation, it would suggest that scores on the ASAW reflect attitudes toward sexual aggression against women. Additionally, as a sensitivity analysis, the relative impact of the attitude-change manipulation on a related but distinct construct was examined. Specifically, if scores on the ASAW truly reflect attitudes toward sexual aggression, its scores should be more sensitive to an attitude-change manipulation than scores on a measure of rape myth acceptance (a related but distinct construct).

## 4.2 Method

### 4.2.1 Participants

This study was pre-registered with a target sample size of 648 (<https://osf.io/vgzfu>). A total of 1,352 men (18+) living in Canada or the United States who are sexually attracted to women consented to participate. Of these men, 635 (47.0%) did not complete ( $n = 352$ ) or withdrew ( $n = 283$ ) from the study. Additionally, 34 (2.5%) participants were excluded because they failed the manipulation-check (described later) and 35 (2.6%) were excluded for speeding (i.e., completing the survey in less than half the median completion time recorded for the survey). This resulted in the target sample of 648 participants. An age quota had been set to collect data from predominantly younger men (i.e., no maximum on participants aged 18-30, a maximum of 25% of participants aged 31-40, a maximum of 15% of participants aged 41-50, and a maximum of 10% of participants aged 51 or older), and this age quota was met<sup>11</sup>. A country quota was also set

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<sup>11</sup> The third party responsible for recruiting participants (Qualtrics) incorrectly set up the age and country quotas at the beginning of the study, resulting in the oversampling of participants from Canada and older age categories (31-40, 41-50, and 51+). To remedy this issue, additional participants were sampled to meet the minimum number of participants in the 18-30 age category. The country quota was discarded because

to collect data equally from Canada and the United States, but this quota was discarded after an error in the quota set up resulted in the oversampling of participants living in Canada. The country quota was deemed unnecessary as no country-based analyses were planned. Of the 648 participants who met the screening criteria, an additional 30 (4.6%) were excluded from the analyses because they were missing data on one or more of the study measures, and one participant (0.2%) was excluded because they demonstrated a clear response set (see Results section for more details). This resulted in a final sample of 617 participants.

The average age was 34.5 ( $SD = 13.4$ ), ranging from 18 to 79. Sixty-eight percent ( $n = 419$ ) of participants were from Canada and 32.1% were from the United States ( $n = 198$ ). Most participants identified as White (63.7%,  $n = 393$ ), followed by East/Southeast Asian (10.2%,  $n = 63$ ), Black (8.9%,  $n = 55$ ), Latino (3.7%,  $n = 23$ ), South Asian (3.4%,  $n = 21$ ), Indigenous (2.8%,  $n = 17$ ), Middle Eastern (2.6%,  $n = 16$ ), and another group (1.1%,  $n = 7$ ). Additionally, 3.6% ( $n = 22$ ) of participants identified with more than one group. More than half had completed college or university (58.5%,  $n = 361$ ), 33.4% ( $n = 206$ ) completed high school, 5.0% ( $n = 31$ ) did not complete high school, and 3.1% ( $n = 19$ ) did not indicate their highest level of education. More than a third of participants were single (38.6%,  $n = 238$ ), 33.2% ( $n = 205$ ) were married, 19.6% ( $n = 121$ ) were in a romantic relationship or living with a romantic partner, and 7.8% were separated, divorced, or widowed ( $n = 48$ ); 0.8% ( $n = 5$ ) did not report their relationship status. To

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no country-based analyses were planned and the uptake from respondents living in the United States was much slower. The final sample of 648 participants consists of the first participants to fulfill the age quota; whereas any complete and partial data collected after the final participant within each age group was excluded from the current dataset. In sum, the final sample corresponds to the sampling procedure outlined in the pre-registration, with the exception of not meeting the original country quota.

the question “Who are you most sexually attracted to?”, most men reported that they were mostly sexually attracted to women (96.1%,  $n = 593$ ), whereas the remaining men reported being sexually attracted to both women and men equally.

Compared to the final study sample ( $n = 617$ ), participants excluded from the main analyses ( $n = 735$ ) were significantly younger ( $M = 30.2$ ,  $SD = 11.8$  vs.  $M = 34.5$ ,  $SD = 13.4$ ,  $d = 0.35$ , 95% CI [0.24, 0.46]). They were also significantly less likely to be married (25.2% vs. 33.5%, OR = 0.67, 95% CI = [0.52, 0.87]) and more likely to be single (47.3% vs. 38.9%, OR = 1.41, 95% CI = [1.11, 1.79]). Additionally, these participants were significantly more likely to identify as Black (15.2% vs. 8.9%, OR = 1.83, 95% CI [1.26, 2.64]) and less likely to identify as White (56.5% vs. 63.7%, OR = 0.74, 95% CI = [0.58, 0.94]). The two groups did not significantly differ in terms of highest level of education completed ( $\phi = .05$ ,  $p = .336$ ).

## **4.2.2 Measures**

### **4.2.2.1 Demographic Questionnaire**

Participants were asked questions about their age, gender, ethnocultural background, education, relationship status, and sexual orientation (see Appendix U).

### **4.2.2.2 Sexual Experience Survey – Tactics First Revised**

Past sexually coercive and aggressive behaviour was assessed using the Sexual Experience Survey – Tactics First Revised (SES-TFR, Hermann et al., 2018; Appendix O.1). The SES-TFR is a modified version of the ‘Tactics First’ Sexual Experience Survey (SES-TF) developed by Abbey and colleagues (2005). See Pedneault and Nunes (2021a) for a summary of the modifications. The SES-TFR asks respondents to indicate the

frequency with which they have engaged in sexual acts (i.e., sexual touching, oral sex, anal sex, inserting an object, and actual or attempted sexual intercourse) using the following sexually aggressive tactics since the age of 16: (a) arguments and pressure, (b) lies or false promises, (c) guilt or displeasure, (d) giving a woman drugs or alcohol, (e) taking advantage of a woman when she is incapacitated due to drugs or alcohol, and (f) physical force. Each item is assessed on a 10-point scale from (0) *never* to (9) *nine times or more*. This wide response scale was used to encourage honest responding by making some higher frequency responses options appear less extreme. However, to compute a total score, responses were re-scaled to the original 4-point scale used by Abbey et al. (2005), such that 0 = *never*, 1 = *once*, 2 = *twice*, and 3 = *three time or more*. Responses were then multiplied by the corresponding outcome and severity weights developed by Davis, Gilmore et al. (2014) and summed to compute a total score. Higher scores indicate more past sexual aggression, with possible scores ranging from 0 to 1,998. Research suggests that self-report measures can be reasonably accurate measures of sexually aggressive behaviour (e.g., Pham et al., 2021; Weinrott & Saylor, 1991).

#### **4.2.2.3 ASAW Scale**

The ASAW (Pedneault et al., 2021; see Appendix I) was developed to assess attitudes toward sexual aggression against women. This 13-item scale asks respondents to evaluate a range of sexually aggressive behaviours on the following 4-point scale: (1) *very bad*, (2) *pretty bad*, (3) *not that bad*, (4) *not at all bad*. A total score is computed by averaging responses, with total scores ranging from 1-4. Higher scores are interpreted as indicating more favourable attitudes toward sexual aggression. The ASAW has shown excellent internal consistency in the current sample (Cronbach's  $\alpha = .94$ ) and previous

research with men from the community ( $\alpha = .92-.93$ ; Pedneault et al., 2021; Pedneault & Nunes, 2021a). Previous studies have provided initial evidence for the structural (i.e., underlying factor structure), discriminant (distinct from measures of different constructs), and incremental (explains unique variance) validity of the ASAW. Specifically, Pedneault et al. (2021) examined the underlying factor structure of the ASAW using exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). EFA and CFA both suggested that the ASAW is unidimensional. Additionally, Pedneault and Nunes (2021a) found that ASAW items loaded onto a distinct latent factor from those of three commonly used measures of offence-supportive cognitions, namely, the RAPE Scale (Bumby, 1996), the Attitudes toward Rape Scale (ATR; Feild, 1978), and the Illinois Rape Myth Acceptance-Short Form (Payne et al., 1999). This suggests that the ASAW is assessing something different than these other measures of offence-supportive cognition, providing preliminary evidence of discriminant validity.

#### **4.2.2.4 Illinois Rape Myth Acceptance Scale – Short Form**

The Illinois Rape Myth Acceptance Scale-Short Form (IRMAS-SF, Payne et al., 1999; Appendix L) is a measure of rape myth acceptance (i.e., generally false beliefs about women and rape). Pedneault and Nunes (2021a) showed that the IRMAS-SF is associated with, but empirically distinct from, the ASAW; therefore, it was included in this study as a sensitivity check against which the impact of the attitude-change manipulation on ASAW scores could be compared. As previously mentioned, scores on the ASAW should be more sensitive to the attitude-change manipulation than scores on a measure of a different construct. The IRMAS-SF asks respondents to rate their agreement with 20 statements, such as “If a woman is raped while she is drunk, she is at least

somewhat responsible for letting things get out of control” and “Men don’t usually intend to force sex on a woman, but sometimes they get too sexually carried away”. Each statement is rated on a scale from (1) *not at all agree* and (4) *very much agree*. A total score is computed by summing responses to 17 of the 20 items; three items are filler items that do not contribute to the total score. Total scores can range from 17 to 68, with higher scores indicating greater rape myth acceptance. The IRMAS-SF demonstrated excellent internal consistency in the current study ( $\alpha = .92$ ).

### **4.2.3 Experimental Manipulation**

Participants were randomly assigned to an attitude-change or control condition. In the attitude-change condition, participants were asked to read a persuasive message designed to make attitudes toward sexual aggression against women more negative (see Appendix V). Meta-analyses have consistently shown that persuasive communication is an effective method for changing attitudes toward a range of topics (Kumkale et al., 2010; Tannenbaum et al., 2015; Witte & Allen, 2000), including attitudes toward sexual health behaviours (Noar et al., 2010; Tyson et al., 2014). The persuasive message for the current study was developed based on well-established theory and best-practices from the literature on persuasive communication (e.g., Fishbein & Ajzen, 1975; Petty & Brinol, 2012; Petty & Wegener, 1998; Stiff & Mongeau, 2016; Johnson et al., 2018). Specifically, consistent with expectancy-value theories (Fishbein & Ajzen, 1975), the attitude-change message presented logical evidence about the consequences of sexual assault for the victim (e.g., injuries, mental health issues), the perpetrator (e.g., criminal record, social exclusion), and their loved ones (e.g., shame, retaliation). Additionally, in line with dual-processing models of persuasion (e.g., elaboration likelihood model [Petty

& Brinol, 2012]), several factors that increase the impact of persuasive communication on attitude change were integrated into the attitude-change message:

- Motivation to attend to the content of the message was enhanced by informing participants that they would be asked about the content of the message later on (see Manipulation Check below).
- The message was made more personally relevant to participants by using personal pronouns (e.g., You get arrested; People talk about you behind your back) and asking them to imagine hypothetical situations (e.g., Imagine if someone sexually assaulted a woman you care about, like your mother, sister, or good friend).
- Several logical arguments about the consequences of sexual aggression were presented, including some relatively novel arguments (e.g., The woman's family and friends could try to get revenge; If the woman gets pregnant, you may have to pay child support for the rest of your life)
- Both rational (e.g., logical arguments) and emotional (e.g., impactful images) appeals were integrated into the message.
- The position of the message was explicitly stated at the end.
- Simple wording was used throughout to ensure that all participants could understand the content of the message.

Participants in the control condition were asked to read a message about the Grand Canyon of approximately the same length and difficulty as the attitude-change message (see Appendix W). It also included the same number of pictures, in this case depicting different locations across the Grand Canyon. As with the attitude-change

condition, participants were asked to read the message carefully as they would be asked questions about it later. This message was designed so that it would not have any impact on attitudes toward sexual aggression against women.

#### **4.2.3.1 Manipulation-Check**

Participants were asked three questions about the content of the message they read as part of the experimental manipulation (see Appendix X). For example, participants were asked “Which of the following was in the message you read?” (a) Sexual assault includes sexually touching someone without their consent or (b) Different types of rocks are found in the Grand Canyon. The correct answer for participants in the attitude-change condition would be (a), whereas the correct answer for participants in the control condition would be (b). This questionnaire was designed to ensure that participants were paying attention to the experimental manipulation. Participants who failed more than one of the three manipulation-check questions were excluded from analyses.

#### **4.2.4 Procedure**

Participants were recruited through Qualtrics from an online panel of participants. Participants who met the inclusion criteria (male, 18 years or older, living in Canada or the United States, sexually attracted to women) were invited by Qualtrics to participate in the study. Those who clicked on the link to the survey were presented with a consent form (Appendix Y). Participants who consented to participate were presented the demographic questions, followed by the SES-TFR. Next, following a Solomon four-group experimental design, participants were randomly assigned to one of the following four conditions:

- Experimental pre-post: this condition was presented the pre-manipulation ASAW and IRMAS-SF in a counterbalanced order, followed by the attitude-change message, and then the post-manipulation ASAW and IRMAS-SF in a counterbalanced order.
- Experimental post-only: this condition was presented the attitude-change message, followed by the post-manipulation ASAW and IRMAS-SF in a counterbalanced order.
- Control pre-post: this condition was presented the pre-manipulation ASAW and IRMAS-SF in a counterbalanced order, followed by the control message, and then the post-manipulation ASAW and IRMAS-SF in a counterbalanced order.
- Control post-only: this condition was presented the control message, followed by the post-manipulation ASAW and IRMAS-SF in a counterbalanced order.

Next, all participants completed the manipulation-check questionnaire. Once participants complete the study, or withdrew at any point, they were shown a series of nature images intended to improve mood, followed by the debriefing form (Appendix Z). These procedures were approved by the Carleton University Ethics Board.

The Solomon four-group design addresses some of the disadvantages associated with simpler experimental designs (Solomon, 1949; Campbell & Stanley, 1963). For instance, asking participants to complete a pre- and post-test allows for within participant change to be examined; however, this method may sensitize participants to the measure or cause fatigue. In contrast, if participants are only asked to complete a post-test, within-person change cannot be examined but sensitization and fatigue are avoided. The Solomon four-group design combines the methodological strengths associated with pre-

post and post-only designs, which protects the study against threats to internal and external validity (Campbell & Stanley, 1963).

#### **4.2.5 Hypotheses**

My specific hypotheses were as follows:

- Hypothesis 1: Scores on the ASAW will show a greater reduction from pre- to post-test in the attitude-change condition than in the control condition.
- Hypothesis 2: Post-manipulation ASAW scores will be lower, on average, in the attitude-change condition than in the control condition.
- Hypothesis 3: The standardized mean difference in mean gain scores (post-manipulation – pre-manipulation scores) between the attitude-change and control condition will be larger (and negative) for scores on the ASAW than for scores on the IRMAS-SF.
- Hypothesis 4: The standardized mean difference between the attitude-change and control conditions on post-manipulation scores will be larger (and negative) for scores on the ASAW than for scores on the IRMAS-SF.

#### **4.2.6 Analytical Strategy**

Preliminary research with the ASAW has shown that men who do not report engaging in any past sexual aggression tend to only endorse the most negative attitudes toward sexual aggression against women (floor effects; Pedneault and Nunes, 2021a). Therefore, their scores on the ASAW cannot become more negative following the attitude-change manipulation. In contrast, men with a history of sexually aggressive behaviour tend to endorse more favourable attitudes toward sexually aggressive

behaviour on the ASAW, meaning that their scores have the ability to become more negative following the attitude-change manipulation. For this reason, all hypotheses were tested for (a) the full sample and (b) participants who reported a history of sexually aggressive behaviour against women.

Consequently, I began by examining the extent to which mean scores on the ASAW and the IRMAS-SF differed as a function of self-reported sexually aggressive behaviour. Specifically, I divided participants into three groups based on their self-reported past sexual aggression on the SES-TFR: no history of sexual aggression, verbal sexual coercion, and physical force/incapacitation. For these analyses, only pre-manipulation measures were examined given that post-manipulation scores would be confounded by the attitude-change manipulation. Additionally, I computed bivariate correlations between the ASAW, IRMAS-SF, and SES-TFR total score, as well as their bias corrected and accelerated 95% bootstrapped confidence intervals.

Next, I computed mean gain scores by subtracting participants' pre-manipulation scores from their post-manipulation scores. Additionally, to determine if I could combine post-manipulation scores across both attitude-change and control conditions (i.e., pre-post and post-only conditions), I tested whether having completed the pre-test had an impact on post-test scores across conditions (i.e., pretest sensitization). Specifically, I conducted a 2 (pre-test vs. no pretest) X 2 (attitude-change condition vs. control condition) between-subjects ANOVA on all post-test ASAW and IRMAS-SF scores. Because neither of the interaction terms between conditions were statistically significant ( $\alpha = .05$ ), the pre-post conditions and post-only conditions were collapsed when examining post-manipulation scores.

To test Hypotheses 1 and 2, I computed the standardized mean differences (Cohen's  $d$ ) between the attitude-change and control conditions for mean gain and post-manipulation scores. As a heuristic,  $d$  values of 0.20, 0.50, and 0.80 are considered small, medium, and large effect sizes, respectively (Cohen, 1992). The 95% confidence intervals around Cohen's  $d$  were also calculated; confidence intervals that do not include zero indicate a statistically significant difference. As previously mentioned, these analyses were conducted for the full sample and then restricted to those with a history of sexual aggression. Next, to test Hypotheses 3 and 4, I examined the relative impact of the attitude-change manipulation on ASAW and IRMAS-SF scores by computing the 84% CIs around each effect size (used for comparing non-independent effect sizes). Non-overlapping 84% confidence intervals indicate that non-independent effect sizes are significantly different at an alpha level of .05 (Tryon, 2001).

#### **4.2.7 Power Analyses**

Power calculations were conducted using G\*Power version 3 (Faul et al., 2007). An a priori power analysis for detecting the mean difference between two independent means indicated that a sample of 260 participants (130 participants per group) was required to detect a small to medium effect ( $d = 0.35$ ) with a power of .80. As previously mentioned, analyses were conducted for the full sample and then restricted to men with a history of sexual aggression. Previous research has found that approximately 40% of community men self-report engaging in any sexually aggressive behaviour (e.g., Abbey et al., 2007; Abbey & Jacques-Tiura, 2011; Hermann et al., 2018); therefore, given that 260 represents 40% of 650, approximately 650 participants would be required to find a Cohen's  $d$  of .35 with power of .80 within this subsample. A target sample of 648 was set

with the goal of collecting an equal number of participants across the four experimental conditions.

## **4.3 Results**

### **4.3.1 Data Management**

#### **4.3.1.1 Missing Data**

Participants who were missing any data on the ASAW (pre- or post-test) or IRMAS-SF (pre- or post-test) were excluded listwise as total scores could not be computed for these participants. Of the 648 men who completed the study, 1.9% ( $n = 12$ ) were missing data on the post-manipulation ASAW and 2.3% ( $n = 15$ ) were missing data on the post-manipulation IRMAS-SF. Additionally, among those who were assigned to one of the pre-post conditions, 1.2% ( $n = 4$ ) were missing data on the pre-manipulation ASAW and 0.6% ( $n = 2$ ) were missing data on the pre-manipulation IRMAS-SF. For the SES-TFR, which is a count variable of past sexually aggressive behaviour, participants with more than 15% missing data (i.e., missing data on more than five items) were excluded listwise. When participants had less than 15% missing data on the SES-TFR, missing data were treated as zeros (never engaged in the sexually aggressive behaviour). A total of 1.1% ( $n = 7$ ) of participants had more than 15% missing data on the SES-TFR. Together, 4.6% ( $n = 30$ ) of participants were excluded due to missing data.

#### **4.3.1.2 Outliers and Response Sets**

I identified univariate and multivariate outliers with the goal of detecting systematic response patterns (e.g., straightlining). Univariate outliers were identified using the median absolute deviation (MAD) method described in Leys et al. (2013), with

MAD values greater than 2.5 considered to be outliers. Additionally, multivariate outliers were identified across all pre-manipulation measures using the minimum covariance determinant (MCD) method with a breakpoint of 0.25 (i.e., MAD7; Leys et al., 2018). Together, 416 cases were identified as either a univariate or multivariate outliers. Next, I examined each outlying case individually to identify any systematic response patterns (Leys et al., 2018). Only one case clearly demonstrated a response set and was excluded from the analyses. Specifically, this case was an extreme multivariate outlier because the individual systematically endorsed either a high or low point on the response scales across multiple measures, but alternated the extremeness of their responses between measures. Otherwise, as specified in the pre-registration, I retained the remaining outliers in the analyses. The decision was made to retain these outliers because individuals who deviate from the norm in their offence-supportive cognitions and sexually aggressive behaviour were of interest in this study.

#### **4.3.1.3 Selective Attrition**

Online experiments are susceptible to selective dropout, which can confound the results of an experiment (Zhou & Fishbach, 2016). Selective dropout is when participants systematically drop out of one or more of the experimental conditions. To illustrate, if participants selectively drop out of the experimental condition because it is more taxing than the control condition, then participants in the experimental condition may represent a more motivated group compared to the control group. This type of confound can compromise the internal validity of an experiment. To test the extent to which selective dropout was an issue in the current study, I compared the proportion of participants retained in the main analyses across conditions. In total, 794 participants were randomly

assigned to one of the four conditions; 617 were retained and 177 were excluded for one of the following reasons: did not complete the study, withdrew, did not meet data quality criteria (i.e., manipulation-check, speeding, or response set), or had missing data. Results indicated that participants who were assigned to the control condition were significantly more likely to be excluded from the main analyses compared to participants assigned to the experimental condition (27.3% vs. 16.7%, OR = 1.87, 95% CI [1.32, 2.65]). To further investigate the exclusion criteria driving this difference, I compared the proportion of participants excluded for each of the possible reasons (i.e., did not complete study, withdrew, did not meet data quality criteria, and missing data). Results showed that significantly more participants assigned to the control condition did not meet the data quality criteria compared to participants assigned to the attitude-change condition (14.7% VS. 1.9%, OR = 8.98, 95% CI [4.06, 19.89]). There were no significant differences across conditions in terms of non-completes, withdrawals, and missing data.

#### **4.3.2 History of Sexual Aggression**

Of the 617 men retained for analysis, 38.6% ( $n = 238$ ) reported at least some past sexually aggressive behaviour on the SES-TFR. History of sexual aggression was further broken down by type of tactic: verbal coercion and physical force/incapacitation. Verbal coercion includes the following SES-TFR tactics: (a) making a woman believe (without actually saying it) that you would make something bad happen to her, (b) directly saying to a woman that you would make something bad happen to her, (c) making it so a woman can't get away (e.g., by blocking the doorway), and (d) scaring a woman by yelling, swearing, or showing you are angry. Physical force/incapacitation includes the following SES-TFR tactics: (a) taking advantage of a woman when she is passed out from drugs or

alcohol, (b) giving a woman drugs or pressuring her to drink alcohol, (c) threatening to physically harm a woman or someone she cares about, and (d) using physical force on a woman. In total, 37.3% ( $n = 230$ ) of participants reported engaging in verbal coercion and 15.6% ( $n = 96$ ) reported engaging in physical force/incapacitation; 14.3% ( $n = 88$ ) reported having engaged in both verbal coercion and physical force/incapacitation.

For the subsample of participants who were assigned to one of the pre-post conditions ( $n = 314$ ), Table 4.1 presents descriptive statistics for the pre-manipulation ASAW and IRMAS-SF as a function of sexual aggression history. Men who reported using physical force or incapacitation to obtain sexual activity with a woman endorsed significantly more positive attitudes toward sexually aggressive behaviour on the ASAW compared to men with no history of sexual aggression and those who reported using verbal sexual coercion only. The same pattern was found for endorsement of rape myth acceptance on the IRMAS-SF. Furthermore, higher scores on the SES-TFR (indicating more sexually aggressive behaviour) were moderately to strongly associated with more favourable attitudes toward sexual aggression on the ASAW ( $r = .42$ , BCa 95% bootstrapped CI [.28, .56]) and greater endorsement of rape myth acceptance on the IRMAS-SF ( $r = .52$ , BCa 95% bootstrapped CI [.39, .63]). Additionally, men who reported more favourable attitudes toward sexual aggression on the ASAW also showed more rape myth acceptance on the IRMAS-SF ( $r = .55$ , BCa 95% bootstrapped CI [.36, .71]).

**Table 4.1.***Descriptive Statistics by Type of Past Sexual Aggression (N = 314)*

<b>Measure</b>	None	Verbal Coercion	Physical Force/	None vs.	None vs.	Verbal vs.
	(n = 196)	Only (n = 76)	Incapacitation (n = 42)	Verbal	Physical	Physical
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	Cohen's <i>d</i> [95% CI]		
ASAW	1.18 (0.33)	1.33 (0.47)	1.82 (0.66)	0.38	1.56	0.90
(pre-test)				[0.12, 0.65]	[1.19, 1.92]	[0.51, 1.30]
IRMAS-SF	20.98 (4.54)	22.74 (6.51)	32.41 (12.98)	0.34	1.68	1.04
(pre-test)				[0.07, 0.61]	[1.31, 2.04]	[0.64, 1.44]

*Notes.* ASAW = Attitude toward Sexual Aggression against Women. IRMAS-SF = Illinois Rape Myth Acceptance Scale-Short Form. Sexual aggression groupings are based on responses to the SES-TFR.

### 4.3.3 Effects of Attitude-Change Manipulation

To examine the extent to which ASAW scores were sensitive to the attitude-change manipulation, I examined mean gain scores and post-test scores across the attitude-change and control conditions. Subsequent analyses were conducted for (a) the full sample ( $N = 617$ ) and (b) participants who reported any past sexually aggressive behaviour on the SES-TFR ( $n = 238$ ). Table 4.2 presents the results of the attitude-change manipulation for the full sample. These findings indicate that mean gain scores on the ASAW did not significantly differ between the attitude-change and control condition; whereas mean gain scores on the IRMAS-SF indicated that participants endorsed significantly fewer rape myths in the attitude-change condition than in the control condition. Next, to determine if I could combine both attitude-change and control conditions (i.e., pre-post and post-only conditions), I conducted a 2 (pre-test vs. no pretest) X 2 (attitude-change condition vs. control condition) between-subjects ANOVA on all post-test ASAW and IRMAS-SF scores. Results indicated that the interaction terms were not statistically significant for the ASAW,  $F = 0.54$ ,  $p = .462$ , or the IRMAS-SF,  $F = 0.62$ ,  $p = .432$ ; therefore, I combined post-manipulation ASAW and IRMAS-SF scores across conditions. Post-manipulation ASAW scores were significantly lower in the attitude-change compared to the control condition. In contrast, post-manipulation IRMAS-SF did not significantly differ between conditions. However, given that the 84% confidence intervals for the ASAW and IRMAS-SF almost completely overlap, results indicate that neither scale was more sensitive to the experimental manipulation than the other.

**Table 4.2***Effects of the Attitude-Change Manipulation for the Full Sample*

Scores	Attitude-Change Condition		Control Condition		Standardized Mean Difference		
	<i>n</i>	<i>M (SD)</i>	<i>n</i>	<i>M (SD)</i>	<i>d</i>	95% CI	84% CI
Mean-gain							
ASAW	150	-0.07 (0.34)	164	-0.03 (0.18)	-0.17	[-0.39, 0.06]	[-0.32, -0.01]
IRMAS-SF	150	-1.32 (3.74)	164	-0.52 (3.33)	<b>-0.23</b>	<b>[-0.45, -0.01]</b>	[-0.39, -0.07]
Post-test							
ASAW	310	1.25 (0.48)	307	1.33 (0.46)	<b>-0.16</b>	<b>[-0.32, -0.003]</b>	[-0.27, -0.05]
IRMAS-SF	310	22.28 (7.58)	307	22.75 (7.37)	-0.06	[-0.22, 0.10]	[-0.17, 0.05]

*Notes.* Mean gain scores were computed by subtracting post-manipulation scores from pre-manipulation scores.

Table 4.3 presents the results of the attitude-change manipulation for men with a history of sexual aggression. Mean gain scores revealed that ASAW scores became significantly more negative in the attitude-change condition compared to the control condition. Similarly, results revealed a small standardized mean difference between mean gain scores on the IRMAS-SF, but this difference was not statistically significant. Additionally, there were no significant differences between the attitude-change and control conditions on the post-manipulation ASAW or IRMAS-SF scores. Furthermore, overlapping 84% confidence intervals indicated that neither measure was more sensitive to the attitude-change manipulation than the other.

**Table 4.3***Effects of the Attitude-Change Manipulation among Men with a History of Sexual**Aggression*

Scores	Attitude-Change Condition		Control Condition		Standardized Mean Difference		
	<i>n</i>	<i>M</i> ( <i>SD</i> )	<i>n</i>	<i>M</i> ( <i>SD</i> )	<i>d</i>	95% CI	84% CI
Mean-gain							
ASAW	60	-0.15 (0.46)	58	-0.01 (0.27)	<b>-0.37</b>	<b>[-0.73, -0.002]</b>	[-0.63, -0.11]
IRMAS-SF	60	-1.93 (4.65)	58	-0.31 (4.64)	-0.35	[-0.71, 0.02]	[-0.61, -0.09]
Post-test							
ASAW	125	1.43 (0.61)	113	1.55 (0.57)	-0.21	[-0.47, 0.05]	[-0.39, -0.03]
IRMAS-SF	125	25.26 (9.65)	113	25.79 (9.37)	-0.06	[-0.31, 0.20]	[-0.24, 0.13]

*Notes.* Mean gain scores were computed by subtracting post-manipulation scores from pre-manipulation scores.

#### 4.4 Discussion

This study consisted of an initial test of the ASAW's construct validity (i.e., the extent to which its scores truly reflect attitudes toward sexual aggression against women). The reasoning behind this study's experimental design was as follows: if scores on the ASAW truly reflect attitudes toward sexual aggression against women, then they should be sensitive to an effective attitude-change manipulation. Specifically, I experimentally manipulated attitudes toward sexual aggression against women to be more negative using a persuasive message developed in accordance with well-established methods from the persuasive communication literature. When the full sample was considered (regardless of past sexual aggression), scores on the ASAW tended to decrease following the attitude-

change manipulation, but mean gain scores did not significantly differ across conditions. Additionally, as hypothesized, post-test ASAW scores were significantly lower in the attitude-change condition compared to the control condition. These effects are both in the expected direction and are consistent with construct validity; however, only the effect size for post-manipulation scores was statistically significant.

Next, because previous research shows that men with no history of sexual aggression tend to show little variability on the ASAW (i.e., floor effects), I expected that including these men in the analyses would attenuate any effects of the attitude-change manipulation on ASAW scores. Consistent with previous research, approximately 40% of men in the current sample reported engaging in some form of sexual aggression against a woman since the age of 16. As expected, men who reported no history of sexual aggression against women showed little variability on the ASAW, indicating that floor effects were indeed present. In contrast, men who reported having engaged in any sexual aggression since the age of 16 endorsed significantly more positive attitudes toward sexual aggression on the ASAW. Therefore, men with a history of sexual aggression had more room for improvement on the ASAW following the attitude-change manipulation. Accordingly, I hypothesized that the effects of the experimental manipulation may be more apparent among this subsample. In line with this notion, the magnitude of the standardized mean difference between mean gain scores across conditions more than doubled and became statistically significant when analyses were restricted to men with a history of sexual aggression against women. In contrast, although the magnitude of the effect size on post-test ASAW scores was slightly larger among men with a history of sexual aggression, the difference between the experimental and control condition was no

longer statistically significant. Nonetheless, both effect sizes were in the direction consistent with construct validity.

Next, based on the assumption that scores on the ASAW reflect a distinct cognitive construct from rape myth acceptance (Pedneault & Nunes, 2021a), I hypothesized that standardized mean differences between the attitude-change and control conditions would be larger and more negative for scores on the ASAW compared to scores on a measure of rape myth acceptance (i.e., IRMAS-SF). Results did not support this hypothesis. In fact, confidence intervals for the ASAW and the IRMAS-SF overlapped substantially, suggesting that neither scale was more sensitive to the attitude-change manipulation. With respect to mean gain scores, similar effect sizes were observed between the ASAW and IRMAS-SF, regardless of past sexual aggression. For post-manipulation scores, however, effect sizes for the ASAW tended to be non-significantly larger than effect sizes for the IRMAS-SF.

In sum, evidence for the construct validity of ASAW scores is mixed. Consistent with construct validity, results generally suggest that scores on the ASAW were sensitive to the attitude-change manipulation, but only some effects were statistically significant. However, scores on a measure of rape myth acceptance were also sensitive to the attitude-change manipulation in some cases, and the ASAW was not significantly more sensitive to the attitude-change manipulation compared to the measure of rape myth acceptance. Therefore, future research should continue to examine the extent to which the ASAW truly assesses attitudes toward sexual aggression (rather than some other construct). More conclusive tests of construct validity may be possible by addressing the limitations of this study.

#### **4.4.1 Limitations**

An analysis of selective attrition indicated that participants who were randomly assigned to the control condition were significantly more likely to be excluded from the study for failing one of the data quality criteria compared to participants assigned to the attitude-change condition. That is, they were more likely to fail more than one of the three manipulation-check questions, speed through the questionnaire, or clearly demonstrate a response set. This could suggest that the control condition was less interesting than the attitude-change condition, leading less motivated participants to try to complete the study as quickly as possible without paying close attention to the survey. In this case, the resulting control condition may represent a more conscientious group relative to the attitude-change condition. To the extent that conscientiousness is associated with attitudes toward sexual aggression or rape myth acceptance, this may have impacted the results of the attitude-change manipulation. Nonetheless, the proportion of participants consciously opting out of the study (i.e., by withdrawing or closing the survey before completing) after being randomly assigned to a condition did not significantly differ across groups. This suggests that, although the control condition may have elicited more inattentive responding among some participants, differential attrition was not the result of participants actively choosing to remove themselves from the study.

Also representing a potential risk to internal validity are demand characteristics (i.e., when participants conform their behaviour to what they believe are the study's hypotheses). The current study did not involve deception to attempt to mask the true purpose of the experiment; therefore, it is possible – even likely – that participants could

guess the general hypotheses of the study. Therefore, men in the attitude-change condition may have answered differently following the attitude-change condition simply because that is what they believed was expected of them. To the extent that this is true, this could explain lower scores on the ASAW in the attitude-change condition. However, in a similar online study that used a persuasive message to influence attitudes toward male-on-male violence among men from the community, Perrault et al. (2021) included a question to assess experimental demand characteristics at the end of the study. They found that 15% of participants in the anti-violence attitude condition and 21% of participants in the pro-violence attitude condition responded in a way that was consistent with demand characteristics. This suggests that only a minority of participants may demonstrate demand characteristics in similar online experiments. Nonetheless, even a small number of participants acting on demand characteristics could impact the results of an experiment.

Another limitation concerns the construct validity of the attitude-change manipulation. Because there is currently no independent, validated indicator of attitudes toward sexual aggression with which to test the construct validity of the experimental manipulation, the extent to which it actually made attitudes toward sexual aggression against women more negative cannot be known for certain. It is possible that the attitude-change manipulation may have influenced cognitions other than, or in addition to, attitudes toward sexual aggression against women. For instance, it may have elicited non-evaluative thoughts in participants, which may have impacted more general beliefs regarding rape (e.g., acceptance of rape myths). This may explain why some changes were observed from pre- to post-manipulation on the measure of rape myth acceptance.

Nevertheless, the attitude-change manipulation was carefully developed according to best practices in persuasive communication; therefore, I am confident that it impacted attitudes toward sexual aggression to some extent.

In hindsight, it is difficult to disentangle the effects of the attitude-change manipulation on the ASAW and IRMAS-SF. Although previous research has found that the ASAW and IRMAS-SF reflect distinct constructs (Pedneault & Nunes, 2021a), they also share substantial variance. In the current study, scores on the ASAW showed a large correlation with scores on the IRMAS-SF ( $r = .55$ ). Future conceptual replications of this study should use a comparison measure that is less highly associated with the ASAW.

With respect to the generalizability of the current findings, there were some significant differences between the initial pool of men who consented to participate in the study and the final sample included in the analyses. Specifically, the analysis sample was significantly older, more likely to be married, and more likely to identify as White compared to men who were not included in the final sample because they did not complete the study or did not meet one of the data quality criteria. There is no reason to believe that the results of the experiment would not extend to men who were not included in the analysis sample; however, it is possible that ASAW items function differently for different men. Furthermore, the descriptive statistics for past-sexual aggression as well as mean scores on the ASAW and IRMAS-SF may not generalize to all men from the community. Furthermore, it is possible that results would be different if a different attitude-change intervention had been used. For the current study, a brief persuasive message about the consequences of sexual assault was presented to participants within the context of an online survey. This intervention may not have been strong enough to

produce sufficient change in attitudes, potentially explaining the non-significant differences on the ASAW between the attitude-change and control conditions. Indeed, several of the effect sizes were smaller than those used in the a priori power analyses; therefore, these analyses were underpowered. Future studies could explore more intensive attitude-change manipulations and use these to conduct further tests of the ASAW's construct validity.

#### **4.4.2 Conclusion**

This study presents an initial test of the ASAW's construct validity. Using an experimental research design, attitudes toward sexual aggression against women were manipulated to examine the extent to which scores on the ASAW are sensitive to changes in the construct they were designed to reflect. Evidence was mixed, suggesting that scores on the ASAW tended to be sensitive to the attitude-change manipulation, but not significantly more so than scores on a measure of rape myth acceptance. This raises questions about the ASAW's unique ability to capture changes in attitudes toward sexual aggression relative to other measures of offence-supportive cognition. Future research should continue to examine the construct validity of ASAW scores. If more conclusive evidence of construct validity is obtained, the ASAW should be used to examine the relationship between attitudes toward sexual aggression and sexually aggressive behaviour among men from the community.

## **Chapter 5: General Discussion**

The objectives of this thesis were to develop and validate a new measure of attitudes toward sexual aggression against women to facilitate more rigorous research on the relationship between attitudes and sexually aggressive behaviour. In Chapter 2, I described the development of the Attitude toward Sexual Aggression against Women (ASAW) scale and confirmed its unidimensional factor structure. Next, in Chapter 3, I examined the ASAW's discriminant and incremental validity in relation to widely used measures of offence-supportive cognitions. Finally, Chapter 4 presented the results of an experimental study in which I tested the construct validity of ASAW scores. Together, these studies provide a novel contribution to the literature on attitudes and sexually aggressive behaviour. That is, the ASAW is the first measure of attitudes toward sexual aggression against women that was empirically derived and for which validity evidence is available. However, the evidence was mixed. Whereas discriminant and incremental validity evidence was relatively strong, evidence of construct validity was mixed. This evidence is reviewed next, along with some general limitations and areas for future research. Then, the implications of these findings are discussed within the context of sexual aggression research, theory, and practice.

### **5.1 ASAW Scale Characteristics**

First, there are a few points to highlight regarding the ASAW scale itself. The ASAW is the first measure of attitudes toward sexual aggression against women that was derived from a large pool of items using psychometric and structural analyses. Specifically, more than 100 different sexually aggressive behaviours and contexts were

tested when developing the ASAW, including unwanted sexual touching, non-consensual sharing of sexual images, drug/alcohol facilitated sexual assault, and forced sexual penetration. Because items were generally only discarded if they were highly redundant (defined as correlations greater than .85), the resulting ASAW items are representative of this larger pool of sexually aggressive behaviours. Furthermore, the item selection process resulted in a subset of non-redundant ASAW items, meaning that each item explains unique variance in the latent construct being assessed. Relative to prior measures of attitudes toward sexual aggression, ASAW items depict a wider variety of sexually aggressive behaviours (e.g., purposefully breaking a condom during sex, non-consensual anal sex) in more nuanced contexts (e.g., the woman previously agreed to some sexual activity). Initially, it was unknown whether evaluations of these different forms of sexual aggression would reflect the same underlying cognitive construct, but factor analyses revealed that the resulting ASAW items all loaded highly on a single factor. First, this suggests that evaluations of a wide range of sexually aggressive behaviours and contexts are driven by the same underlying construct. Additionally, these findings are consistent with the conceptualization of attitude as a summary evaluation, meaning that various evaluations of the attitude object (e.g., sexual aggression against women) are aggregated to form an overall attitude toward the object. Accordingly, ASAW items are averaged to obtain a summary evaluation (i.e., attitude) of sexually aggressive behaviour against women.

An important limitation of previous measures of attitudes toward sexual aggression was their limited variability. Indeed, research shows that their scores are extremely positively skewed, with most community men demonstrating the lowest

possible score on the scale (floor effects; Hermann et al., 2018). To minimize floor effects, ASAW items with the highest variance were retained. Nonetheless, scores on the ASAW remained seriously positively skewed, such that floor effects were still apparent for a substantial proportion of participants across studies. Specifically, between 31% (Pedneault & Nunes, 2021a) and 44% (Pedneault et al., 2021, Study 1) of men across studies received the lowest possible score on the ASAW, such that all sexually aggressive behaviours were evaluated as *very bad*. Of course, if the ASAW is a valid measure of attitudes toward sexual aggression, it is good that a large proportion of the sample respond this way. However, this limits the ASAW's sensitivity for detecting individual differences between approximately one third to half of respondents. Nonetheless, it may not be practically important to detect differences among men who truly hold very unfavourable attitudes toward sexual aggression. If attitudes are found to play a role in the perpetration of sexual aggression, research suggests that it is those who hold more favourable attitudes toward sexual aggression who would be more likely to engage in this behaviour (e.g., Sheeran et al., 2016).

However, given that the ASAW is a self-report questionnaire, it is possible that participants may be responding in a socially desirable manner, independent of their true attitudes. Socially desirable responding is the tendency for participants to answer in a way that makes them look good, such as overreporting desirable traits and behaviours and underreporting less desirable ones (Paulhus, 1991). Accordingly, if a social desirability response bias was present, these participants would be less likely to endorse anything other than very unfavourable evaluations of sexually aggressive behaviour when responding to the ASAW. There is almost no doubt that social desirability impacted

responses on the ASAW to some extent; sensitive topics are known to be more susceptible to this type of response bias (Krumpal, 2013). However, research also shows that socially desirable responding can be reduced when sensitive surveys are self-administered and when participants are assured of the confidentiality of their data (see Krumpal, 2013 for a review). As each of the current studies consisted of self-administered online surveys and participants were informed in the consent form that their data would be kept confidential, this may have minimized the impact of social desirability on the results.

Future research should explore the extent to which scores on the ASAW are associated with social desirability. For example, studies could examine correlations between the ASAW and widely used measures of social desirability, such as the Balanced Inventory of Desirable Responding (BIRD; Paulhus, 1988). An association between the ASAW and social desirability would not be surprising given that several studies have found a negative relationship between socially desirable responding and antisociality (see Tan & Grace for a review), including antisocial cognitions (Otter & Egan, 2007). Importantly, however, results suggest that social desirability accounts for real variance in subsequent antisocial behaviour, suggesting that this construct reflects more than just a response bias. Indeed, evidence suggests that social desirability measures can actually improve the prediction of violent recidivism (Mills et al., 2003). Some have speculated that wanting to present oneself in a socially desirable way may be a protective factor against antisocial behaviour because these individuals are more motivated by interpersonal approval and may have more interpersonal skills (Mills et al., 2003; Tan & Grace, 2008). Therefore, it may not be advisable to control for social desirability when

examining the relationship between the ASAW and sexually aggressive behaviour. Future research could test this by adding a measure of social desirability and the ASAW to a model predicting sexually aggressive behaviour and examining their shared variance.

## **5.2 Discriminant and Incremental Validity**

The evidence presented in this thesis provides initial evidence of the ASAW's discriminant and incremental validity. Consistent with discriminant validity, EFA results indicated that ASAW items loaded highly on a separate factor than items from three commonly used measures of offence-supportive cognitions, namely, measures of rape myth acceptance, cognitive distortions, and beliefs about rape. This suggests that scores on the ASAW may be driven by a distinct latent construct. Additionally, sensitivity analyses using a different statistical approach (i.e., heterotrait-monotrait ratio of correlations) to testing discriminant validity arrived at the same conclusion. Together, these findings suggest that the ASAW is measuring something that is not currently captured by measures of rape myth acceptance, cognitive distortions, and beliefs about rape.

The evidence was also supportive of the ASAW's incremental validity for explaining variance in self-report indicators of sexually aggressive behaviour. After accounting for widely used measures of offence-supportive cognitions, ASAW scores were independently associated with self-reported history of sexual aggression against women, likelihood of engaging in sexually aggressive behaviour, and likelihood to rape. This suggests that the ASAW may explain incremental variance in sexually aggressive behaviour, over and above that which is explained by other measures of offence-supportive cognitions.

Together, these findings suggest that the ASAW may make a novel contribution to the sexual aggression literature. But how does the ASAW fit within this literature on a conceptual level? Based on the results of the current research, I suspect that attitudes toward sexual aggression (as measured by the ASAW) may represent one of many offence-supportive cognitions relevant to understanding sexually aggressive behaviour. Recall that offence-supportive cognition is an umbrella term used to encompass a broad range of cognitions thought to be associated with sexually aggressive behaviour. In line with this notion, more favourable attitudes toward sexual aggression on the ASAW were moderately to strongly associated with higher endorsement of rape myths, cognitive distortions, and pro-rape beliefs. This is the pattern that would be expected if the ASAW was measuring a distinct but highly intertwined construct. Thus, attitudes toward sexual aggression could be considered one type of offence-supportive cognition.

Accordingly, future research should continue to explore the overlap and distinctiveness between the ASAW and other measures of offence-supportive cognitions. Additionally, prospective longitudinal studies will be essential to further understanding the unique relationship between ASAW scores and sexually aggressive behaviour. The multi-mechanism theory of cognitive distortions suggests that different offence-supportive cognitions may be differentially associated with sexually aggressive behaviour (Szumski et al., 2018). Consistent with this theory, some have suggested that certain cognitions may be associated with, but not predictive of, sexually aggressive behaviour (Maruna & Mann, 2006). For example, some post-offence cognitions (e.g., post-offence excuses) may reflect a self-serving bias rather than an etiological factor; therefore, they would not necessarily be expected to predict future behaviour. In contrast, according to

social psychological theory and research (e.g., Ajzen et al., 2018; Sheeran et al., 2016), attitudes toward behaviour can be strong predictors of future actions; thus, attitudes toward sexual aggression would be expected to predict future sexually aggressive behaviour.

This methodology also extends to tests of theoretical models of sexual aggression. That is, do ASAW scores improve the predictive validity of established theories of sexual offending? For instance, future research could attempt to extend the Confluence Model of sexual aggression by including the ASAW as another covariate. Based on the two pathways described by Malamuth et al. (1991), it would appear that the ASAW may contribute to the hostile masculinity pathway, which already consists of various offence-supportive cognitions leading to an increased likelihood of sexual offending.

Another interesting avenue of research would be to conduct a formal test of the theory of planned behaviour for predicting sexual aggression. In line with this suggestion, Enosh (2007) attempted to test the predictive validity of the theory of planned behaviour within the context of sexual coercion and victimization among adolescents; however, their measure of attitudes does not appear to conform to the theory's conceptualization of the construct. That is, the "attitude" measure asked responds the extent to which they should persist in different sexually coercive contexts on a scale from *should certainly not* to *should certainly persist*, which does not clearly include an evaluative component. Additionally, in a comprehensive theoretical paper, Miller (2010) applied the theory of planned behaviour to the etiology of sexually aggressive behaviour; however, she did not conduct any empirical tests of the model. Therefore, the ASAW could be used to conduct the first rigorous test of the theory of planned behaviour for predicting sexual aggression

against women. To illustrate, the ASAW could be administered to a sample of men from the community at Time 1, along with measures of subjective norms regarding sexual aggression, perceived behavioural control, and intentions of engaging in sexually aggressive behaviour against women over the next year. After a one-year follow-up period (Time 2), a self-report measure could be administered to the same sample of men to assess sexually aggressive behaviour committed within the previous year. In sum, prospective longitudinal studies should explore the incremental predictive validity of the ASAW relative to other measures of offence-supportive cognitions and known predictors of behaviour.

### **5.3 Construct Validity**

In contrast to discriminant and incremental validity, evidence for the construct validity of ASAW scores was mixed and relatively inconclusive. In general, scores on the ASAW tended to reflect more negative attitudes toward sexual aggression against women after the attitude-change manipulation designed to make attitudes toward sexual aggression more negative; however, manipulation effects were not all statistically significant. In fact, the pattern of significant and non-significant findings was difficult to interpret. For instance, contrary to expectation, scores on the ASAW were not consistently more sensitive to the attitude-change manipulation when analyses were restricted to men with a history of sexual aggression. Nonetheless, the differences that were statistically significant were in the direction consistent with construct validity. Furthermore, none of the findings reflected a boomerang effect on the part of participants (i.e., when participants react in the opposite direction than intended), such that even non-significant differences were in the expected direction. Thus, although the results

regarding the sensitivity of ASAW scores were mixed, they do not provide strong evidence *against* construct validity.

Importantly, however, results suggested that ASAW scores were no more sensitive to the attitude-change manipulation than a widely used measure of rape myth acceptance. If the ASAW truly reflects attitudes toward sexual aggression, its scores were expected to be more sensitive to the attitude-change manipulation than the measure of rape myth acceptance, which was shown to reflect a distinct cognitive construct in a previous study (Pedneault & Nunes, 2021a). This raises questions regarding the ASAW's sensitivity to the attitude-change manipulation, the scope of the rape myth acceptance scale, and the specificity of the attitude-change manipulation. Clearly, the results raise more questions than they provide answers. However, evidence of construct validity is based on the accumulation of various pieces of evidence, not a single study.

Assessing the ASAW's construct validity was complicated by the fact that there is currently no independent, validated indicator of attitudes toward sexual aggression against which scores could be compared. Given the extensive literature on attitude change, exploring the sensitivity of ASAW scores to an attitude-change intervention was a promising (albeit unconventional) method for testing construct validity. As observed in the current study, there are several limitations to this approach. Therefore, other creative ways of examining construct validity without an independent, validated indicator of attitudes toward sexual aggression against women should be explored. For instance, some of the model testing described earlier could provide information relevant to construct validity. For instance, if the model posited by the theory of planned behaviour is

replicated using the ASAW as a measure of attitudes toward sexual aggression, then this would provide indirect evidence consistent with construct validity.

Other social psychological theories could also be leveraged in a similar way. For example, the principle of compatibility (Ajzen & Fishbein, 1977; Ajzen et al., 2018) maintains that the attitude-behaviour relationship will be stronger when measures of each variable correspond in terms of elements (i.e., target, action, context, and time) and specificity level (i.e., how many elements are specified). The extent to which the ASAW functions according to this principle could be tested by comparing the predictive validity of its scores relative to an attitude measure that specifies different elements. For example, the Evaluation of Violence Questionnaire (EVQ; Nunes, Pedneault, & Hermann, 2021) was developed to assess attitudes toward a different target (i.e., men) and action (i.e., non-sexual violence). Thus, according to the principle of compatibility, the magnitude of the relationship between the ASAW and sexually aggressive behaviour should be larger than the magnitude of the relationship between the EVQ and sexual aggressive behaviour. Another option would be to examine correlations between the ASAW and a measure of outcome expectancies. According to the expectancy-value model of attitudes (Fishbein & Ajzen, 1975), outcome expectancies are precursors to attitudes toward the behaviour in question; thus, outcome expectancies for sexually aggressive behaviour (i.e., evaluations X subjective probability of salient outcomes) should be at least moderately associated with attitudes toward sexual aggression. In sum, the question of whether ASAW scores truly reflect attitudes toward sexual aggression against women requires additional empirical attention.

## **5.4 Research, Theoretical, and Practical Implications**

Although additional research is required to clarify the extent to which ASAW scores reflect attitudes toward sexual aggression, the current research has several potential implications if subsequent studies provide more conclusive evidence of construct validity.

### **5.4.1 Research Implications**

Assuming additional evidence supports the construct validity of ASAW scores, this measure should be used to examine the potential role of attitudes in the perpetration of sexual aggression against women. Determining the extent to which attitudes toward sexual aggression predict sexually aggressive behaviour is an important start; however, of most interest is the causal relationship between attitudes and sexual aggression. Testing a causal relationship would involve experimentally manipulating attitudes toward sexual aggression and observing if changes in attitudes cause changes in subsequent sexually aggressive behaviour. In line with such an approach, Nunes et al. (2021b) experimentally manipulated attitudes toward male-on-male violence to be more negative and then examined the impact of the manipulation on a measure of current propensity for violence within the same study session. Participants in the attitude-change condition tended to respond less violently to the propensity measure following the attitude-change condition relative to a control condition. This study illustrates how an experimental design could be used to test the influence of attitudes on sexually aggressive behaviour. Additionally, the measure of sexual aggression could follow a prospective design like the ones discussed above (e.g., self-reported sexual aggression during a one-year follow-up period) or it could involve an analogue measure (e.g., showing a female confederate sexually explicit

material after learning her dislike for such material; Hall et al., 1994; Hall & Hirschman, 1994). Evidence regarding the causal relationship between attitudes and sexually aggressive behaviour will inform theories of sexual aggression and how to prevent it.

### **5.4.2 Theoretical Implications**

If attitudes are found to influence sexually aggressive behaviour, then it would be important to integrate the attitude construct within etiological models explaining sexual aggression. In Chapter 1, I introduced the Integrated Theory of Sexual Offending (ITSO; Ward & Beech, 2006). This model suggests that offence-supportive cognitions stem from deficits in the perception and memory system, which are in turn influenced by biological and social learning processes. As stated earlier, this model could be applied to explain the relationship between attitudes and sexual aggression as it aligns with theories of attitude formation and the attitude-behaviour link. In contrast, the Confluence Model (Malamuth et al., 1991) does not currently account for attitudes toward sexual aggression; thus, integrating the attitude construct would likely require an extension of the model. Given that the ASAW appears to explain unique variance in sexually aggressive behaviour after accounting for other offence-supportive cognitions, incorporating attitudes toward sexually aggressive behaviour may improve the validity of the Confluence Model for predicting sexual aggression against women. Importantly, if attitudes are found to predict and/or explain sexually aggressive behaviour, the sexual aggression literature could benefit from integrating more social psychological theories and concepts to further explain sexually aggressive behaviour. Explaining human behaviour has been a primary focus of social psychology for decades, whereas correctional/forensic psychology has historically prioritized risk assessment and offender management (James & Proulx,

2020). Thus, the social psychological literature has the potential for expanding explanatory models of sexual aggression.

### **5.4.3 Practical Implications**

If future research finds a causal relationship between attitudes and sexually aggressive behaviour, this would have implications for interventions aimed at reducing sexual aggression. As mentioned earlier, sexual aggression against women is a widespread public health issue, with a substantial proportion of women experiencing sexual victimization and its negative consequences. Given that most men who engage in sexual aggression live in the general community (e.g., vs. prison), interventions aimed at preventing sexual aggression should target the general population through public health campaigns and interventions. To influence prosocial attitude change, well-established methods from the social psychological literature could be implemented within such interventions. Some of these methods have already been mentioned, including persuasive communication and evaluative conditioning (Hofmann et al., 2010; Stiff & Mongeau, 2016; Petty & Wegener, 1998). For instance, public health messages about the consequences of sexual assault could be communicated using a similar approach as the one used in the current attitude-change manipulation. Another method could involve inducing cognitive dissonance by highlighting incongruent beliefs, values, and behavior related to sexual aggression (e.g., Stiff & Mongeau, 2016). Research suggests that well-designed interventions can prevent sexually aggressive behaviour, especially when they are rooted in theory and empirical evidence (e.g., Basile et al., 2016). In sum, if attitudes are found to influence sexually aggressive behaviour, this would have important

implications for the development of interventions to prevent sexual aggression among men from the general population.

## **5.5 Conclusion**

The ASAW makes a novel contribution to the field of sexual aggression. Evidence suggests that scores on the ASAW have strong discriminant and incremental validity when accounting for widely used measures of offence-supportive cognitions. Evidence for the ASAW's construct validity was weaker, suggesting that more research is needed on the extent to which ASAW scores reflect attitudes toward sexual aggression. If future research finds support for the construct validity of its scores, the ASAW should be used to examine the nature of the relationship between attitudes and sexually aggressive behaviour against women.

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# Appendices

## Appendix A Consent Forms (Chapter 2)

### A.1 Sample 1

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A consent form tells you what we want you to do as a participant and allows you to make an informed decision about whether you want to participate or not. Consent forms also list any potential negative consequences and they tell you who to contact in case you have any questions or concerns after the research is finished or in case you have any questions or concerns that cannot be answered by the researcher.

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#### **Present study: Evaluations of Sexual Aggression**

**Research personnel.** The present study is being conducted by Chloe Pedneault (Ph.D. student, Department of Psychology, Carleton University, 613-520-2600 ext. 2261; [chloe.pedneault@carleton.ca](mailto:chloe.pedneault@carleton.ca)); under the supervision of Dr. Kevin Nunes (Associate Professor, Department of Psychology, Carleton University, 613-520-2600, ext. 1545; [kevin.nunes@carleton.ca](mailto:kevin.nunes@carleton.ca)).

**Concerns.** If you have any questions or concerns about this study please contact Chloe Pedneault or Kevin Nunes. If you have any ethical concerns with the study, please contact Dr. Andy Adler, Chair, Carleton University Research Ethics Board-B (by phone at 613-520-2600 ext. 4085 or via email at [ethics@carleton.ca](mailto:ethics@carleton.ca)).

**Purpose.** The purpose of this study is to test the usefulness of questions designed to measure opinions about sexual aggression.

**Task requirements.** In this confidential online survey, you will be asked to answer questions about your opinion of sexually aggressive behaviours. Participation takes about 20 minutes.

**Eligible participants.** Adult males (18 years old or older) living in North America.

**Benefits/compensation.** You will be compensated for your time, except under the following conditions: speeding (i.e., answering too quickly), straight-lining (i.e., selecting the same answer for every item), failing to follow instructional attention-checks, and ineligibility. The amount of compensation is specified in your agreement with the company managing this survey panel.

**Potential risk/discomfort.** Given that the questions ask about sexual aggression, it is possible that participating in this study may make some people feel frustrated, angry, embarrassed, or otherwise distressed. You are free to refuse to answer any of the questions or stop the survey at any time without penalty. The debriefing form at the end

of the study provides contact information for local support services that you may contact if you need or want help.

**Anonymity/confidentiality.** No information that could be used to identify you can be connected with your survey responses, so your answers will be confidential. In other words, nobody will be able to link your answers to your identity and we will not know who said what. IP addresses or any other information that could identify you will **NOT** be collected. The information you provide will be used only for research and teaching purposes, such as presentations at conferences and articles in scientific journals. Your data will be stored and protected by Qualtrics on their secure server located in Toronto, but may be disclosed via a court order or data breach. However, your answers could never be linked back to you as your answers will be confidential. The data for this study will be removed from the Qualtrics server after six months and will be permanently stored on password protected computers and data keys in the Aggressive Cognitions and Behaviour Research (ACBR) Lab at Carleton University and will be accessible only to the researchers working on this project and related future research.

**Right to withdraw.** Your participation in this study is entirely voluntary. At any point during the study, you have the right to not complete certain questions, or to withdraw. However, you would not receive payment for incomplete or random responses. An option to withdraw from the survey will be presented at the bottom of each page of the survey. If you wish to withdraw at any point, select the withdraw option and the researchers will not use your data. However, note that it is not possible to withdraw your data after you have completed the survey because your responses are confidential, and the researchers will not be able to identify which responses were yours.

This study has been approved by the Carleton University Research Ethics Board - B (#108439). Ethics clearance expiry date: March 31<sup>st</sup>, 2019

Click “I Agree” to indicate that you understand the information above and would like to participate in this study or “I Disagree” if you do not want to do the survey.

## A.2 Sample 2

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A consent form tells you what we want you to do as a participant and allows you to make an informed decision about whether you want to participate or not. Consent forms also list any potential negative consequences and they tell you who to contact in case you have any questions or concerns after the research is finished or in case you have any questions or concerns that cannot be answered by the researcher.

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**Present study: Evaluations of Sexual Aggression**

**Research personnel.** The present study is being conducted by Chloe Pedneault (Ph.D. student, Department of Psychology, Carleton University, 613-520-2600 ext. 2261; chloe.pedneault@carleton.ca); under the supervision of Dr. Kevin Nunes (Associate Professor, Department of Psychology, Carleton University, 613-520-2600, ext. 1545; kevin.nunes@carleton.ca).

**Concerns.** If you have any questions or concerns about this study please contact Chloe Pedneault or Kevin Nunes. If you have any ethical concerns with the study, please contact Dr. Bernadette Campbell, Chair, Carleton University Research Ethics Board-B (by phone at 613-520-2600 ext. 4085 or via email at ethics@carleton.ca).

**Purpose.** The purpose of this study is to test the usefulness of questions designed to measure opinions about sexual aggression.

**Task requirements.** In this confidential online survey, you will be asked to answer questions about your opinion of sexually aggressive behaviours. Note that the language used to describe these behaviours is sexually explicit and graphic. Participation takes about 20 minutes.

**Eligible participants.** Adult males (18 years old or older) living in North America.

**Benefits/compensation.** You will be compensated for your time, except under the following conditions: speeding (i.e., answering too quickly), straight-lining (i.e., selecting the same answer for every item), failing to follow instructional attention-checks, and ineligibility. The amount of compensation is specified in your agreement with the company managing this survey panel.

**Potential risk/discomfort.** Given that the questions ask about sexual aggression, it is possible that participating in this study may make some people feel frustrated, angry, embarrassed, or otherwise distressed. You are free to refuse to answer any of the questions or stop the survey at any time without penalty. The debriefing form at the end of the study provides contact information for local support services that you may contact if you need or want help.

**Anonymity/confidentiality.** No information that could be used to identify you can be connected with your survey responses, so your answers will be confidential. In other

words, nobody will be able to link your answers to your identity and we will not know who said what. IP addresses or any other information that could identify you will **NOT** be collected. The information you provide will be used only for research and teaching purposes, such as presentations at conferences and articles in scientific journals. Your data will be stored and protected by Qualtrics on their secure server located in Toronto, but may be disclosed via a court order or data breach. However, your answers could never be linked back to you as your answers will be confidential. The data for this study will be removed from the Qualtrics server after six months and will be permanently stored on password protected computers and data keys in the Aggressive Cognitions and Behaviour Research (ACBR) Lab at Carleton University and will be accessible only to the researchers working on this project and related future research.

**Right to withdraw.** Your participation in this study is entirely voluntary. At any point during the study, you have the right to not complete certain questions, or to withdraw. However, you would not receive payment for incomplete or random responses. An option to withdraw from the survey will be presented at the bottom of each page of the survey. If you wish to withdraw at any point, select the withdraw option and the researchers will not use your data. However, note that it is not possible to withdraw your data after you have completed the survey because your responses are confidential, and the researchers will not be able to identify which responses were yours.

This study has been approved by the Carleton University Research Ethics Board - B (#108439). Ethics clearance expiry date: March 31st, 2020

Click “I Agree” to indicate that you understand the information above and would like to participate in this study or “I Disagree” if you do not want to do the survey.

### A.3 Sample 3

A consent form tells you what we want you to do as a participant and allows you to make an informed decision about whether you want to participate or not. Consent forms also list any potential negative consequences and they tell you who to contact in case you have any questions or concerns after the research is finished or in case you have any questions or concerns that cannot be answered by the researcher.

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**Present study: Evaluations of Sexual Aggression**

**Research personnel.** The present study is being conducted by Chloe Pedneault (Ph.D. student, Department of Psychology, Carleton University, 613-520-2600 ext. 2261; [chloe.pedneault@carleton.ca](mailto:chloe.pedneault@carleton.ca)); under the supervision of Dr. Kevin Nunes (Associate Professor, Department of Psychology, Carleton University, 613-520-2600, ext. 1545; [kevin.nunes@carleton.ca](mailto:kevin.nunes@carleton.ca)).

**Concerns.** If you have any questions or concerns about this study please contact Chloe Pedneault or Kevin Nunes. If you have any ethical concerns with the study, please contact the Chair of the Carleton University Research Ethics Board-B (by phone at 613-520-2600 ext. 4085 or via email at [ethics@carleton.ca](mailto:ethics@carleton.ca)).

**Purpose.** The purpose of this study is to test the usefulness of questions designed to measure opinions about sexual aggression.

**Task requirements.** In this confidential online survey, you will be asked to answer questions about your opinion of sexually aggressive behaviours. Note that the language used to describe these behaviours is sexually explicit and graphic. Participation takes about 20 minutes.

**Eligible participants.** Adult males (18 years old or older) living in Canada or the United States who are sexually attracted to women.

**Benefits/compensation.** You will be compensated for your time, except under the following conditions: speeding (i.e., answering too quickly), straight-lining (i.e., selecting the same answer for every item), failing to follow instructional attention-checks, and ineligibility. The amount of compensation is specified in your agreement with the company managing this survey panel.

**Potential risk/discomfort.** Given that the questions ask about sexual aggression, it is possible that participating in this study may make some people feel frustrated, angry, embarrassed, or otherwise distressed. You are free to refuse to answer any of the questions or stop the survey at any time without penalty. The debriefing form at the end of the study provides contact information for local support services that you may contact if you need or want help.

**Anonymity/confidentiality.** No information that could be used to identify you can be connected with your survey responses, so your answers will be confidential. In other words, nobody will be able to link your answers to your identity and we will not know who said what. IP addresses or any other information that could identify you will **NOT** be collected. The information you provide will be used only for research and teaching purposes, such as presentations at conferences and articles in scientific journals. Your data will be stored and protected by Qualtrics on their secure server located in Toronto, but may be disclosed via a court order or data breach. However, your answers could never be linked back to you as your answers will be confidential. The data for this study will be removed from the Qualtrics server after six months and will be permanently stored on password protected computers and data keys in the Aggressive Cognitions and Behaviour Research (ACBR) Lab at Carleton University and will be accessible only to the researchers working on this project and related future research.

**Right to withdraw.** Your participation in this study is entirely voluntary. At any point during the study, you have the right to not complete certain questions, or to withdraw. However, you would not receive payment for incomplete or random responses. An option to withdraw from the survey will be presented at the bottom of each page of the survey. If you wish to withdraw at any point, select the withdraw option and the researchers will not use your data. However, note that it is not possible to withdraw your data after you have completed the survey because your responses are confidential, and the researchers will not be able to identify which responses were yours.

This study has been approved by the Carleton University Research Ethics Board - B (#108439). Ethics clearance expiry date: March 31, 2021

Click “I Agree” to indicate that you understand the information above and would like to participate in this study or “I Disagree” if you do not want to do the survey.

## Appendix B Demographic Questionnaire (Chapter 2)

1. How old are you? (years) **(Samples 1-3)**
2. What is your gender? (Male, female, other) **(Samples 1-3)**
3. What is your ethnicity? (White, Black, Indigenous, Asian, East Indian, Hispanic, Arab, Other [please specify]) **(Samples 2 and 3 only)**
4. In what country are you currently living? (Canada, United States, Other) **(Samples 1-3)**
5. What is your current relationship status? (Single, In a romantic relationship, Living with a romantic partner, Married, Separated/divorced/widowed) **(Samples 1-3)**
6. Who are you most sexually attracted to? (Women, Men, Both women and men equally, other) **(Samples 1-3)**

## Appendix C Attention-Check Questions (Chapter 2)

### C.1 Sample 1

1. You're with a woman who is wearing a sexy dress and has been flirting with you. Please select a bit good from the options below to demonstrate that you are paying attention. (very bad, a bit bad, a bit good, very good)
2. You're with a woman who is drunk or high. Please select very fun from the options below to demonstrate that you are paying attention. (very sad, a bit sad, a bit fun, very fun)
3. You're with a woman who is wearing a sexy dress and has been flirting with you. Please select a bit positive from the options below to demonstrate that you are paying attention. (very bad, a bit bad, a bit good, very good)

### C.2 Sample 2

1. Please select "very good". This is just to check if people are paying attention. (very bad, a bit bad, a bit good, very good)
2. Please select "a bit negative". This is just to check if people are paying attention. (very negative, a bit negative, a bit positive, very positive)
3. Please select "a bit positive". This is just to check if people are paying attention. (very negative, a bit negative, a bit positive, very positive)

### C.3 Sample 3

1. Data quality is important to us. Please select "a bit good" to show that you have read this question. We appreciate your continued attention. (very bad, a bit bad, a bit good, very good)
2. Data quality is important to us. Please select "a bit positive" to show that you have read this question. We appreciate your continued attention. (very negative, a bit negative, a bit positive, very positive)
3. Data quality is important to us. Please select "not at all bad" to show that you have read this question. We appreciate your continued attention. (very bad, pretty bad, not that bad, not at all bad)

## Appendix D Nature Pictures Intended to Enhance Mood

*[images available upon request]*

- Image of horses (1)
- Image of horses (2)
- Image of trees (1)
- Image of trees (2)
- Image of dolphins
- Image of wolf
- Image of moose (1)
- Image of moose (2)
- Image of fish

## Appendix E Debriefing Forms (Chapter 2)

### E.1 Sample 1

#### Debriefing Form: Evaluations of Sexual Aggression

---

*Thank you very much for participating in our study. We hope the following information addresses any questions or concerns you may have.*

##### **What Are We Trying to Learn in this Research?**

Our ultimate goal is to develop a measure of evaluation of sexual aggression. The purpose of the current study is to choose which of the many questions you answered should be included in the final measure. We will choose the best questions based on average responses and the correlations between the questions.

##### **Why Is This Important to Scientists or the General Public?**

Although evaluations have a demonstrated influence on general behaviour, evaluation of sexual violence seems to have been largely overlooked in theory, research, and clinical practice (Nunes, Hermann, White, Pettersen, & Bumby, 2018). To address this important gap, we are developing a self-report measure of evaluation of sexual aggression to facilitate advances in research and practice that may ultimately contribute to reducing sexual violence.

##### **Where Can I Learn More?**

Below is some information where you can learn more about rape-supportive cognition and sexually aggressive behaviour.

You can also visit our website that provides more information about our research on this topic: <http://www.carleton.ca/acbrlab/>

She asked for it: The impact of rape myths: <http://www.psychologytoday.com/blog/in-love-and-war/201211/she-asked-it-the-impact-rape-myths>

Statistics on sexual assault in Canada:

<http://www.statcan.gc.ca/pub/85f0033m/85f0033m2010024-eng.pdf>

Information about sexual offenders:

[http://www.csom.org/pubs/needtoknow\\_fs.pdf](http://www.csom.org/pubs/needtoknow_fs.pdf)

##### **What if I Have Questions Later?**

The present study is being conducted by Chloe Pedneault (Ph.D. student, Department of Psychology, Carleton University, 613-520-2600 ext. 2261; [chloe.pedneault@carleton.ca](mailto:chloe.pedneault@carleton.ca)) under the supervision of Dr. Kevin Nunes (Associate Professor, Department of Psychology, Carleton University, 613-520-2600, ext. 1545; [kevin.nunes@carleton.ca](mailto:kevin.nunes@carleton.ca)). If you have any questions or concerns about this study please contact Kevin Nunes. If you

have any ethical concerns with the study, please contact Dr. Andy Adler, Chair, Carleton University Research Ethics Board-B (by phone at 613-520-2600 ext. 4085 or via email at [ethics@carleton.ca](mailto:ethics@carleton.ca)).

This study has been approved by the Carleton University Research Ethics Board - B (#108439).

**Is There Anything I Can Do if I Found This Experiment to be Emotionally Draining?**

If you experience any distress (e.g., feel sad or mad) as a result of this study, please seek help from one of the following resources as soon as possible:

**Resources:**

Mental Health Today: <http://www.mental-health-today.com/resources/toll.htm>

Suicide prevention lifeline: 1-800-273-8255 (TALK) [www.suicidepreventionlifeline.org/](http://www.suicidepreventionlifeline.org/)

Some resources in Canada: <http://www1.carleton.ca/health/emergencies-and-crisis/emergency-numbers/>

List of resources by country: <http://www.suicideforum.com/showthread.php?42096-Crisis-Hotline-Numbers-International>

**For further information about mental health please see:**

Canadian Mental Health Association: <http://www.cmha.ca/mental-health/>

[Thank you very much for making this research possible.](#)

## E.2 Sample 2

### Debriefing Form: Evaluations of Sexual Aggression

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*Thank you very much for participating in our study. We hope the following information addresses any questions or concerns you may have.*

#### **What Are We Trying to Learn in this Research?**

Our ultimate goal is to develop a measure of evaluation of sexual aggression. The purpose of the current study is to choose which of the many questions you answered should be included in the final measure. We will choose which questions to keep based on average responses and the correlations between the questions. In this study, we examined various points of view related to sexual aggression; however, we do not condone the behaviour or points of view described.

#### **Why Is This Important to Scientists or the General Public?**

Although evaluations have a demonstrated influence on general behaviour, evaluation of sexual violence seems to have been largely overlooked in theory, research, and clinical practice (Nunes, Hermann, White, Pettersen, & Bumby, 2018). To address this important gap, we are developing a self-report measure of evaluation of sexual aggression to facilitate advances in research and practice that may ultimately contribute to reducing sexual violence.

#### **Where Can I Learn More?**

Below is some information where you can learn more about rape-supportive cognition and sexually aggressive behaviour.

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She asked for it: The impact of rape myths: <http://www.psychologytoday.com/blog/in-love-and-war/201211/she-asked-it-the-impact-rape-myths>

Statistics on sexual assault in Canada:

<http://www.statcan.gc.ca/pub/85f0033m/85f0033m2010024-eng.pdf>

Information about sexual offenders:

[http://www.csom.org/pubs/needtoknow\\_fs.pdf](http://www.csom.org/pubs/needtoknow_fs.pdf)

#### **What if I Have Questions Later?**

The present study is being conducted by Chloe Pedneault (Ph.D. student, Department of Psychology, Carleton University, 613-520-2600 ext. 2261; [chloe.pedneault@carleton.ca](mailto:chloe.pedneault@carleton.ca)) under the supervision of Dr. Kevin Nunes (Associate Professor, Department of Psychology, Carleton University, 613-520-2600, ext. 1545; [kevin.nunes@carleton.ca](mailto:kevin.nunes@carleton.ca)). If you have any questions or concerns about this study please contact Kevin Nunes. If you have any ethical concerns with the study, please contact Dr. Bernadette Campbell, Chair,

Carleton University Research Ethics Board-B (by phone at 613-520-2600 ext. 4085 or via email at [ethics@carleton.ca](mailto:ethics@carleton.ca)).

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**Is There Anything I Can Do if I Found This Experiment to be Emotionally Draining?**

If you experience any distress (e.g., feel sad or mad) as a result of this study, please seek help from one of the following resources as soon as possible:

**Resources:**

Mental Health Today: <http://www.mental-health-today.com/resources/toll.htm>

Suicide prevention lifeline: 1-800-273-8255 (TALK) [www.suicidepreventionlifeline.org/](http://www.suicidepreventionlifeline.org/)  
Some resources in Canada: <http://www1.carleton.ca/health/emergencies-and-crisis/emergency-numbers/>

List of resources by country: <http://www.suicideforum.com/showthread.php?42096-Crisis-Hotline-Numbers-International>

**For further information about mental health please see:**

Canadian Mental Health Association: <http://www.cmha.ca/mental-health/>

Thank you very much for making this research possible.

### E.3 Sample 3

#### Debriefing Form: Evaluations of Sexual Aggression

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*Thank you very much for participating in our study. We hope the following information addresses any questions or concerns you may have.*

#### **What Are We Trying to Learn in this Research?**

Our ultimate goal is to develop a measure of evaluation of sexual aggression. The purpose of the current study is to choose which of the many questions you answered should be included in the final measure. We will choose which questions to keep based on average responses and the correlations between the questions. In this study, we examined various points of view related to sexual aggression; however, we do not condone the behaviour or points of view described.

#### **Why Is This Important to Scientists or the General Public?**

Although evaluations have a demonstrated influence on general behaviour, evaluation of sexual violence seems to have been largely overlooked in theory, research, and clinical practice (Nunes, Hermann, White, Pettersen, & Bumby, 2018). To address this important gap, we are developing a self-report measure of evaluation of sexual aggression to facilitate advances in research and practice that may ultimately contribute to reducing sexual violence.

#### **Where Can I Learn More?**

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You can also visit our website that provides more information about our research on this topic: <http://www.carleton.ca/acbrlab/>

She asked for it: The impact of rape myths: <http://www.psychologytoday.com/blog/in-love-and-war/201211/she-asked-it-the-impact-rape-myths>

Statistics on sexual assault in Canada:

<http://www.statcan.gc.ca/pub/85f0033m/85f0033m2010024-eng.pdf>

#### **What if I Have Questions Later?**

The present study is being conducted by Chloe Pedneault (Ph.D. student, Department of Psychology, Carleton University, 613-520-2600 ext. 2261; [chloe.pedneault@carleton.ca](mailto:chloe.pedneault@carleton.ca)) under the supervision of Dr. Kevin Nunes (Associate Professor, Department of Psychology, Carleton University, 613-520-2600, ext. 1545; [kevin.nunes@carleton.ca](mailto:kevin.nunes@carleton.ca)). If you have any questions or concerns about this study please contact Kevin Nunes. If you have any ethical concerns with the study, please contact the Chair of the Carleton University Research Ethics Board-B (by phone at 613-520-2600 ext. 4085 or via email at [ethics@carleton.ca](mailto:ethics@carleton.ca)).

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**Is There Anything I Can Do if I Found This Experiment to be Emotionally Draining?**

If you experience any distress (e.g., feel sad or mad) as a result of this study, please seek help from one of the following resources as soon as possible:

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Mental Health Today: <http://www.mental-health-today.com/resources/toll.htm>

Suicide prevention lifeline: 1-800-273-8255 (TALK) [www.suicidepreventionlifeline.org/](http://www.suicidepreventionlifeline.org/)  
Some resources in Canada: <http://www1.carleton.ca/health/emergencies-and-crisis/emergency-numbers/>

List of resources by country: <https://www.suicideforum.com/crisis-lines-sites/>

**For further information about mental health please see:**

Canadian Mental Health Association: <http://www.cmha.ca/mental-health/>

Thank you very much for making this research possible.

## Appendix F Pool of Items (Chapter 2, Study 1)

### F.1 Sample 1

Each item was presented once with three different response scales; as such, there were **153** items in total (51 Items X 3 Response Scales).

#### Response scales:

1. very bad, a bit bad, a bit good, very good
2. very sad, a bit sad, a bit fun, very fun
3. very negative, a bit negative, a bit positive, very positive

#### **INSTRUCTIONS**

**Please rate how you think or feel about having sexual contact with a woman in each of the ways described below.**

Tactic 1: Telling a woman you'll make something bad happen...

1. You're with a woman who is wearing a sexy dress and has been flirting with you. She refuses to let you kiss or sexually touch her, so you tell her that you'll make something bad happen to her reputation or employment if she doesn't let you kiss or sexually touch her.
2. You're with a woman who is wearing a sexy dress and has been flirting with you. She refuses to give you oral sex, so you tell her that you'll make something bad happen to her reputation or employment if she doesn't give you oral sex.
3. You're with a woman who is wearing a sexy dress and has been flirting with you. She refuses to have sex with you, so you tell her that you'll make something bad happen to her reputation or employment if she doesn't have sex with you.
4. You're with a woman who is drunk or high. She refuses to let you kiss or sexually touch her, so you tell her that you'll make something bad happen to her reputation or employment if she doesn't let you kiss or sexually touch her.
5. You're with a woman who is drunk or high. She refuses to give you oral sex, so you tell her that you'll make something bad happen to her reputation or employment if she doesn't give you oral sex.
6. You're with a woman who is drunk or high. She refuses to have sex with you, so you tell her that you'll make something bad happen to her reputation or employment if she doesn't have sex with you.
7. Your date/girlfriend/wife refuses to let you kiss or sexually touch her, so you tell her that you'll make something bad happen to her reputation or employment if she doesn't let you kiss or sexually touch her.
8. Your date/girlfriend/wife refuses to give you oral sex, so you tell her that you'll make something bad happen to her reputation or employment if she doesn't give you oral sex.
9. Your date/girlfriend/wife refuses to have sex with you, so you tell her that you'll make something bad happen to her reputation or employment if she doesn't have sex with you.

Tactic 2: Blocking a woman from getting away...

1. You're with a woman who is wearing a sexy dress and has been flirting with you. She refuses to let you kiss or sexually touch her, so you block her from getting

away from you (for example, by blocking the doorway) until she lets you kiss or sexually touch her.

2. You're with a woman who is wearing a sexy dress and has been flirting with you. She refuses to give you oral sex, so you block her from getting away from you (for example, by blocking the doorway) until she gives you oral sex.
3. You're with a woman who is wearing a sexy dress and has been flirting with you. She refuses to have sex with you, so you block her from getting away from you (for example, by blocking the doorway) until she has sex with you.
4. You're with a woman who is drunk or high. She refuses to let you kiss or sexually touch her, so you block her from getting away from you (for example, by blocking the doorway) until she lets you kiss or sexually touch her.
5. You're with a woman who is drunk or high. She refuses to give you oral sex, so you block her from getting away from you (for example, by blocking the doorway) until she gives you oral sex.
6. You're with a woman who is drunk or high. She refuses to have sex with you, so you block her from getting away from you (for example, by blocking the doorway) until she has sex with you.
7. Your date/girlfriend/wife refuses to let you kiss or sexually touch her, so you block her from getting away from you (for example, by blocking the doorway) until she lets you kiss or sexually touch her.
8. Your date/girlfriend/wife refuses to give you oral sex, so you block her from getting away from you (for example, by blocking the doorway) until she gives you oral sex.
9. Your date/girlfriend/wife refuses to have sex with you, so you block her from getting away from you (for example, by blocking the doorway) until she has sex with you.

#### Tactic 3: Intimidating a woman...

1. You're with a woman who is wearing a sexy dress and has been flirting with you. She refuses to let you kiss or sexually touch her, so you intimidate her by yelling, swearing, or breaking stuff until she lets you kiss or sexually touch her.
2. You're with a woman who is wearing a sexy dress and has been flirting with you. She refuses to give you oral sex, so you intimidate her by yelling, swearing, or breaking stuff until she gives you oral sex.
3. You're with a woman who is wearing a sexy dress and has been flirting with you. She refuses to have sex with you, so you intimidate her by yelling, swearing, or breaking stuff until she has sex with you.
4. You're with a woman who is drunk or high. She refuses to let you kiss or sexually touch her, so you intimidate her by yelling, swearing, or breaking stuff until she lets you kiss or sexually touch her.
5. You're with a woman who is drunk or high. She refuses to give you oral sex, so you intimidate her by yelling, swearing, or breaking stuff until she gives you oral sex.
6. You're with a woman who is drunk or high. She refuses to have sex with you, so you intimidate her by yelling, swearing, or breaking stuff until she has sex with you.

7. Your date/girlfriend/wife refuses to let you kiss or sexually touch her, so you intimidate her by yelling, swearing, or breaking stuff until she lets you kiss or sexually touch her.
8. Your date/girlfriend/wife refuses to give you oral sex, so you intimidate her by yelling, swearing, or breaking stuff until she gives you oral sex.
9. Your date/girlfriend/wife refuses to have sex with you, so you intimidate her by yelling, swearing, or breaking stuff until she has sex with you.

Tactic 4: Taking advantage of a woman when she is too drunk or high...

1. Kissing or sexually touching a woman who has been flirting with you and is wearing a sexy dress when she is too drunk or high to know or stop what is happening.
2. You having oral sex with a woman who has been flirting with you and is wearing a sexy dress when she is too drunk or high to know or stop what is happening.
3. You having sex with a woman who has been flirting with you and is wearing a sexy dress when she is too drunk or high to know or stop what is happening.
4. Kissing or sexually touching your date/girlfriend/wife when she is too drunk or high to know or stop what is happening.
5. You having oral sex with your date/girlfriend/wife when she is too drunk or high to know or stop what is happening.
6. You having sex with your date/girlfriend/wife when she is too drunk or high to know or stop what is happening.

Tactic 5: Threatening to physically harm a woman...

1. You're with a woman who is wearing a sexy dress and has been flirting with you. She refuses to let you kiss or sexually touch her, so you threaten to physically harm her if she doesn't let you kiss or sexually touch her.
2. You're with a woman who is wearing a sexy dress and has been flirting with you. She refuses to give you oral sex, so you threaten to physically harm her if she doesn't give you oral sex.
3. You're with a woman who is wearing a sexy dress and has been flirting with you. She refuses to have sex with you, so you threaten to physically harm her if she doesn't have sex with you.
4. You're with a woman who is drunk or high. She refuses to let you kiss or sexually touch her, so you threaten to physically harm her if she doesn't let you kiss or sexually touch her.
5. You're with a woman who is drunk or high. She refuses to give you oral sex, so you threaten to physically harm her if she doesn't give you oral sex.
6. You're with a woman who is drunk or high. She refuses to have sex with you, so you threaten to physically harm her if she doesn't have sex with you.
7. Your date/girlfriend/wife refuses to let you kiss or sexually touch her, so you threaten to physically harm her if she doesn't let you kiss or sexually touch her.
8. Your date/girlfriend/wife refuses to give you oral sex, so you threaten to physically harm her if she doesn't give you oral sex.
9. Your date/girlfriend/wife refuses to have sex with you, so you threaten to physically harm her if she doesn't have sex with you.

Tactic 6: Physically forcing a woman...

1. You're with a woman who is wearing a sexy dress and has been flirting with you. She refuses to let you kiss or sexually touch her, so you physically force her (for example, by holding her down) to let you kiss or sexually touch her.
2. You're with a woman who is wearing a sexy dress and has been flirting with you. She refuses to give you oral sex, so you physically force her (for example, by holding her down) to give you oral sex.
3. You're with a woman who is wearing a sexy dress and has been flirting with you. She refuses to have sex with you, so you physically force her (for example, by holding her down) to have sex with you.
4. You're with a woman who is drunk or high. She refuses to let you kiss or sexually touch her, so you physically force her (for example, by holding her down) to let you kiss or sexually touch her.
5. You're with a woman who is drunk or high. She refuses to give you oral sex, so you physically force her (for example, by holding her down) to give you oral sex.
6. You're with a woman who is drunk or high. She refuses to have sex with you, so you physically force her (for example, by holding her down) to have sex with you.
7. Your date/girlfriend/wife refuses to let you kiss or sexually touch her, so you physically force her (for example, by holding her down) to let you kiss or sexually touch her.
8. Your date/girlfriend/wife refuses to give you oral sex, so you physically force her (for example, by holding her down) to give you oral sex.
9. Your date/girlfriend/wife refuses to have sex with you, so you physically force her (for example, by holding her down) to have sex with you.

## F.2 Sample 2

Each of the 63 new items were presented with two different response scales. In addition, participants completed the 12 items retained from Study 1 using one of the two response scales. As such, participants completed a total of **138 items**.

Response scales:

1. very bad, a bit bad, a bit good, very good
2. very negative, a bit negative, a bit positive, very positive

### **INSTRUCTIONS**

**Please rate how you think or feel about having sexual contact with a woman in each of the ways described below.**

New Items:

Tactic 1: Telling a woman you'll make something bad happen to her...

1. You're with a woman who is wearing a sexy dress and has been flirting with you. She's letting you kiss and sexually touch her but refuses to give you oral sex, so you tell her that you'll make something bad happen to her reputation or employment if she doesn't give you oral sex.
2. You're with a woman who is drunk or high. She's letting you kiss and sexually touch her but refuses to give you oral sex, so you tell her that you'll make

something bad happen to her reputation or employment if she doesn't give you oral sex.

3. Your date/girlfriend/wife is letting you kiss and sexually touch her but refuses to give you oral sex, so you tell her that you'll make something bad happen to her reputation or employment if she doesn't give you oral sex.
4. You're with a woman who is wearing a sexy dress and has been flirting with you. She's giving you oral sex but refuses to have sexual intercourse, so you tell her that you'll make something bad happen to her reputation or employment if she doesn't have sex with you.
5. You're with a woman who is drunk or high. She's giving you oral sex but refuses to have sexual intercourse, so you tell her that you'll make something bad happen to her reputation or employment if she doesn't have sex with you.
6. Your date/girlfriend/wife is giving you oral sex but refuses to have sexual intercourse, so you tell her that you'll make something bad happen to her reputation or employment if she doesn't have sex with you.

Tactic 2: Blocking a woman from getting away...

1. You're with a woman who is wearing a sexy dress and has been flirting with you. She's letting you kiss and sexually touch her but refuses to give you oral sex, so you block her from getting away from you (for example, by blocking the doorway) until she gives you oral sex.
2. You're with a woman who is drunk or high. She's letting you kiss and sexually touch her but refuses to give you oral sex, so you block her from getting away from you (for example, by blocking the doorway) until she gives you oral sex.
3. Your date/girlfriend/wife is letting you kiss and sexually touch her but refuses to give you oral sex, so you block her from getting away from you (for example, by blocking the doorway) until she gives you oral sex.
4. You're with a woman who is wearing a sexy dress and has been flirting with you. She's giving you oral sex but refuses to have sexual intercourse, so you block her from getting away from you (for example, by blocking the doorway) until she has sex with you.
5. You're with a woman who is drunk or high. She's giving you oral sex but refuses to have sexual intercourse, so you block her from getting away from you (for example, by blocking the doorway) until she has sex with you.
6. Your date/girlfriend/wife is giving you oral sex but refuses to have sexual intercourse, so you block her from getting away from you (for example, by blocking the doorway) until she has sex with you.

Tactic 3: Intimidating a woman...

1. You're with a woman who is drunk or high. She's letting you kiss and sexually touch her but refuses to give you oral sex, so you intimidate her by yelling, swearing, or breaking stuff until she gives you oral sex.
2. Your date/girlfriend/wife is letting you kiss and sexually touch her but refuses to give you oral sex, so you intimidate her by yelling, swearing, or breaking stuff until she gives you oral sex.
3. You're with a woman who is drunk or high. She's giving you oral sex but refuses to have sexual intercourse, so you intimidate her by yelling, swearing, or breaking stuff until she has sex with you.

4. Your date/girlfriend/wife is giving you oral sex but refuses to have sexual intercourse, so you intimidate her by yelling, swearing, or breaking stuff until she has sex with you.

Tactic 4: Taking advantage of a woman when she is too drunk or high...

7. You're drinking or getting high with your date/girlfriend/wife. She's having sex with you but refuses to let you take sexual pictures of her. When she is too drunk or high to know or stop what is happening, you take sexual pictures of her anyway.
8. You're drinking or getting high with your date/girlfriend/wife. She's letting you kiss and sexually touch her but refuses to give you oral sex. When she is too drunk or high to know or stop what is happening, you put your penis in her mouth to get her to give you oral sex.
9. You're drinking or getting high with your date/girlfriend/wife. She's giving you oral sex but refuses to have sexual intercourse. When she is too drunk or high to know or stop what is happening, you have sex with her.
10. You pushing your penis into your date/girlfriend/wife's mouth to get her to give you oral sex when she is too drunk or high to know or stop what is happening.

Tactic 5: Threatening physical harm...

1. You're with a woman who is drunk or high. She's letting you kiss and sexually touch her but refuses to give you oral sex, so you threaten to physically harm her if she doesn't give you oral sex.
2. Your date/girlfriend/wife is letting you kiss and sexually touch her but refuses to give you oral sex, so you threaten to physically harm her if she doesn't give you oral sex.
3. You're with a woman who is drunk or high. She's giving you oral sex but refuses to have sexual intercourse, so you threaten to physically harm her if she doesn't have sex with you.
4. Your date/girlfriend/wife is giving you oral sex but refuses to have sexual intercourse, so you threaten to physically harm her if she doesn't have sex with you.

Tactic 6: Physically forcing a woman...

1. You're with a woman who is wearing a sexy dress and has been flirting with you. She's letting you kiss and sexually touch her but refuses to give you oral sex, so you push her head down towards your penis until she gives you oral sex.
2. You're with a woman who is drunk or high. She's letting you kiss and sexually touch her but refuses to give you oral sex, so you push her head down towards your penis until she gives you oral sex.
3. Your date/girlfriend/wife is letting you kiss and sexually touch her but refuses to give you oral sex, so you push her head down towards your penis until she gives you oral sex.
4. You're with a woman who is wearing a sexy dress and has been flirting with you. She's giving you oral sex but refuses to have sexual intercourse, so you hold her down until she has sex with you.
5. You're with a woman who is drunk or high. She's giving you oral sex but refuses to have sexual intercourse, so you hold her down until she has sex with you.

6. Your date/girlfriend/wife is giving you oral sex but refuses to have sexual intercourse, so you hold her down until she has sex with you.

Tactic 7: Taking pictures ...

1. You're with a woman who is drunk or high. She's having sex with you but refuses to let you take sexual pictures of her. You take sexual pictures of her anyway.
2. You're having sex with your date/girlfriend/wife, but she refuses to let you take sexual pictures of her. You take sexual pictures of her anyway.

Tactic 8: Spreading rumours about her...

1. You're with a woman who is wearing a sexy dress and has been flirting with you. She's refusing to let you kiss or sexually touch her, so you tell her that you'll spread rumours about her if she doesn't let you kiss or sexually touch her.
2. You're with a woman who is drunk or high. She's refusing to let you kiss or sexually touch her, so you tell her that you'll spread rumours about her if she doesn't let you kiss or sexually touch her.
3. Your date/girlfriend/wife is refusing to let you kiss or sexually touch her, so you tell her that you'll spread rumours about her if she doesn't let you kiss or sexually touch her.
4. You're with a woman who is wearing a sexy dress and has been flirting with you. She's refusing to give you oral sex, so you tell her that you'll spread rumours about her if she doesn't give you oral sex.
5. You're with a woman who is drunk or high. She's refusing to give you oral sex, so you tell her that you'll spread rumours about her if she doesn't give you oral sex.
6. Your date/girlfriend/wife is refusing to give you oral sex, so you tell her that you'll spread rumours about her if she doesn't give you oral sex.
7. You're with a woman who is wearing a sexy dress and has been flirting with you. She's refusing to have sex with you, so you tell her that you'll spread rumours about her if she doesn't have sex with you.
8. You're with a woman who is drunk or high. She's refusing to have sex with you, so you tell her that you'll spread rumours about her if she doesn't have sex with you.
9. Your date/girlfriend/wife is refusing to have sex with you, so you tell her that you'll spread rumours about her if she doesn't have sex with you.
10. You're with a woman who is drunk or high. She's letting you kiss and sexually touch her but refuses to give you oral sex, so you tell her that you'll spread rumours about her if she doesn't give you oral sex.
11. You're with a woman who is drunk or high. She's giving you oral sex but refuses to have sexual intercourse, so you tell her that you'll spread rumours about her if she doesn't have sex with you.
12. Your date/girlfriend/wife is letting you kiss and sexually touch her but refuses to give you oral sex, so you tell her that you'll spread rumours about her if she doesn't give you oral sex.
13. Your date/girlfriend/wife is giving you oral sex but refuses to have sexual intercourse, so you tell her that you'll spread rumours about her if she doesn't have sex with you.

Tactic 9: Posting sexual pictures on the internet...

1. Your girlfriend/wife is refusing to let you kiss or sexually touch her, so you tell her that you'll post sexual pictures of her on the internet if she doesn't let you kiss or sexually touch her.
2. Your girlfriend/wife is refusing to give you oral sex, so you tell her that you'll post sexual pictures of her on the internet if she doesn't give you oral sex.
3. Your girlfriend/wife is refusing to have sex with you, so you tell her that you'll post sexual pictures of her on the internet if she doesn't have sex with you.
4. Your girlfriend/wife is letting you kiss and sexually touch her but refuses to give you oral sex, so you tell her that you'll post sexual pictures of her on the internet if she doesn't give you oral sex.
5. Your girlfriend/wife is giving you oral sex but refuses to have sexual intercourse, so you tell her that you'll post sexual pictures of her on the internet if she doesn't have sex with you.

Tactic 10: Sexually touching a woman without consent...

1. You're talking with a woman you just met. You put your hand on her leg, but she pushes it away. You put your hand back on her leg.
2. You're with a woman who is wearing a sexy dress and has been flirting with you. You put your hand on her leg, but she pushes it away. You put your hand back on her leg.
3. You're with a woman who is drunk or high. You put your hand on her leg, but she pushes it away. You put your hand back on her leg.
4. You're talking with a woman you just met. You grab her butt, but she pushes your hand away. You grab her butt again.
5. You're with a woman you just met who is wearing a sexy dress and has been flirting with you. You grab her butt, but she pushes your hand away. You grab her butt again.
6. You're with a woman you just met who is drunk or high. You grab her butt, but she pushes your hand away. You grab her butt again.
7. You're talking with a woman you just met. You grab her breast, but she pushes your hand away. You grab her breast again.
8. You're with a woman you just met who is wearing a sexy dress and has been flirting with you. You grab her breast, but she pushes your hand away. You grab her breast again.
9. You're with a woman you just met who is drunk or high. You grab her breast, but she pushes your hand away. You grab her breast again.

Tactic 11: Purposely breaking or removing a condom during sex...

1. You're with a woman who is drunk or high. She agrees to have sex with you, but only if you wear a condom. You put a condom on. While you're having sex, you purposely break or remove the condom without her knowing and continue to have sex with her without a condom.

2. Your date/girlfriend/wife agrees to have sex with you, but only if you wear a condom. You put a condom on. While you're having sex, you purposely break or remove the condom without her knowing and continue to have sex with her without a condom.

Tactic 12: Moving from vaginal to anal sex without asking...

1. You're having vaginal sex with a woman who is drunk or high. You push your penis against her anus to have anal sex with her, but she moves your penis away and says she doesn't want to have anal sex. You have anal sex with her anyway.
2. You're having vaginal sex with your date/girlfriend/wife. You push your penis against her anus to have anal sex with her, but she moves your penis away and says she doesn't want to have anal sex. You have anal sex with her anyway.

Retained ASAW items from Sample 1:

1. You're with a woman who is drunk or high. She refuses to give you oral sex, so you tell her that you'll make something bad happen to her reputation or employment if she doesn't give you oral sex.
2. You having sex with a woman who has been flirting with you and is wearing a sexy dress when she is too drunk or high to know or stop what is happening.
3. You having oral sex with your date/girlfriend/wife when she is too drunk or high to know or stop what is happening.
4. You're with a woman who is drunk or high. She refuses to give you oral sex, so you block her from getting away from you (for example, by blocking the doorway) until she gives you oral sex.
5. Your date/girlfriend/wife refuses to let you kiss or sexually touch her, so you block her from getting away from you (for example, by blocking the doorway) until she lets you kiss or sexually touch her.
6. Your date/girlfriend/wife refuses to let you kiss or sexually touch her, so you intimidate her by yelling, swearing, or breaking stuff until she lets you kiss or sexually touch her.
7. Your date/girlfriend/wife refuses to give you oral sex, so you physically force her (for example, by holding her down) to give you oral sex.
8. You're with a woman who is wearing a sexy dress and has been flirting with you. She refuses to give you oral sex, so you tell her that you'll make something bad happen to her reputation or employment if she doesn't give you oral sex.
9. You're with a woman who is wearing a sexy dress and has been flirting with you. She refuses to let you kiss or sexually touch her, so you block her from getting away from you (for example, by blocking the doorway) until she lets you kiss or sexually touch her.
10. You're with a woman who is drunk or high. She refuses to let you kiss or sexually touch her, so you intimidate her by yelling, swearing, or breaking stuff until she lets you kiss or sexually touch her.
11. You kissing or sexually touching your date/girlfriend/wife when she is too drunk or high to know or stop what is happening.

12. Your date/girlfriend/wife refuses to let you kiss or sexually touch her, so you physically force her (for example, by holding her down) to let you kiss or sexually touch her.

### F.3 Sample 3

#### Response scales:

1. very bad, a bit bad, a bit good, very good
2. very negative, a bit negative, a bit positive, very positive
3. very bad, pretty bad, not that bad, not bad at all
4. very negative, pretty negative, not that negative, not negative at all

#### **INSTRUCTIONS**

**Please rate how you think or feel about having sexual contact with a woman in each of the ways described below. Use the scale provided below each item to make your rating.**

#### Items:

- 1 You're with a woman who is drunk or high. She refuses to give you oral sex, so you tell her that you'll make something bad happen to her reputation or employment if she doesn't give you oral sex.
- 2 Your date/girlfriend/wife refuses to let you kiss or sexually touch her, so you block her from getting away from you (for example, by blocking the doorway) until she lets you kiss or sexually touch her.
- 3 You having sex with a woman who was flirting with you and wearing a sexy dress when she is too drunk or high to know or stop what is happening.
- 4 You're with a woman who is wearing a sexy dress and has been flirting with you. She refuses to give you oral sex, so you physically force her (for example, by holding her down) to give you oral sex.
- 5 You're with a woman who is drunk or high. She refuses to give you oral sex, so you block her from getting away from you (for example, by blocking the doorway) until she gives you oral sex.
- 6 Your date/girlfriend/wife refuses to let you kiss or sexually touch her, so you intimidate her by yelling, swearing, or breaking stuff until she lets you kiss or sexually touch her.
- 7 You kissing or sexually touching a woman who was flirting with you and wearing a sexy dress when she is too drunk or high to know or stop what is happening.
- 8 You kissing or sexually touching your date/girlfriend/wife when she is too drunk or high to know or stop what is happening.
- 9 Your date/girlfriend/wife refuses to give you oral sex, so you physically force her (for example, by holding her down) to give you oral sex.
- 10 You're with a woman who is wearing a sexy dress and has been flirting with you. She refuses to give you oral sex, so you tell her that you'll make something bad happen to her reputation or employment if she doesn't give you oral sex.

- 11 You're with a woman who is drunk or high. She refuses to let you kiss or sexually touch her, so you intimidate her by yelling, swearing, or breaking stuff until she lets you kiss or sexually touch her.
- 12 You're with a woman who is wearing a sexy dress and has been flirting with you. She's refusing to let you kiss or sexually touch her, so you block her from getting away from you (for example, by blocking the doorway) until she lets you kiss or sexually touch her.
- 13 You're with a woman who is drunk or high. She's giving you oral sex but refuses to have sexual intercourse, so you intimidate her by yelling, swearing, or breaking stuff until she has sex with you.
- 14 You kissing or sexually touching your date/girlfriend/wife when she is too drunk or high to know or stop what is happening.
- 15 You having oral sex with your date/girlfriend/wife when she is too drunk or high to know or stop what is happening.
  
- 16 You're with a woman who is drunk or high. She's letting you kiss and sexually touch her but refuses to give you oral sex, so you threaten to physically harm her if she doesn't give you oral sex.
- 17 Your date/girlfriend/wife is refusing to let you kiss or sexually touch her, so you physically force her (for example, by holding her down) to let you kiss or sexually touch her.
- 18 You're with a woman who is drunk or high. She's letting you kiss and sexually touch her but refuses to give you oral sex, so you push her head down towards your penis until she gives you oral sex.
- 19 You're with a woman who is drunk or high. She's having sex with you but refuses to let you take sexual pictures of her. You take sexual pictures of her anyway.
- 20 Your girlfriend/wife is refusing to let you kiss or sexually touch her, so you tell her that you'll post sexual pictures of her on the internet if she doesn't let you kiss or sexually touch her.
- 21 You're with a woman you just met who is wearing a sexy dress and has been flirting with you. You grab her butt, but she pushes your hand away. You grab her butt again.
- 22 You're talking with a woman you just met. You put your hand on her leg, but she pushes it away. You put your hand back on her leg.
- 23 Your date/girlfriend/wife agrees to have sex with you, but only if you wear a condom. You put a condom on. While you're having sex, you purposely break or remove the condom without her knowing and continue to have sex with her without a condom.
- 24 You're having vaginal sex with your date/girlfriend/wife. You push your penis against her anus to have anal sex with her, but she moves your penis away and says she doesn't want to have anal sex. You have anal sex with her anyway.
- 25 Your date/girlfriend/wife is refusing to give you oral sex, so you tell her that you'll spread rumours about her if she doesn't give you oral sex.

- 26 You're with a woman who is wearing a sexy dress and has been flirting with you. She's giving you oral sex but refuses to have sex with you, so you tell her that you'll spread rumours about her if she doesn't have sex with you.
- 27 Your date/girlfriend/wife is giving you oral sex but refuses to have sexual intercourse, so you tell her that you'll make something bad happen to her reputation or employment if she doesn't have sex with you.
- 28 Your girlfriend/wife is refusing to have sex with you, so you tell her that you'll post sexual pictures of her on the internet if she doesn't have sex with you.
- 29 Your date/girlfriend/wife is giving you oral sex but refuses to have sexual intercourse, so you hold her down until she has sex with you.

## Appendix G Consent Form (Chapter 2, Study 2, and Chapter 3)

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A consent form tells you what we want you to do as a participant and allows you to make an informed decision about whether you want to participate or not. Consent forms also list any potential negative consequences and they tell you who to contact in case you have any questions or concerns after the research is finished or in case you have any questions or concerns that cannot be answered by the researcher.

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### **Present study: Different Ways of Thinking About Sexual Aggression against Women**

**Research personnel:** The present study is being conducted by Chloe Pedneault (Ph.D. student, Department of Psychology, Carleton University, 613-520-2600 ext. 2261; [chloe.pedneault@carleton.ca](mailto:chloe.pedneault@carleton.ca)); under the supervision of Dr. Kevin Nunes (Professor, Department of Psychology, Carleton University, 613-520-2600, ext. 1545; [kevin.nunes@carleton.ca](mailto:kevin.nunes@carleton.ca)).

**Concerns:** If you have any questions or concerns about this study please contact Chloe Pedneault or Kevin Nunes. If you have any ethical concerns with the study, please contact the Chair of the Carleton University Research Ethics Board-B (by phone at 613-520-2600 ext. 4085 or via email at [ethics@carleton.ca](mailto:ethics@carleton.ca)).

**Purpose:** The main goal of this study is to test the relationship between different measures of attitudes toward sexual aggression against women, and their relationship with sexually aggressive behaviour.

**Task requirements:** Participation takes about 20 minutes. In this anonymous online survey, you will be asked to answer some questions about your opinions and behaviours regarding sexual aggression with women.

**Eligible participants:** Adult males (18 years old or older) living in Canada or the United States who are sexually attracted to women.

**Benefits/compensation:** You will be compensated for your time, except if you answered without paying attention (for example, giving the wrong answer for the attention-check questions, clicking the same button for every question, or finishing the survey much faster than most other participants), if you did not answer any of the few questions that require an answer (you will see if you have skipped any required questions and be asked again to answer them), if you withdrew from the survey before the end of it, or if you are not an adult male living in Canada or the United States who is sexually attracted to women. The amount and conditions of compensation are specified in your agreement with the company managing this survey panel.

**Potential risk/discomfort:** Because questions ask about sexual aggression, it is possible that participating in this study may make some people feel frustrated, angry, embarrassed, or distressed. You are free to refuse to answer any of the questions or stop the survey at any time without penalty. The debriefing form at the end of the study provides contact information for local support services that you can contact if you need or want help.

**Anonymity/confidentiality:** No information that could be used to identify you can be connected with your survey responses, so your answers will be anonymous. In other words, nobody will be able to link your answers to your identity and we will not know who said what. IP addresses or any other information that could identify you will **NOT** be collected. The information you provide will be used only for research and teaching purposes, such as presentations at conferences and articles in scientific journals.

Your data will be stored and protected by Qualtrics on Toronto-based servers but may be disclosed via a court order or data breach. The data for this study will be removed from the Qualtrics server after six months and will be permanently stored on password protected computers and data keys in Dr. Kevin Nunes' lab at Carleton University and will be accessible only to the researchers working on this project and related future research.

**Right to withdraw:** Your participation in this study is entirely voluntary. At any point during the study, you have the right to not complete certain questions, or to withdraw. However, as mentioned above, you would not receive payment if you answered without paying attention, if you did not answer any of the few questions that require an answer, or if you withdrew from the survey before the end of it. An option to withdraw from the survey will be presented at the bottom of each page of the survey. If you wish to withdraw at any point, select the withdraw option and the researchers will not use your data. Please note that it is not possible to withdraw your data after you have completed the survey because your responses are anonymous and the researchers will not be able to identify which responses were yours.

This study has been approved by the Carleton University Research Ethics Board - B (CUREB-B Clearance #114623). Ethics clearance expiry date: December 31, 2021

Click "I Agree" to indicate that you understand the information above and would like to participate in this study or "I Disagree" if you do not want to do the survey.

## **Appendix H Demographic Questions (Chapter 2, Study 2, and Chapter 3)**

1. How old are you? (years)
2. With what gender do you identify? (Male, female, other)
3. In what country are you currently living? (Canada, United States, Other)
4. In our society, people are often described by their race or racial background. For example, some people are considered “White” or “Black” or “East/Southeast Asian,” etc. Which race category best describes you? Select all that apply. (Black, East/Southeast Asian, Indigenous, Latino, Middle Eastern, South Asian, White, Another race category [please specify])
5. What is the highest level of education you’ve completed? (less than high school, high school, college or university)
6. What is your current relationship status? (Single, In a romantic relationship, Living with a romantic partner, Married, Separated/divorced/widowed)
7. Who are you most sexually attracted to? We ask you this question because this survey asks about sexual acts with a woman. (Women, Men, Both women and men equally, other)

**Appendix I Attitude toward Sexual Aggression against Women (ASAW) Scale**  
**(Chapter 2, Study 2, Chapter 3, and Chapter 4)**

**INSTRUCTIONS**

Please rate how you think about having sexual contact with a woman in each of the ways described below.

By “woman” we mean any female 16 years old or older, or a female under 16 if she was less than 5 years younger than you at the time of the sexual contact (for example, you were 17 and she was 15).

Answering these questions does NOT mean that you have done or will do the things described in the questions. Please just say what you think about the idea of doing each of these things, even if you have never done them or never will do them.

Response scale:

(1) *very bad* (2) *pretty bad* (3) *not that bad* (4) *not at all bad*

Items:

**Item**

- 1 You have sex with a woman who was flirting with you and wearing a sexy dress when she is too drunk or high to know or stop what is happening.
- 2 Your date/girlfriend/wife refuses to let you kiss or sexually touch her, so you intimidate her by yelling, swearing, or breaking stuff until she lets you kiss or sexually touch her.
- 3 Your date/girlfriend/wife refuses to give you oral sex, so you physically force her (for example, by holding her down) to give you oral sex.
- 4 You're with a woman who is wearing a sexy dress and has been flirting with you. She refuses to give you oral sex, so you tell her that you'll make something bad happen to her reputation or employment if she doesn't give you oral sex.
- 5 You're with a woman who is wearing a sexy dress and has been flirting with you. She's refusing to let you kiss or sexually touch her, so you block her from getting away from you (for example, by blocking the doorway) until she lets you kiss or sexually touch her.
- 6 You have oral sex with your date/girlfriend/wife when she is too drunk or high to know or stop what is happening.
- 7 You're with a woman who is drunk or high. She's having sex with you but refuses to let you take sexual pictures of her. You take sexual pictures of her anyway.
- 8 You're with a woman you just met who is wearing a sexy dress and has been flirting with you. You grab her butt, but she pushes your hand away. You grab her butt again.
- 9 You're talking with a woman you just met. You put your hand on her leg, but she pushes it away. You put your hand back on her leg.

- 10 Your date/girlfriend/wife agrees to have sex with you, but only if you wear a condom. You put a condom on. While you're having sex, you purposely break or remove the condom without her knowing and continue to have sex with her without a condom.
- 11 You're having vaginal sex with your date/girlfriend/wife. You push your penis against her anus to have anal sex with her, but she moves your penis away and says she doesn't want to have anal sex. You have anal sex with her anyway.
- 12 You're with a woman who is wearing a sexy dress and has been flirting with you. She's giving you oral sex but refuses to have sexual intercourse with you, so you tell her that you'll spread rumours about her if she doesn't have sex with you.
- 13 Your girlfriend/wife is refusing to have sex with you, so you tell her that you'll post sexual pictures of her on the internet if she doesn't have sex with you.

## **Appendix J Quality Control Questions (Chapter 2, Study 2, and Chapter 3)**

These items will be randomly placed within the ASAW, Illinois Rape Myth Acceptance Scale, RAPE Scale, and Proclivity SES-TFR.

1. Data quality is important to us. Please select "not at all bad" to show that you have read this question. We appreciate your continued attention.
2. Data quality is important to us. Please select "somewhat agree" to show that you have read this question. We appreciate your continued attention.
3. Data quality is important to us. Please select "strongly agree" to show that you have read this question. We appreciate your continued attention.
4. Data quality is important to us. Please select "somewhat likely" to show that you have read this question. We appreciate your continued attention.

**Appendix K Debriefing Form: Different Ways of Thinking About Sexual  
Aggression against Women (Chapter 2, Study 2 and Chapter 3)**

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*Thank you very much for participating in our study. We hope the following information addresses any questions or concerns you may have.*

**What Are We Trying to Learn in this Research?**

The purpose of this study is to test the relationship between different measures of attitudes toward sexual aggression against women, and their relationship with sexually aggressive behaviour. More specifically, we want to test if the questions about your opinions about sexual aggression all measure the same thing or if some of the questions measure different things. If they measure different things, we also want to test whether those different things are independently related to sexually aggressive behaviour. **The research findings from this study (e.g., journal article abstract; conference presentation slides) will be posted on our lab website:** <http://www.carleton.ca/acbrlab/>

**Why Is This Important to Scientists or the General Public?**

If the different questions seem to measure different things and if those different things are independently related to sexual aggression, then we should do more research on whether they play a causal role in sexually aggressive behaviour, and if they should be assessed and treated to reduce sexual assault.

**Is There Anything I Can Do if I Found This Experiment to be Emotionally Draining?**

If you experience any distress (e.g., feel sad or mad) as a result of this study, please seek help from one of the following resources as soon as possible:

**If you live in the United States:**

Suicide prevention lifeline: 1-800-273-8255 (TALK) [www.suicidepreventionlifeline.org/](http://www.suicidepreventionlifeline.org/)

**If you live in Canada:**

Crisis Services Canada: 1-833-456-4566 <https://www.crisisservicescanada.ca/en/>

Additional resources: <http://www1.carleton.ca/health/emergencies-and-crisis/emergency-numbers/>

**International resources:**

Mental Health Today: <http://www.mental-health-today.com/resources/toll.htm>

Crisis lines by country: <https://www.suicideforum.com/crisis-lines-sites/>

For further information about mental health please see: <http://www.cmha.ca/mental-health/>

**What is Sexual Assault?**

Sexual assault = sexual acts with someone against their will – either when they don't consent (e.g., forcing sexual contact on someone who is refusing and resisting) or can't

consent (e.g., having sexual contact with someone who is passed out or too drunk to know what they're doing). Sexual acts include not only sexual intercourse, but also kissing, sexual touching, and oral sex. Forcing a woman to engage in sexual activity against her will is a criminal offence that has serious consequences for both the man and the woman. Some of the questionnaires in this study contain statements that are sexist, victim-blaming, and otherwise offensive. We do not agree with or wish to promote such beliefs—we only included these questionnaires because they are commonly used in research and are related to sexually aggressive behavior. **Forcing sexual activity on someone against their will is never okay**, no matter who they are, where they come from, what they look like, how they act, how they dress, or their past sexual behaviour.

### **Where Can I Learn More?**

Below is some information on where you can learn more about rape-supportive cognition and sexually aggressive behaviour.

You can visit our website that provides more information about our research on this topic: <http://www.carleton.ca/acbrlab/>

She asked for it: The impact of rape myths: <http://www.psychologytoday.com/blog/in-love-and-war/201211/she-asked-it-the-impact-rape-myths>

Statistics on sexual assault in

Canada: <http://www.statcan.gc.ca/pub/85f0033m/85f0033m2010024-eng.pdf>

### **What if I Have Questions Later?**

The present study is being conducted by Chloe Pedneault (Ph.D. student, Department of Psychology, Carleton University, 613-520-2600 ext. 2261; [chloe.pedneault@carleton.ca](mailto:chloe.pedneault@carleton.ca)) under the supervision of Dr. Kevin Nunes (Professor, Department of Psychology, Carleton University, 613-520-2600, ext. 1545; [kevin.nunes@carleton.ca](mailto:kevin.nunes@carleton.ca)). If you have any questions or concerns about this study please contact Chloe Pedneault or Kevin Nunes. If you have any ethical concerns with the study, please contact the Chair of the Carleton University Research Ethics Board-B (by phone at 613-520-2600 ext. 4085 or via email at [ethics@carleton.ca](mailto:ethics@carleton.ca)).

This study has been approved by the Carleton University Research Ethics Board - B (CUREB-B Clearance #114623).

Thank you very much for making this research possible.

**Appendix L Illinois Rape Myth Acceptance Scale-Short Form (IRMAS-SF;  
Chapter 3 and 4)**

**Please indicate how much you agree with each of the items below.**

**Response scale:**

*(1) not at all agree, (2) slightly agree, (3) mostly agree, (4) very much agree*

1. If a woman is raped while she is drunk, she is at least somewhat responsible for letting things get out of control.
2. Although most women wouldn't admit it, they generally find being physically forced into sex a real "turn-on."
3. If a woman is willing to "make out" with a guy, then it's no big deal if he goes a little further and has sex.
4. Many women secretly desire to be raped.
5. Most rapists are not caught by the police.
6. If a woman doesn't physically fight back, you can't really say that it was rape.
7. Men from nice middle-class homes almost never rape.
8. Rape accusations are often used as a way of getting back at men.
9. All women should have access to self-defense classes.
10. It is usually only women who dress suggestively that are raped.
11. If the rapist doesn't have a weapon, you really can't call it rape.
12. Rape is unlikely to happen in the woman's own familiar neighborhood.
13. Women tend to exaggerate how much rape affects them.
14. A lot of women lead a man on and then they cry rape.
15. It is preferable that a female police officer conduct the questioning when a woman reports a rape.
16. A woman who "teases" men deserves anything that might happen.
17. When women are raped, it's often because the way they said "no" was ambiguous.
18. Men don't usually intend to force sex on a woman, but sometimes they get too sexually carried away.
19. A woman who dresses in skimpy clothes should not be surprised if a man tries to force her to have sex.
20. Rape happens when a man's sex drive gets out of control.

### Appendix M RAPE Scale (Chapter 3)

Please indicate how much you disagree or agree with each of the items below.

**Response scale:**

(1) *strongly disagree*, (2) *disagree*, (3) *agree*, (4) *strongly agree*

1. Men who commit rape are probably responding to a lot of stress in their lives, and raping helps to reduce that stress.
2. Women who get raped probably deserved it.
3. Women generally want sex no matter how they can get it.
4. Since prostitutes sell their bodies for sexual purposes anyway, it is not as bad if someone forces them into sex.
5. If a woman does not resist strongly to sexual advances, she is probably willing to have sex.
6. Women often falsely accuse men of rape
7. A lot of women who get raped had “bad reputations” in the first place.
8. If women did not sleep around so much, they would be less likely to get raped.
9. If a woman gets drunk at a party, it is really her own fault if someone takes advantage of her sexually.
10. When women wear tight clothes, short skirts, and no bra or underwear, they are asking for sex.
11. A lot of women claim they were raped just because they want attention.
12. Victims of rape are usually a little bit to blame for what happens.
13. If a man has sex with a woman before, then he should be able to have sex with her any time he wants.
14. Just fantasizing about forcing someone to have sex isn’t all that bad since no one is really being hurt.
15. Women who go to bars a lot are mainly looking to have sex.
16. A lot of times when women say “no” they are just playing are just playing hard to get, and really mean “yes”.
17. Part of a wife’s duty is to satisfy her husband sexually whenever he wants it, whether or not she is in the mood.
18. Often a woman reports rape long after the fact because she gets mad at the man she had sex with and is just trying to get back at him.
19. As long as a man does not slap or punch or punch a woman in the process, forcing her to have sex is not as bad.
20. When a woman gets raped more than once, she is probably doing something to cause it.
21. Women who get raped will eventually forget about it and get on with their lives.
22. On a date, when a man spends a lot of money on a woman, the woman ought to at least give the man something in return sexually.
23. I believe that if a woman lets a man kiss her and touch her sexually, she should be willing to go all the way.
24. When women act like they are too good for men, most men probably think about raping the women to put them in their place.

25. I believe that society and the courts are too tough on rapists.
26. Most women are sluts and get what they deserve.
27. Before the police investigate a woman's claim of rape, it is a good idea to find out what she was wearing, if she had been drinking, and what kind of person she is.
28. Generally, rape is not planned- a lot of times it just happens.
29. If a person tells himself that he will never rape again, then he probably won't.
30. A lot of men who rape do so because they are deprived of sex.
31. The reason a lot of women say "no" to sex is because they don't want to seem loose
32. If a woman goes to the home of a man on the first date, she probably wants to have sex with him.
33. Many women have a secret desire to be forced into having sex.
34. Most of the men who rape have stronger sexual urges than other men.
35. I believe that any woman can prevent herself from being raped if she really wants to.
36. Most of the time, the only reason a man commits rape is because he was sexually assaulted as a child.

## Appendix N Attitudes Toward Rape Scale (Chapter 3)

Please indicate how much you agree or disagree with each of the items below.

### Response scale:

(1) *strongly disagree*, (2) *disagree*, (3) *agree*, (4) *strongly agree*

1. A woman can be raped against her will.
2. The reason most rapists commit rape is for the thrill of physical violence.
3. Rapists are "normal" men.
4. In forcible rape, the victim never causes the crime.
5. All rapists are mentally sick.
6. A charge of rape two days after the act has occurred is probably not rape.
7. A woman should be responsible for preventing her own rape.
8. A man who has committed rape should be given at least 30 years in prison.
9. Women are trained by society to be rape victims
10. A raped woman is a less desirable woman.
11. If a woman is going to be raped, she might as well relax and enjoy it.
12. Rape provides the opportunity for many rapists to show their manhood.
13. Most women secretly desire to be raped.
14. It would do some women some good to get raped.
15. Women provoke rape by their appearance or behavior.
16. Nice" women do not get raped.
17. Most charges of rape are unfounded.
18. In order to protect the male, it should be difficult to prove that a rape has occurred.
19. Rape is the expression of an uncontrollable desire for sex.
20. Rape is the worst crime that can be committed.
21. Rape is a sex crime.
22. All rape is a male exercise in power over women.
23. During a rape, a woman should do everything she can do to resist.
24. Rapists are sexually frustrated individuals.
25. In most cases when a woman was raped, she was asking for it.
26. The reason most rapists commit rape is for sex.
27. Rape of a woman by a man she knows can be defined as a "woman who changed her mind afterward."
28. A convicted rapist should be castrated.
29. A woman should feel guilty following a rape.
30. The degree of a woman's resistance should be the major factor in determining if a rape has occurred.
31. A raped woman is a responsible victim, not an innocent one.
32. Rape serves as a way to put or keep women in their "place."

**Appendix O Sexual Experience Survey-Tactic First Revised (SES-TFR; Chapter 3 and 4) and Proclivity SES-TFR (Chapter 3)**

Instructions:

We are now going to ask you some questions about:

(a) your past experiences with different types of sexual behaviour (Never, Once, Twice, Three times, Four times, Five times, Six times, Seven times, Eight times, Nine times or more), and

(b) how likely you would be to do these different sexual behaviours in the future (Very unlikely, Unlikely, Somewhat unlikely, Somewhat likely, Likely, Very likely)

Please answer the following questions by choosing an answer from the drop down menus for each item.

In the following questions, by "woman" we mean any female 16 years old or older, or a female under 16 if she was less than 5 years younger than you at the time of the sexual contact (for example, you were 17 and she was 15).

**O.1 SES-TFR**

**Scale:** *never (0) to nine or more times (9)*

How many times SINCE YOU WERE 16 years old have you **overwhelmed a woman with arguments and pressure**, although she indicated she didn't want to, in order to . . .

1. **fondle, kiss, or sexually touch** her without her permission?
2. **attempt** to make her have sexual intercourse with you, but for some reason intercourse didn't happen?
3. make her have **oral sex** with you?
4. make her have **sexual intercourse** with you?
5. make her have **anal sex**?
6. **insert an object** into her?

How many times SINCE YOU WERE 16 years old have you **told a woman lies or made promises** that you knew were untrue, after she indicated she didn't want to, in order to . . .

1. **fondle, kiss, or sexually touch** her without her permission?
2. **attempt** to make her have sexual intercourse with you, but for some reason intercourse didn't happen?
3. make her have **oral sex** with you?
4. make her have **sexual intercourse** with you?
5. make her have **anal sex**?
6. **insert an object** into her?

How many times SINCE YOU WERE 16 years old have you **shown you were not happy by making a woman feel guilty, swearing, sulking, or getting angry**, after she indicated she didn't want to, in order to . . .

1. **fondle, kiss, or sexually touch** her without her permission?
2. **attempt** to make her have sexual intercourse with you, but for some reason intercourse didn't happen?
3. make her have **oral sex** with you?
4. make her have **sexual intercourse** with you?
5. make her have **anal sex**?
6. **insert an object** into her?

How many times SINCE YOU WERE 16 years old have you **given a woman drugs or alcohol without her permission** in order to . . .

1. **fondle, kiss, or sexually touch** her without her permission?
2. **attempt** to make her have sexual intercourse with you, but for some reason intercourse didn't happen?
3. make her have **oral sex** with you?
4. make her have **sexual intercourse** with you?
5. make her have **anal sex**?
6. **insert an object** into her?

How many times SINCE YOU WERE 16 years old, **when a woman was passed out or too drunk to give permission** or stop what was happening, have you...

1. **fondle, kiss, or sexually touch** her without her permission?
2. **attempt** to make her have sexual intercourse with you, but for some reason intercourse didn't happen?
3. make her have **oral sex** with you?
4. make her have **sexual intercourse** with you?
5. make her have **anal sex**?
6. **insert an object** into her?

How many times SINCE YOU WERE 16 years old have you **used some degree of physical force** (twisting her arm, holding her down) or in any other way held down or physically hurt a woman in order to . . .

1. **fondle, kiss, or sexually touch** her without her permission?
2. **attempt** to make her have sexual intercourse with you, but for some reason intercourse didn't happen?
3. make her have **oral sex** with you?
4. make her have **sexual intercourse** with you?
5. make her have **anal sex**?
6. **insert an object** into her?

## O.2 Proclivity SES-TFR

### Response scale:

1 = *Not at all likely* to 7 = *Very likely*

How **LIKEY** would you be to **overwhelm a woman with arguments and pressure**, although she indicated she didn't want to, in order to . . .

1. **fondle, kiss, or sexually touch her** without her permission?
2. **attempt** to make her have sexual intercourse with you, but for some reason intercourse didn't happen?
3. make her have **oral sex** with you?
4. make her have **sexual intercourse** with you?
5. make her have **anal sex** with you?
6. **insert an object** into her?

How **LIKELY** would you be to **tell a woman lies or make promises that you knew were untrue** (after she indicated she didn't want to), in order to . . .

1. **fondle, kiss, or sexually touch her** without her permission?
2. **attempt** to make her have sexual intercourse with you, but for some reason intercourse didn't happen?
3. make her have **oral sex** with you?
4. make her have **sexual intercourse** with you?
5. make her have **anal sex** with you?
6. **insert an object** into her?

How **LIKELY** would you be to **show you were not happy by making a woman feel guilty, swearing, sulking, or getting angry** (after she indicated she didn't want to), in order to . . .

1. **fondle, kiss, or sexually touch her** without her permission?
2. **attempt** to make her have sexual intercourse with you, but for some reason intercourse didn't happen?
3. make her have **oral sex** with you?
4. make her have **sexual intercourse** with you?
5. make her have **anal sex** with you?
6. **insert an object** into her?

How **LIKELY** would you be to **give a woman drugs or alcohol without her permission** in order to . . .

1. **fondle, kiss, or sexually touch her** without her permission?
2. **attempt** to make her have sexual intercourse with you, but for some reason intercourse didn't happen?
3. make her have **oral sex** with you?
4. make her have **sexual intercourse** with you?
5. make her have **anal sex** with you?
6. **insert an object** into her?

When a woman is **passed out or too drunk to give permission or stop what was happening**, how **LIKELY** would you be to...

1. **fondled, kissed, or sexually touched her** without her permission?

2. **attempted** to make her have sexual intercourse with you, but for some reason intercourse didn't happen?
3. made her have **oral sex** with you?
4. made her have **sexual intercourse** with you?
5. make her have **anal sex** with you?
6. **insert an object** into her?

How **LIKELY** would you be to **use some degree of physical force** (twisting her arm, holding her down) or in any other way hold down or physically hurt a woman in order to  
...

1. **fondle, kiss, or sexually touch her** without her permission?
2. **attempt** to make her have sexual intercourse with you, but for some reason intercourse didn't happen?
3. make her have **oral sex** with you?
4. make her have **sexual intercourse** with you?
5. make her have **anal sex** with you?
6. **insert an object** into her?

### **Appendix P Likelihood to Rape (LR) Question (Chapter 3)**

How likely is it that you would commit rape if you would not get caught and/or punished?

1 = Not at all likely

2

3

4

5 = Very likely

**Appendix Q Heterotrait-Monotrait (HTMT) Ratio of Correlations Approach to  
Discriminant Validity (Chapter 3)**

HTMT was conducted based on the method described in Henseler et al. (2015). I computed the inter-item Pearson correlation matrices between the ASAW and the RAPE Scale, Illinois Rape Myth Acceptance Scale-Short Form (IRMAS-SF), and Attitudes Toward Rape scale (ATR), respectively. Next, I computed the HTMT statistic for each correlation matrix. HTMT values below .85 indicate discriminant validity. The HTMT statistics for each pair of measures are presented below.

**ASAW vs. IRMAS-SF**

Average heterotrait-heteromethod correlation between ASAW and IRMAS-SF items = 0.29

Average monotrait-heteromethod correlation for ASAW items = 0.51

Average monotrait-heteromethod correlation for IRMAS-SF items = 0.46

$$\text{HTMT} = 0.29 / (0.51 * 0.46)^{.05} = 0.61$$

**ASAW vs. RAPE Scale**

Average heterotrait-heteromethod correlation between ASAW and RAPE Scale items = 0.31

Average monotrait-heteromethod correlation for ASAW items = 0.51

Average monotrait-heteromethod correlation for RAPE Scale items = 0.45

$$\text{HTMT} = 0.31 / (0.51 * 0.45)^{.05} = 0.65$$

**ASAW vs. ATR**

Average heterotrait-heteromethod correlation between ASAW and ATR items = 0.22

Average monotrait-heteromethod correlation for ASAW items = 0.51

Average monotrait-heteromethod correlation for ATR items = 0.22

$$\text{HTMT} = 0.22 / (0.51 * 0.22)^{.05} = 0.65$$

## Appendix R Descriptive Statistics by Self-reported Sexual Aggression (Chapter 3)

Table R1.

*Descriptive Statistics by Type of Past Sexual Aggression (SES-TFR; N = 570)*

<b>Measure</b>	No past Sexual Aggression ( <i>n</i> = 340)		Verbal Coercion Only ( <i>n</i> = 116)		Physical Force or Incapacitation ( <i>n</i> = 114)	
	<i>M</i> ( <i>SD</i> )	Median	<i>M</i> ( <i>SD</i> )	Median	<i>M</i> ( <i>SD</i> )	Median
ASAW	1.21 (0.35)	1.08	1.37 (0.46)	1.23	1.73 (0.58)	1.69
IRMAS	21.42 (5.01)	20.00	23.42 (5.40)	22.00	29.25 (7.40)	28.00
RAPE	55.27 (15.36)	52.00	62.34 (15.82)	60.50	78.97 (20.61)	79.50
ATR Pro-Rape	27.83 (7.31)	27.00	29.91 (7.71)	28.00	38.32 (11.08)	38.00
ATR Anti-Rape	17.96 (3.40)	18.00	18.00 (2.94)	18.00	17.24 (3.24)	17.00

*Notes.* ASAW = Attitudes toward Sexual Aggression against Women. IRMAS = Illinois Rape Myth Acceptance Scale. ATR =

Attitude toward Rape. SES-TFR = Sexual-Experience Survey-Tactics First Revised. Groupings are based on responses to the SES-

TFR. Verbal coercion includes the following SES-TFR tactics: (a) making a woman believe (without actually saying it) that you

would make something bad happen to her, (b) directly saying to a woman that you would make something bad happen to her, (c)

making it so a woman can't get away (e.g., by blocking the doorway), and (d) scaring a woman by yelling, swearing, or showing you

are angry. Physical sexual aggression includes the following SES-TFR tactics: (a) taking advantage of a woman when she is passed

out from drugs or alcohol, (b) giving a woman drugs or pressuring her to drink alcohol, (c) threatening to physically harm a woman or

someone she cares about, and (d) using physical force on a woman.

Table R2.

*Descriptive Statistics by Likelihood of Sexual Aggression and Likelihood to Rape (N = 570)*

Measure	Likelihood of Sexual Aggression (Proclivity SES-TFR)				Likelihood to Rape (LR Question)			
	None (n = 381)		Any (n = 189)		None (n = 527)		Any (n = 43)	
	M (SD)	Median	M (SD)	Median	M (SD)	Median	M (SD)	Median
ASAW	1.21 (0.36)	1.08	1.62 (0.55)	1.46	1.30 (0.44)	1.15	1.87 (0.56)	1.77
IRMAS	21.47 (5.04)	20.00	27.28 (7.07)	26.00	22.77 (5.82)	21.00	31.05 (8.10)	29.00
RAPE	55.66 (15.69)	52.00	73.11 (19.67)	71.00	59.52 (17.33)	57.00	85.02 (22.37)	84.00
ATR Pro-Rape	27.79 (7.21)	20.00	35.50 (10.57)	35.00	29.42 (8.21)	28.00	41.72 (12.75)	41.00
ATR Anti-Rape	18.01 (3.28)	18.00	17.46 (3.28)	17.00	17.88 (3.28)	18.00	17.21 (3.32)	17.00

*Notes.* ASAW = Attitudes toward Sexual Aggression against Women. IRMAS = Illinois Rape Myth Acceptance Scale. ATR =

Attitude toward Rape.

### Appendix S Spearman Correlations (Chapter 3)

Table S1.

*Spearman Correlations with Bias Corrected and Accelerated 95% Confidence Intervals (N = 570)*

<b>Measure</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
1. ASAW							
2. IRMAS	<b>.56 [.49, .61]</b>						
3. ATR Pro-Rape	<b>.55 [.49, .61]</b>	<b>.77 [.73, .81]</b>					
4. ATR Anti-Rape	-.07 [-.15, .02]	-.03 [-.11, .06]	-.08 [-.17, .01]				
5. RAPE	<b>.60 [.54, .65]</b>	<b>.82 [.79, .85]</b>	<b>.85 [.82, .88]</b>	-.06 [-.14, .02]			
6. SES-TFR	<b>.46 [.38, .54]</b>	<b>.45 [.37, .52]</b>	<b>.38 [.30, .45]</b>	-.06 [-.14, .02]	<b>.45 [.38, .52]</b>		
7. Proclivity SES-TFR	<b>.50 [.42, .56]</b>	<b>.48 [.41, .54]</b>	<b>.42 [.34, .49]</b>	<b>-.07 [-.15, -.001]</b>	<b>.48 [.40, .54]</b>	<b>.76 [.70, .81]</b>	
8. LR	<b>.31 [.23, .37]</b>	<b>.28 [.20, .35]</b>	<b>.27 [.19, .34]</b>	-.05 [-.14, .02]	<b>.29 [.21, .36]</b>	<b>.27 [.18, .36]</b>	<b>.35 [.25, .44]</b>

*Notes.* ASAW = Attitudes toward Sexual Aggression against Women. IRMAS = Illinois Rape Myth Acceptance Scale. ATR =

Attitude toward Rape. SES-TFR = Sexual Experience Survey-Tactics First: Revised. LR = Likelihood to Rape. Bolded values indicate confidence intervals that do not include zero.

## Appendix T Multiple Regression Models without Influential Residual Outliers

### (Chapter 3)

Table T1.

*Regression Models Predicting Past Sexually Aggressive Behaviour without Influential Residual Outliers*

Model	<i>N</i>	<i>R</i> <sup>2</sup>	<i>B</i>	<i>B SE</i>	95% Bootstrap CI <sub>BCa</sub>	<i>β</i>
Model 1: Rape Myth Acceptance	544	.31				
IRMAS-SF			<b>2.13</b>	<b>0.51</b>	<b>[1.21, 3.07]</b>	.24
ASAW			<b>50.88</b>	<b>9.00</b>	<b>[33.67, 67.61]</b>	.39
Model 2: Cognitive Distortions	544	.27				
RAPE Scale			<b>0.66</b>	<b>0.18</b>	<b>[0.30, 1.03]</b>	.22
ASAW			<b>47.77</b>	<b>10.85</b>	<b>[28.46, 70.60]</b>	.36
Model 3: Beliefs about Rape	544	.27				
ATR Pro-Rape			<b>1.44</b>	<b>0.36</b>	<b>[0.80, 2.09]</b>	.23
ASAW			<b>44.27</b>	<b>10.29</b>	<b>[26.43, 66.09]</b>	.35
Model 4: All Measures	544	.31				
Composite			<b>34.29</b>	<b>7.92</b>	<b>[20.34, 48.15]</b>	.26
ASAW			<b>46.60</b>	<b>10.07</b>	<b>[28.08, 68.39]</b>	.36

*Notes:* IRMAS-SF = Illinois Rape Myth Acceptance Scale-Short Form. ATR = Attitudes

toward Rape. ASAW = Attitude toward Sexual Aggression against Women. CI<sub>BCa</sub> = bias

corrected and accelerated confidence interval. Bolded values indicate 95% confidence

intervals that do not include zero.

Table T2.

*Regression Models Predicting Likelihood to Rape without Influential Residual Outliers*

Model	<i>N</i>	<i>R</i> <sup>2</sup>	<i>B</i>	<i>B SE</i>	95% Bootstrap CI <sub>BCa</sub>	<i>β</i>
Model 1: Rape Myth Acceptance	569	.10				
IRMAS-SF			<b>0.02</b>	<b>0.01</b>	<b>[0.01, 0.03]</b>	.21
ASAW			<b>0.17</b>	<b>0.07</b>	<b>[0.07, 0.33]</b>	.15
Model 2: Cognitive Distortions	569	.09				
RAPE Scale			<b>0.01</b>	<b>0.001</b>	<b>[0.003, 0.01]</b>	.18
ASAW			<b>0.18</b>	<b>0.06</b>	<b>[0.07, 0.32]</b>	.16
Model 3: Beliefs about Rape	569	.10				
ATR Pro-Rape			<b>0.01</b>	<b>0.004</b>	<b>[0.005, 0.02]</b>	.20
ASAW			<b>0.18</b>	<b>0.06</b>	<b>[0.07, 0.32]</b>	.16

*Notes:* IRMAS-SF = Illinois Rape Myth Acceptance Scale-Short Form. ATR = Attitudes toward Rape. ASAW = Attitude toward Sexual Aggression against Women. CI<sub>BCa</sub> = bias corrected and accelerated confidence interval. Bolded values indicate 95% confidence intervals that do not include zero.

## Appendix U Demographic Questions (Chapter 4)

1. How old are you? (years)
2. With what gender do you identify? (Male, female, other)
3. In what country are you currently living? (Canada, United States, Other)
4. In our society, people are often described by their race or racial background. For example, some people are considered “White” or “Black” or “East/Southeast Asian,” etc. Which race category best describes you? Select all that apply. (Black, East/Southeast Asian, Indigenous, Latino, Middle Eastern, South Asian, White, Another race category [please specify])
5. What is the highest level of education you’ve completed? (less than high school, high school, college or university)
6. What is your current relationship status? (Single, In a romantic relationship, Living with a romantic partner, Married, Separated/divorced/widowed)
7. Who are you most sexually attracted to? We ask you this question because this survey asks about sexual acts with a woman. (Women, Men, Both women and men equally, other)

## Appendix V Attitude-Change Manipulation (Chapter 4)

*[images available upon request]*

### **Persuasive Message**

Please carefully read the message below. You will be asked to answer some questions about the content of this message later on.

### **What is Sexual Assault?**

Sexual assault refers to sexual acts, such as kissing, sexual touching, and oral, vaginal, or anal penetration, with someone **against their will**.

“Against their will” means when they:

- a) **don’t consent** (for example, sexually touching someone who is refusing and resisting) or
- b) **can’t consent** (for example, having sex with someone who is passed out or too drunk to know what’s happening).

\*\*\*\*\*

Picture this:

You want to have sex with a woman. You make a move to kiss her, but she doesn’t want to and refuses by telling you to stop. You keep trying to kiss her and she keeps telling you to stop and tries to get away.

Ignoring her refusals, you hold her so that she can’t get away. Now that she can’t move, you kiss her, touch her breasts and crotch, and then have sex with her.

Now, consider all of the **bad things** that could happen ...

\*\*\*\*\*

- **You get arrested, get a criminal record for a sex offence, and go to prison.**
  - You **lose everything** (family, friends, job, school) while you're in prison
  - As a sex offender, you are more likely to be **abused, assaulted**, or even **murdered** in prison than other inmates.
  - You have to go to **sex offender treatment**

\*\*\*\*\*

- **With a criminal record for a sex offence, your life changes forever**
  - You have a **hard time getting or keeping a good job.**
  - You can't **afford or find a good place to live.**
  - As a sex offender, there are also places you **aren't allowed to live** (for example, around schools or parks)

\*\*\*\*\*

- **People find out that you sexually assaulted someone**
  - Even if you don't go to prison, people **find out what you did.**
  - People talk about you behind your back and **publicly shame, ridicule, and exclude** you.
  - You may also **lose your family and friends who are embarrassed or disgusted** by you

\*\*\*\*\*

- **The woman's family and friends try to get revenge**
  - They could try to **physically hurt** you
  - They could also go after your **reputation, money, and family.**

\*\*\*\*\*

- After forcing the woman to have sex, you or the woman could get a sexually **transmitted infection or HIV.**
- You could also get the woman **pregnant**
  - If the woman has the child, you could have to pay **child support** for the rest of your life

\*\*\*\*\*

- **The woman is hurt and scared.**
- **She suffers:**
  - Physical **injuries**, such as genital tearing, bruising, and swelling that could last for weeks
  - **Fear, anxiety, depression, and post-traumatic stress disorder (PTSD)** that could last for years
  - Relationship difficulties with romantic partners, friends, and family
  - Thoughts about **suicide**

\*\*\*\*\*

Overall, forcing sexual activity on a woman without her consent not only **hurts the victim**, but can also **hurt the guy who commits the assault**, his friends, and his family. Just imagine if someone sexually assaulted a woman you care about, like your **mother, sister, or good friend**.

## Appendix W Control Tasks (Chapter 4)

*[images available upon request]*

### Control Message

Please carefully read the message below. You will be asked to answer some questions about the content of this message later on.

### What is the Grand Canyon?

The Grand Canyon is a steep-sided gorge carved by the Colorado River. Located in the state of Arizona, the Canyon is 277 miles long, up to 18 miles wide, and one mile deep.

The Grand Canyon is known for:

- a) its many **layers of exposed rocks** showing the region's geological history and
- b) overwhelming **size** and colorful **landscape**.

\*\*\*\*\*

Picture this:

You are visiting the Grand Canyon and taking in the sights. The Grand Canyon is said to be one of the seven wonders of the natural world. **Millions of people** visit the Canyon every year to learn about its history, enjoy its beauty, and take advantage of all the things to do there.

Many people don't know this, but there is actually a town in the Canyon. The Supai Village is located at the base of the Canyon and cannot be accessed by road.

The Grand Canyon is one of the most **popular tourist sites** in the United States.

Now consider some of the things you could learn, see, and do:

\*\*\*\*\*

- **The Grand Canyon has a long history:**
  - The **Colorado River** began carving the Grand Canyon 5 to 6 million years ago
  - In 1869, John Wesley Powell led the **first exploration** down the Grand Canyon
  - President Roosevelt supported the **preservation** of the Canyon when he was in office
  - In 1919, the Grand Canyon became a **national park**

\*\*\*\*\*

- **The Grand Canyon has a lot of different rocks:**
  - Nearly **40 different types of rocks** can be seen in the Canyon
  - The **oldest rocks** are at the bottom of the Canyon and the **youngest rocks** are at the top
  - The oldest type of rock in the Canyon is **granite**
  - The youngest type of rock in the Canyon is **limestone**

\*\*\*\*\*

**Different types of fossils can be found in the Grand Canyon:**

- The oldest fossils include **fish and other marine** life from when there was water in the Canyon.
- More recent fossils are of **land mammals** and are about 10,000 years old
- No dinosaur fossils or bones have been found in the Canyon.

\*\*\*\*\*

- **The Grand Canyon is full of hidden caves:**
  - There are over **1,000 caves** in the Canyon
  - But, only one cave is open to the public **for safety reasons**

\*\*\*\*\*

- **Grand Canyon climate:**
  - Different parts of the Canyon have **different climates**
  - Nights are cool on the **Grand Canyon's South Rim**
  - The **North Rim** can receive snow throughout most of the year
  - The **Inner Canyon** (below the rim) is much warmer and can reach very high temperatures

\*\*\*\*\*

**When planning a visit to the Grand Canyon:**

- Make sure to **plan** which side of the Canyon you'd like to see
- Check the schedule to see which parts of the Canyon are open
- Plan what **activities** you want to do, like sightseeing, hiking, rafting, and camping.
- Buy tickets **ahead of time**

\*\*\*\*\*

Overall, the Grand Canyon is an important **geological site** and one of the world's most popular natural tourist attractions with over **five million visitors** each year.

Imagine you and your **family** or **friends** are at the Canyon.

## Appendix X Manipulation Check Questionnaire (Chapter 4)

Please answer the following questions about the **informational message** you were asked to read earlier.

Which of the following was in the message you read?

- a) Sexual assault includes sexually touching someone without their consent
- b) Different types of rocks are found in the Grand Canyon

Which of the following was in the message you read?

- a) Anxiety, depression, and sexually transmitted infections are potential consequences for victims of sexual assault
- b) The Grand Canyon is a popular tourist attraction

Was the following statement in the message you read?

- a) Going to prison is a potential consequence for men who commit sexual assault
- b) Different parts of the Grand Canyon have different climates

## Appendix Y Consent Form (Chapter 4)

A consent form tells you what we want you to do as a participant and allows you to make an informed decision about whether you want to participate or not. Consent forms also list any potential negative consequences and they tell you who to contact in case you have any questions or concerns after the research is finished or in case you have any questions or concerns that cannot be answered by the researcher.

**Present study:** Validating a new measure of attitudes toward sexual aggression against women

**Research personnel:** The present study is being conducted by Chloe Pedneault (Ph.D. student, Department of Psychology, Carleton University, [chloe.pedneault@carleton.ca](mailto:chloe.pedneault@carleton.ca)); under the supervision of Dr. Kevin Nunes (Professor, Department of Psychology, Carleton University, [kevin.nunes@carleton.ca](mailto:kevin.nunes@carleton.ca)).

**Concerns:** If you have any questions or concerns about this study please contact Chloe Pedneault or Kevin Nunes. If you have any ethical concerns with the study, please contact the Chair of the Carleton University Research Ethics Board-B (via email at [ethics@carleton.ca](mailto:ethics@carleton.ca)).

**Purpose:** The main goal of this study is to test how well a new questionnaire can assess attitudes toward specific sexually aggressive behaviours against women (e.g., forcing a woman to have sexual intercourse is negative vs. positive). If this questionnaire is determined to be a good measure of attitudes toward sexual aggression, then it could be used in future research on the topic.

**Eligibility requirements:** Adult males (18 years old or older) living in Canada or the United States who are sexually attracted to women.

**Task requirements:** You will be asked to complete a 20-minute confidential online survey. The survey asks about attitudes and beliefs about rape and other forms of aggressive sexual behaviour with women. For example, rating “how bad” a list of aggressive behaviours are, such as having sex with a woman who is too drunk to provide consent, and indicating agreement or disagreement with statements such as, “most rapists are not caught by police”. You will also be asked about past aggressive sexual behaviour (e.g., use of verbal aggression, physical aggression, or administering drugs and/or alcohol), and may be asked to view pictures that depict violent situations that may be disturbing.

**Benefits/compensation:** You will be compensated for your time, except under the following conditions: speeding (i.e., answering too quickly), straightlining (i.e., selecting the same answer for every item), and ineligibility. The amount of compensation is specified in your agreement with the company managing this survey panel.

**Potential risk/discomfort:** This study includes explicit questions about sexually aggressive behaviour (e.g., How many times SINCE YOU WERE 16 years old have you used some degree of physical force (twisting her arm, holding her down) or in any other way held down or physically hurt a woman in order to make her have vaginal or anal intercourse with you?). You may also be shown graphic images depicting violence and consequences of violence (e.g., a woman who has been beaten), which may be disturbing to anyone who can see the survey. It is possible that participation in this study may make some people feel frustrated, angry, embarrassed, or otherwise distressed. You are free to refuse to answer any of the questions or stop the survey at any time. The debriefing form at the end of the study provides contact information for local support services that you may contact if you need or want help.

**Confidentiality.** No information that could be used to identify you can be connected with your survey responses, so your answers will be confidential. In other words, nobody will be able to link your answers to your identity and we will not know who said what. IP addresses or any other information that could identify you will **NOT** be collected. The information you provide will be used only for research and teaching purposes, such as presentations at conferences and articles in scientific journals.

Your data will be stored and protected by Qualtrics on their secure server located in Toronto, but may be disclosed via a court order or data breach. However, your answers could never be linked back to you as your answers will be confidential. The data for this study will be removed from the Qualtrics server after six months and will be permanently stored on password protected computers and will be accessible only to the researchers working on this project and related future research.

**Right to withdraw.** Your participation in this study is entirely voluntary. At any point during the study, you have the right to not complete certain questions, or to withdraw. However, you would not receive payment for incomplete or random responses. An option to withdraw from the survey will be presented at the bottom of each page of the survey. If you wish to withdraw at any point, select the withdraw option and the researchers will not use your data. However, note that it is not possible to withdraw your data after you have completed the survey because your responses are confidential, and the researchers will not be able to identify which responses were yours.

This research has been cleared by Carleton University Research Ethics Board-B (CUREB-B Clearance # 108439). Ethics clearance expiry date: February 28, 2022

Click “I Agree” to indicate that you understand the information above and would like to participate in this study or “I Disagree” if you do not want to do the survey.

## Appendix Z Debriefing Form (Chapter 4)

*Thank you very much for participating in my study. Without your participation, this research would not have been possible. We hope the following information addresses any questions or concerns you may have.*

### **What Are We Trying to Learn in this Research?**

The purpose of this study is to test how well a new measure works to assess attitudes toward sexual aggression against women. To test this, we randomly assigned participants to either read a message about the consequences of sexual assault or a message about the Grand Canyon. We are trying to see if reading these messages influences the way people respond to the new measure. If the new measure is a good measure of attitudes toward sexual aggression, we would expect that responses on the measure would reflect more negative attitudes toward sexual aggression after reading about the consequences of sexual assault than after reading about the Grand Canyon. If the new measure is found to be a good measure of attitudes toward sexual aggression, then it could be used to advance research on sexual aggression and ways to prevent it.

Note that, in this study, we examined some points of view that are related to sexual aggression (for example, statements that blame women for sexual assault); however, we do not condone those points of view.

### **Mental Health Resources**

If you experience any distress (e.g., feel sad or mad) as a result of this study, please seek help from one of the following resources as soon as possible:

#### **If you live in the United States:**

Suicide prevention lifeline: 1-800-273-8255 (TALK) [www.suicidepreventionlifeline.org/](http://www.suicidepreventionlifeline.org/)

#### **If you live in Canada:**

Crisis Services Canada: 1-833-456-4566 <https://www.crisisservicescanada.ca/en/>

Additional resources: <http://www1.carleton.ca/health/emergencies-and-crisis/emergency-numbers/>

#### **International resources:**

Mental Health Today: <http://www.mental-health-today.com/resources/toll.htm>

Crisis lines by country: <https://www.suicideforum.com/crisis-lines-sites/>

For further information about mental health please see: <http://www.cmha.ca/mental-health/>

### **What is Sexual Assault?**

Sexual assault = sexual acts with someone against their will – either when they don't

consent (e.g., forcing sexual contact on someone who is refusing and resisting) or can't consent (e.g., having sexual contact with someone who is passed out or too drunk to know what they're doing). Sexual acts include not only sexual intercourse, but also kissing, sexual touching, and oral sex. Forcing a woman to engage in sexual activity against her will is a criminal offence that has serious consequences for both the man and the woman. Some of the questionnaires in this study contain statements that are sexist, victim-blaming, and otherwise offensive. We do not agree with or wish to promote such beliefs—we only included these questionnaires because they are commonly used in research and are related to sexually aggressive behavior. **Forcing sexual activity on someone against their will is never okay**, no matter who they are, where they come from, what they look like, how they act, how they dress, or their past sexual behaviour.

### **Where Can I Learn More?**

Below is some information on where you can learn more about rape-supportive cognition and sexually aggressive behaviour.

You can visit our website that provides more information about our research on this topic: <http://www.carleton.ca/acbrlab/>

She asked for it: The impact of rape myths: <http://www.psychologytoday.com/blog/in-love-and-war/201211/she-asked-it-the-impact-rape-myths>

Statistics on sexual assault in

Canada: <http://www.statcan.gc.ca/pub/85f0033m/85f0033m2010024-eng.pdf>

### **What if I Have Questions Later?**

The present study is being conducted by Chloe Pedneault (Ph.D. student, Department of Psychology, Carleton University, [chloe.pedneault@carleton.ca](mailto:chloe.pedneault@carleton.ca)) under the supervision of Dr. Kevin Nunes (Professor, Department of Psychology, Carleton University, [kevin.nunes@carleton.ca](mailto:kevin.nunes@carleton.ca)). If you have any questions or concerns about this study please contact Chloe Pedneault or Kevin Nunes. If you have any ethical concerns with the study, please contact the Chair of the Carleton University Research Ethics Board-B (via email at [ethics@carleton.ca](mailto:ethics@carleton.ca)).

This research has been cleared by Carleton University Research Ethics Board-B (CUREB-B Clearance # 108439)

Thank you very much for making this research possible.