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# Reassessing the confluence model of men's risk of sexual aggression

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**REASSESSING THE CONFLUENCE MODEL OF MEN'S RISK OF SEXUAL  
AGGRESSION**

by

Ebru Yucel

A Thesis

Submitted to the  
Department of Psychology  
College of Science and Mathematics  
In partial fulfillment of the requirement  
For the degree of  
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Thesis Chair: DJ Angelone, Ph.D., and Meredith Joppa, Ph.D.

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## **Dedications**

This thesis is dedicated to my family, for their infinite love, support, and inspiration. To my parents, I hope that this milestone has shown that uprooting your life to move to an unfamiliar country for the sake of giving your children a good education was a valuable and worthwhile decision. I can only hope that I continue to make you proud. To my amazing husband, whose patience and love knows no bounds. Thank you for your endless tolerance and encouragement. To my baby brother, who challenges me in the best way possible, thank you for being you. To my older brother, thank you for pushing my limits and giving me the confidence to always challenge myself. Though you aren't here to see it, I know you would have been overwhelmed with pride.

And most importantly, to Allah SWT, for the countless blessings, including the ability to learn, understand, and write for this project. "Exalted are You; we have no knowledge except what You have taught us. Indeed, it is You who is the Knowing, the Wise" (The Qur'an, 2:32).

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## **Abstract**

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REASSESSING THE CONFLUENCE MODEL OF MEN'S RISK OF SEXUAL  
AGGRESSION  
2018-2019

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Master of Arts in Clinical Psychology

The confluence model of sexual aggression has been a gold standard for identifying men's risk of sexual aggression. However, many replications and iterations of the model have continued to produce similar results with slight improvement. This consistent occurrence may be due to changes in the dating landscape that have occurred since the synthesis of the confluence model. In addition, these replications and iterations of the confluence model have utilized different ways of measuring one of the core constructs of the confluence model: impersonal sex. This study had two aims: (1) identify the best method of measuring impersonal sex, and (2) identify if hostile sexism improves the confluence model. Results from a series of confirmatory factor analyses indicated that the best method of measuring impersonal sex is the Sociosexual Orientation Inventory (SOI). We developed three structural models: (1) the original confluence model, (2) the original confluence model with the addition of impersonal sex, and (3) a reassessed model, where hostile sexism replaced hostile masculinity. The results from these three models indicated that the replacement of hostile masculinity (the other core construct of the confluence model) with hostile sexism improved the overall fit of the model across several measures of model fit.

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## **Chapter 1**

### **Introduction**

Sexual aggression is a widespread public health concern, with young women at the greatest risk of experiencing the behavior (Black et al., 2011; Breiding et al., 2014). Sexual aggression is defined as non-consensual sexual activity where a perpetrator uses force, coercion, or purposeful methods (e.g., intoxication) to obtain the sexual activity (CDC, 2012). An estimated 20-25% of female students experience sexual aggression before leaving college (Bureau of Justice Statistics, 2014; Muehlenhard, Peterson, Humphreys, & Jozkowski, 2017). Victims of sexual aggression report a variety of serious negative consequences including: PTSD (Martin, Macy, & Young, 2011), substance use (Angelone, Marcantonio, & Melillo, 2017), and depression (Casey & Nurius, 2005). Moreover, individuals who experience sexual aggression are at greater risk of being revictimized (Breitenbecher, 2001). Given the high prevalence and negative sequelae associated with sexual victimization, developing our theoretical understanding of sexual aggression is paramount.

Sexual aggression is typically perpetrated by men, with approximately 25% to 58% of men reporting engaging in sexual aggression (Bureau of Justice Statistics, 2014; Koss, Gidycz, & Wisniewski, 1987). However, the actual rates of perpetration are likely much higher than those reported given a significant discrepancy between rates of reported victimization and the rates of reported perpetration. These differences may be influenced by survey methodology, question wording, or other variables, including a tendency to underreport (Koss, 1992, 1993; Koss et al., 2007; Krebs, Lindquist, Warner, Fisher, & Martin, 2007; Lonsway, Archamault, Koss, Zorza, & Campbell, 2008; Strang, Peterson,

Hill, & Heiman, 2013). In particular, college men tend to maintain the highest rates of perpetration in comparison to the general population (Benson, Charlton, & Goodhart, 1992; Berkowitz, 1992; Sampson, 2006). In addition, sexual aggression occurs commonly within the context of an acquaintance, and less commonly between strangers (Bechhofer & Parrot, 1991; Viki, Abrams, & Masser, 2004). In fact, between 80% to 96% of victims report being acquainted with the perpetrator (Bureau of Justice Statistics, 2014; Zawacki, Abbey, Buck, McAuslan, & Clinton-Sherrod, 2003).

Given the prevalence of sexual aggression, there have been widespread efforts to understand the behavior and relevant risk factors. Some researchers have focused on specific personality traits in understanding sexual aggression risk (Lee, Gizzarone, & Ashton, 2003; Russell & King, 2016; Voller & Long, 2010). However, the current gold standard approach to examining risk for sexual aggression perpetration is the confluence model (Malamuth, Linz, Heavey, Barnes, & Acker, 1995). This model has received strong empirical support over the last three decades in terms of its predictive utility of sexual aggression (Malamuth et al., 1995; Malamuth, 1998). Within this model, there are two core interacting risk factors that are predictive of sexual aggression: impersonal sex and hostile masculinity. Impersonal sex has been defined as sex sought in conquest (e.g., a game to be won) by men that is non-committal and lacks emotional closeness to the sexual partner (Malamuth et al., 1991; Malamuth, Sockloskie, Koss, & Tanaka, 1991). Hostile masculinity is a form of masculine ideology whereby men view themselves as superior to women and maintain a distrustful, domineering attitude towards women, gaining gratification from dominating women (Malamuth, 1986). The confluence model specifies that while both hostile masculinity and impersonal sex can be individually

related to sexual aggression, the interaction of these two factors is the most important element of the model's predictive utility (Malamuth et al., 1995).

Given the literature supporting the use of the confluence model in predicting risk of perpetrating sexual aggression (Malamuth et al., 1995), researchers have added constructs to the model in attempts to increase its predictive utility. For instance, given the high rates in which alcohol-involved sexual aggression occurs (Abbey, 2011), several researchers have added alcohol use to the model (Parkhill & Abbey 2008). In short, men who engage in more alcohol use, in combination with the endorsement of hostile masculinity, were more likely to report sexual aggression behaviors. In addition, given that greater exposure to pornography is associated with increased acceptance of violence and aggression towards women, researchers have also explored the role of pornography with sexual aggression perpetration (Paolucci, Genuis, & Violato, 1997; Ramasubramanian & Oliver, 2003). Numerous studies demonstrate a strong relationship between pornography use and sexual aggression perpetration (Malamuth, Hald, & Koss, 2012). Further, given the association between sexual aggression and attachment style, researchers have added attachment style to the confluence model (Nguyen & Parkhill, 2014). There is also an association between risk of sexual aggression and empathy, with empathy moderating the relationship between hostile masculinity and impersonal sex to predict sexual aggression (Wheeler, George, & Dahl, 2002). In the end, each modification has further developed our understanding of factors associated with sexual aggression perpetration. However, while factors such as empathy and alcohol consumption are related to sexual aggression within the Confluence model, the results of

these extended models tend to be similar to that of the original model (Parkhill & Abbey, 2008; Wheeler, George, & Dahl, 2002).

Changes in dating culture may explain why previous expansions of the confluence model have led to vastly different predictive values. The confluence model was developed several decades ago, within the framework of a dating culture that may be quite different from the culture we see today, as the increase in online dating has vastly altered the dating landscape (Finkel, Eastwick, Karney, Reis, & Sprecher, 2012). The predictive utility of the core constructs of the confluence model (i.e., hostile masculinity and impersonal sex) were tested during an era where the dating app culture did not exist. Thus, there may be a need to reassess the core constructs of the confluence model to identify whether or not they are still applicable. Previous attempts have been additive in that, the core constructs of the model remain the same, while new constructs are introduced in an effort to increase the confluence model's predictive utility. Moreover, when examining the core constructs empirically, there are a variety of issues that have been identified in the literature. First, several researchers that have found mixed or null results regarding the relationship between hostile masculinity and sexual aggression (Abbey, Parkhill, Clinton-Sherrod, & Zawacki, 2007; Calhoun, Bernat, Clum, & Frame, 1997; Hall, Teten, DeGarmo, Sue, & Stephens, 2005; Ménard, Hall, Phung, Ghebrial, & Martin, 2003). For instance, the components of hostile masculinity were not significant predictors of specific forms of sexual aggression: sexual coercion and sexual harassment (Menard et al., 2003). Other researchers have demonstrated that hostile masculinity overall was not a significant multivariate predictor of perpetration (Calhoun et al., 1997). In addition, hostile masculinity did not predict sexual aggression across different ethnic

groups suggesting that hostile masculinity may only be relevant for specific ethnicities (Hall et al., 2005).

Research on the impersonal sex core construct has raised two important issues. First, the definition of impersonal sex is unclear in the literature. Originally, Malamuth and colleagues (1995) identified impersonal sex as a single construct, while also identifying sexual promiscuity as a single construct, implying that impersonal sex and sexual promiscuity are related, but are distinct individual variables. However, in a follow-up publication, Malamuth (1996) reported that impersonal sex is sometimes referred to as sexual promiscuity, despite having previously identified them as separate constructs. Noteworthy, the original model involves a confluence between impersonal sex and hostile masculinity, not sexual promiscuity and hostile masculinity (Malamuth et al., 1995). The lack of consistency in how impersonal sex has been defined may have led to the second concern regarding impersonal sex, which is the lack of consistency in how the construct is measured (Malamuth et al., 2012, 1995; Nguyen & Parkhill, 2014; Thompson, Swartout, & Koss, 2013; Wegner & Abbey, 2016; Widman, Olson, & Bolen, 2012). Some previous studies have used measures from the original study by Malamuth and colleagues (1986), some of which were validated more than 20 years prior to the establishment of the model itself, while others have used modified versions of these measures. For example, researchers have combined sexual promiscuity with impersonal sex (Nguyen & Parkhill, 2014; Widman et al., 2012), while others have considered impersonal sex as completely separate construct from sexual promiscuity, representative of how the construct has been previously defined (Anderson & Anderson, 2008; Hall et al., 2005).

With regard to the inconsistent use of impersonal sex measures, there are three common methods evident in the literature. First, Malamuth et al. (1995) used a combination of three questions to identify subjects' endorsement of impersonal sex: (1) "How often do you become sexually stimulated when you see a member of the opposite sex whom you do not know?" (2) "How often do you masturbate?" and (3) "About how many times (if ever) have you been unfaithful to your spouse or partner?" Unfortunately, researchers have collectively shown that as an aggregated measure of impersonal sex, the combination of these three questions has yielded low reliability estimates: Malamuth et al. (1995) reported an alpha coefficient of 0.33. Second, impersonal sex has been identified by asking subjects how many sexual partners they have encountered, sometimes in combination with other questions that Malamuth et al. (1995) has used in the past, typically asked as "How many sexual partners have you had in your lifetime?" This question lacks specificity and could potentially lead participants to unintentionally omit some sexual experiences (e.g., oral sex, anal sex, etc.). Others have used the Sociosexual Orientation Inventory (SOI), a well-validated measure, to identify impersonal sex (Simpson & Gangestad, 1992). Undoubtedly, there is no clear consensus within the literature regarding which combination of questions, or which particular scale should be used to assess impersonal sex within the context of the confluence model.

Given the issues of consistency with measurement and definition of impersonal sex, and the mixed results associated with hostile masculinity, it is important to reexamine the confluence model to determine its adequacy in predicting sexual aggression within the current dating landscape. While Malamuth and colleagues (2012) have reiterated that hostile masculinity and impersonal sex are the core constructs in the

conceptual model, there is a gap in the literature, in that these core constructs have not been explored from a contemporary framework with male college students. Previous modifications to the confluence model have included additions to increase model fit, although the core constructs in the confluence model have never been modified, and improvements have been based on its original synthesis.

Several issues regarding the confluence model have been discussed. First, the core constructs of the confluence model have not yet been explored in a contemporary context. Second, issues with the core construct hostile masculinity and its relationship with sexual aggression were discussed, mainly noting mixed results regarding this relationship. Third, the lack of consistency regarding definition and method of measuring impersonal sex, the second core construct of the confluence model, was discussed.

The confluence model of sexual aggression can be modernized to fit with current trends in the literature as well as current dating norms through a different construct: hostile sexism. Hostile sexism has been described as the ideology of traditional gender roles: that women are the weaker sex, that male superiority is justified, as well as the exploitation of women as sexual objects (Glick & Fiske, 1997). Hostile sexism has been linked to negative attitudes towards non-traditional women, such as feminists, or women who prioritize their careers (Masser & Abrams, 2004). This perspective justifies and maintains a patriarchal social structure, which results in a power differential between men and women (Glick & Fiske, 1997). Dominative paternalism, a more hostile version of general paternalism, stems from power differential created by the patriarchy, and argues for the control of women by men (Fiske, 1993; Goodwin & Fiske, 1995). Most importantly, hostile sexism is synonymous with the current trend in the literature, which



shows that acquaintance rape is much more prevalent than stranger rape (Black et al., 2011; Breiding et al., 2014). Thus, it is possible that using this more contemporary perspective, in lieu of hostile masculinity, may increase the predictive utility of the confluence model.

Though hostile masculinity and hostile sexism may appear to be similar, they represent different ideologies. Hostile masculinity represents a hatred towards woman that leads to hypersensitivity of rejection by all women, provoking defensive and hostile behavior (Malamuth, 1996). Hostile sexism, on the other hand, represents endorsement of traditional gender roles and is elicited by women who do not conform to those typical gender norms (Glick & Fiske, 2001). Hostile sexism has been shown to represent unfavorable stereotypes of women (Glick & Fiske, 2001), and is predictive of sexually aggressive acts (Diehl, Rees, & Bohner, 2018). Individuals who endorse hostile sexism approve of aggression towards their partner (Forbes, Adams-Curtis, & White, 2004; Glick, Sakalli-Ugurlu, Ferreira, & Souza, 2002; Overall, Sibley, & Tan, 2011), and may fear that women will take advantage of them if they become dependent on women, making them more likely to engage in sexual acts without commitment, in line with impersonal sex (Glick & Fiske, 1996). Further, men who endorse hostile sexism find it acceptable to commit sexual aggression when women decline sexual advances (Masser, Viki, & Power, 2006; Viki, Chiroro, & Abrams, 2006; Yamawaki, 2007), and tend to believe that the victim really wanted sex despite saying no, or that she led the perpetrator on (Abrams, Viki, Masser, & Bohner, 2003; Masser et al., 2006). Consider, for instance, the well-known situation that college students experience: meeting a Tinder date or going home with someone after a night out. Once the situation of potential sexual relations

unfolds, women may decide they are not interested in having sex with their date. However, if their date subscribes to beliefs associated with hostile sexism, they may believe that the woman led them on, or actually wants to engage in sexual activity despite saying no. As a result, the man may attempt to coerce the woman into sex or use more severe methods (rather than the defensive behavior that may occur with hostile masculinity) to obtain sex, which can be identified as sexual aggression. Given that hostile sexism appropriately fits this experience, it may increase the predictive utility of the confluence model.

There are two aims for this study: (1) to determine the best method of measuring impersonal sex, and (2) to determine if HS will be a better predictor of sexual aggression in the confluence model than hostile masculinity. In order to view the confluence model from a holistic perspective that integrates both measurement changes for impersonal sex and construct updates, an inductive statistical modeling approach is necessary. There have been previous studies that have used a statistical modeling approach with the confluence model (Jacques-Tiura, Abbey, Parkhill, & Zawacki, 2007; Vega & Malamuth, 2007, p. 201; Wegner & Abbey, 2016). However, these studies were additive in nature, and identified the addition of important variables like pornography and alcohol use. Thus, there continues to be a gap in the literature, in that the original confluence model has not been reassessed against changes in culture or trends in the literature. In addition, previous studies that have used a modeling approach have not attempted to identify improved methods of measuring impersonal sex. With this modeling approach, we were able to detect problems with both measurement and constructs. In addition, we identified which model is better able to predict risk for sexual aggression: (1) the original confluence

model, where sexual aggression risk is predicted by the confluence of hostile masculinity and impersonal sex, or (2) an additive model where sexual aggression risk is predicted by the confluence of hostile masculinity and impersonal sex with hostile sexism as a direct indicator (3) or the reassessed model where the confluence of HS and impersonal sex is predictive of sexual aggression risk.

In our bottom-up approach, we conducted a confirmatory factor analysis to determine the best method of measuring impersonal sex and compared three structural models to determine which is more predictive of sexual aggression with the identified method of measuring impersonal sex. The first structural model represented the traditional conceptual model developed by Malamuth (1986), who found that the confluence between impersonal sex and hostile masculinity was predictive of a male's risk of sexual aggression. The second model represented the original confluence model with the addition of hostile sexism. The third model represents the reassessed model that we are proposing, which consists of a confluence between hostile sexism and impersonal sex, predictive of a male's risk of sexual aggression. We hypothesized that this reassessed model will be more predictive of a male's risk of sexual aggression than the traditional confluence model developed by Malamuth (1986) as well as the additive model. The methodology we used to test our hypotheses is unique, as no other study has taken an inductive approach with the confluence model of sexual aggression.

## Chapter 2

### Methodology

#### Participants

Our sample included 276 college males recruited from a medium-sized public university in the northeastern U.S., using the online subject pool of students who have volunteered to participate as part of a requirement for a psychology course. Prior to beginning the study, participants provided informed consent, then completed the study survey packet. All study procedures have been approved by the Rowan University Institutional Review Board.

Approximately 53.6% of our sample identified as White, while 13.4% identified as African-American, 12% Latino/a, 6.5% Asian-American, and 13.4% Other, while 1.1% did not respond. About 98.6% of the participants in our sample identified as male, while approximately .4% identified as Other, and 1% did not respond. Participants who identified as Other or did not respond were excluded from the analyses, as the described gender norms may not be applicable to individuals who do not identify as male. The mean age of our sample was 19.4 years. The Heterosexual–Homosexual Rating Scale was used to identify sexual orientation, which identifies heterosexuality and homosexuality based on a spectrum (Kinsey, Pomeroy, & Martin, 1948). Approximately 89.9% of our sample identified as exclusively heterosexual and 1.8% identified as exclusively homosexual, with the rest of our sample identifying somewhere between exclusivity (see Table 1). Participants who did not identify as exclusively heterosexual were excluded from the study because, similar to non-males, these individuals may not subscribe to the same gender norms as exclusively heterosexual males do. Relationship status was also

assessed, and most participants identified as being single (62%), while 36.2% reported that they were currently dating.

Table 1

*Sample Demographic Information*

Demographic Variable		<i>N</i>	%
Ethnicity	White	148	53.62
	African-American	37	13.41
	Asian-American	18	6.52
	Latino/a	33	11.96
	Other	37	13.41
Gender	Male	272	98.55
	Other	1	.36
Relationship Status	Single	171	61.96
	In a relationship	100	36.23
	Other	2	.72
Sexual Orientation	Exclusively heterosexual	248	89.86
	Exclusively homosexual	5	1.81

**Measures**

**Hostile Masculinity.** Hostile masculinity is a composite of three measures: (1) the Hostility Towards Women scale (HTW; Check, Malamuth, Elias, & Barton, 1985; Lonsway & Fitzgerald, 1995), (2) the Sexual Dominance Scale (SDS; Nelson, 1979), and (3) the Adversarial Sexual Beliefs scale (ASB; Burt, 1980).

The HTW scale is a 30-item self-report measure developed by Check et al. (1985), which identifies an individual's hostile attitudes towards women on a 7-point Likert scale, ranging from *Strongly Disagree* (1) to *Strongly Agree* (7). This measure was

later reduced to 10 items by Lonsway & Fitzgerald (1995), yielding a Cronbach's alpha coefficient of .83. Sample items include, "I think that most women would lie just to get ahead," and "Women are responsible for most of my troubles."

The SDS (Nelson, 1979) is an 8-item self-report subscale assessing the importance of sexual dominance in sexual encounters using a 4-point Likert scale, ranging from *Not important at all* (1) to *Very important* (4). Example items include, "I have sexual relations because I like the feeling that I have someone in my grasp," and "I have sexual relations because when my partner finally surrenders to me I get this incredibly satisfying feeling." The SDS has demonstrated good reliability, with an alpha coefficient of .80 (Malamuth et al., 1995)

The ASB (Burt, 1980) is 9-item self-report measure identifying conflict or distrust with the opposite sex. Questions from the ASB are answered on a 7-point Likert scale, ranging from *Strongly Disagree* (1) to *Strongly Agree* (7). Sample items include, "A women will only respect a man who will lay down the law to her," and "A man's got to show the woman who's boss right from the start or he'll end up henpecked." Previous studies have found that the ASB has good internal consistency, with an Cronbach's alpha coefficient of .80 (Parkhill & Abbey, 2008).

**Impersonal Sex.** Impersonal sex was measured in three ways: (1) the number of lifetime sexual partners, (2) three items reported in Malamuth and colleagues (1995), and (3) the Sociosexual Orientation Inventory (SOI; Penke & Asendorpf, 2008), which are the three most common methods of measuring impersonal sex (C. A. Anderson & Anderson, 2008; Hall et al., 2005; Neil M. Malamuth et al., 1995; Simpson & Gangestad, 1992; Vega & Malamuth, 2007; Wheeler et al., 2002). Number of lifetime sexual partners

was measured by asking “How many sexual partners have you had in your lifetime? (i.e., 1, 2, 10, 12)” The three items that Malamuth and colleagues (1995) originally used to measure impersonal sex were “How often do you become sexually stimulated when you see a member of the opposite sex whom you do not know?,” “How often do you masturbate?” and “About how many times (if ever) have you been unfaithful to your spouse or partner?”

The SOI is a 9-item self-report measure identifying willingness to engage in sex without commitment, where questions 1-3 are measured numerically (i.e., 0, 1, 2, 3,...20 or more), questions 4-6 are measured on a 9-point Likert scale ranging from *Strongly disagree* (1) to *Strongly agree* (9), and questions 7-9 are measured on a 9-point scale ranging from *Never* (1) to *At least once a day* (9; Penke & Asendorpf, 2008). Sample items include “With how many different partners have you had sexual intercourse without having an interest in a long-term committed relationship with this person?” and “How often do you experience sexual arousal when you are in contact with someone you are not in a committed romantic relationship with?” The SOI displays good reliability, and has a Cronbach’s alpha coefficient of .86 (Penke & Asendorpf, 2008).

**Hostile Sexism.** Hostile sexism was measured using an 11-item, self-report subscale from the Ambivalent Sexism Inventory (Glick & Fiske, 1996), designed to identify a deep-seated dislike or aversion towards women. Questions from the hostile sexism subscale were measured using a 6-point Likert scale, ranging from *Strongly Disagree* (1) to *Strongly Agree* (6). Sample items include, “Women seek to gain power by getting control over men,” and “Many women are actually seeking special favors, such as hiring policies that favor them over men, under the guise of asking for

‘equality.’” The hostile sexism subscale has yielded a Cronbach’s alpha coefficient ranging from .80 to .92 (Glick & Fiske, 1996).

**Sexual Aggression.** The Sexual Experiences Survey (SES; Koss et al., 2007) is a 10-item self-report measure identifying sexual aggression perpetration. The SES uses questions that identify specific behaviors since age 14, rather than relying solely on labels. Specifically, the SES identifies the frequency of detailed behaviors and the tactics used to carry out those behaviors. For example, one item asks participants how many times they have “Had oral sex with someone or made them have oral sex with me without their consent by threatening to physically harm someone or someone close to them.” Answer options range from *Never Happened* (0) to *3 or more times* (3). The Cronbach’s alpha coefficient for the SES was .89 (Koss et al., 1987).

The Coercive Sexuality Scale (CSS; Rapaport & Burkhart, 1984) is an 19-item self-report measures that is used to identify sexually coercive and noncoercive conduct using a range of behaviors. Items identify the frequency of specific behaviors initiated against a woman’s will, such as “Held a woman’s hand” and “Kissed a woman.” Answer options range from *Never* (0) to *Often* (4). The Cronbach’s alpha coefficient for the CSS has been reported at .96 (Rapaport & Burkhart, 1984). The prevalence of sexual aggression identified through use of the CSS is similar to the prevalence of sexual aggression identified using the SES (Koss & Oros, 1982).



## Chapter 3

### Results

#### Analysis Strategy

All statistical analyses were conducted using the lavaan package in R (Rosseel, 2012). Data were visualized using histograms to identify if any assumptions will be violated. Descriptive statistics can be found in Table 2 and Table 5. Due to the widely varied ranges of the different measures utilized, as well as zero-inflated data, and to adhere to the original confluence model, all measures were standardized into z-scores. In order to identify which version of measuring impersonal sex is the most accurate, we conducted a confirmatory factor analysis (CFA) to identify the factor loadings for each question. Distinct loadings suggest that these different questions or scales are indeed measuring different things. In order to determine if these different combinations are measuring the same construct, a measurement model was constructed to help identify which questions or scales (indicators) are most representative of impersonal sex (latent variable). Once the constructs were reassessed, the structural model was created, and models were compared to determine the model that best fits the data. This systematic, inductive process provides a holistic perspective of the entire model, which would otherwise be difficult to view with other analyses (Schreiber, Stage, King, Nora, & Barlow, 2006). This bottom-up modeling approach has never been conducted with the confluence model or its iterations.

#### Confirmatory Factor Analyses for Impersonal Sex

**Item-Level Confirmatory Factor Analysis.** A CFA was conducted at the item-level to determine the factor loadings of each question, with the intention of identifying

how each item loads on each scale. The number of lifetime sexual partners variable was excluded from this analysis, as it is only one question. A CFA at the item-level provided information about whether the individual questions from each scale are measuring the same construct, or if they are identifying something different from each other. With this, we were able to identify which questions should be used for each scale. Mean and variance adjusted weighted least squares (WLSMV) estimation was used due to zero-inflated data, with pairwise present data analyzed. CFA results from the three questions used by Malamuth and colleagues (1995) revealed that the items do not load on a common factor (Table 4) with a significant chi-square,  $\chi^2(0) = 2.42e-13$ ,  $p < .000$ , a CFI of 1.00, a TLI of 1.00, an SRMR of  $3.21e-9$ , and an RMSEA of 0.00. While these results appear to show perfect fit (with the exception of the chi-square results), these items may not be identifying the same construct. It is important to note that this result could occur due to the small number of questions. However, this result is most likely due to model saturation, which occurs when the degrees of freedom of the given model are zero. Saturated models can predict local values within the specific data being used, however, they have no value in estimation (Goodboy & Kline, 2017). To remedy this situation, another parameter would need to be introduced to the model, though this modification would lead to a model that is not theoretically representative of our research question. Given these results, it appears that these questions should be excluded from the structural model.

CFA results from the SOI revealed that that the items load on the same factor (Table 7) with a significant chi-square,  $\chi^2(27) = 510$ ,  $p < .001$ , a CFI of 0.58, a TLI of 0.44, an SRMR of 0.17, and an RMSEA of 0.26. The items on the SOI display a common

factor loading, with standardized estimates ranging from .26 - .90 and p-values <.001.

One reverse-coded item on the SOI (question 6) produced a standardized estimate of -.55 with a p-value <.001.

Table 2

*Descriptive statistics for the three questions Malamuth and colleagues (1995) used to measure impersonal sex*

	<b>Question 1</b>	<b>Question 2</b>	<b>Question 3</b>
N	273	271	273
Mean	4.09	5.21	1.53
Median	4	6	1
Mode	5.00	6.00	1.00
Standard deviation	2.01	1.58	1.19
Variance	4.05	2.51	1.41
Range	6	6	6
Minimum	1	1	1
Maximum	7	7	7
Skewness	-0.05	-1.01	2.93
Std. error skewness	0.15	0.15	0.15
Kurtosis	-1.31	0.27	9.21
Std. error kurtosis	0.29	0.29	0.29
Shapiro-Wilk p	<.001	<.001	<.001

Table 3

*Correlation matrix for the three questions Malamuth and colleagues (1995) used to measure impersonal sex*

	Question 1	Question 2	Question 3
Question 1 <sup>a</sup>	—	0.30***	0.12*
Question 2 <sup>b</sup>		—	0.06
Question 3 <sup>c</sup>			—

*Note.* \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ . <sup>a</sup> “How often do you become sexually stimulated when you see a member of the opposite sex whom you do not know?”  
<sup>b</sup> “How often do you masturbate?” <sup>c</sup> “About how many times (if ever) have you been unfaithful to your spouse or partner?”

Table 4

*CFA results for the three questions Malamuth and colleagues (1995) used to measure impersonal sex*

Factor	Indicator	Estimate	SE	Z	p	Stand. Estimate
Factor 1	Question 1	1.55	0.77	2.03	0.04	0.77
	Question 2	0.62	0.32	1.96	0.05	0.39
	Question 3	0.18	0.11	1.60	0.11	0.15

Table 5

*Descriptive statistics for the SOI*

	Question								
	1	2	3	4	5	6	7	8	9
N	272	274	272	274	274	273	274	274	274
Mean	2.91	2.32	2.65	5.02	4.76	2.53	4.90	3.72	3.54
Median	2.00	2.00	2.00	5.00	5.00	2.00	6.00	4.00	4.00
SD	1.90	1.65	1.97	2.29	2.48	2.26	2.34	2.36	2.51
Variance	3.61	2.72	3.87	5.22	6.16	5.10	5.47	5.58	6.30
Range	7.00	7.00	7.00	8.00	8.00	8.00	8.00	8.00	8.00
Skewness	0.96	1.52	1.16	-0.41	-0.39	0.89	-0.63	-0.09	0.14
Std. error skewness	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Shapiro-Wilk p	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001

Table 6

*Correlation matrix for the SOI*

	1	2	3	4	5	6	7	8	9
1	—	0.66***	0.74***	0.33***	0.31***	0.43***	0.19**	0.24***	0.19**
2		—	0.76***	0.25***	0.22***	0.33***	0.12*	0.12*	0.08
3			—	0.35***	0.37***	0.42***	0.20***	0.19**	0.18**
4				—	0.60***	0.53***	0.29***	0.25***	0.21***
5					—	0.62***	0.34***	0.33***	0.24***
6						—	0.38***	0.29***	0.33***
7							—	0.59***	0.60***
8								—	0.58***
9									—

Note. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .

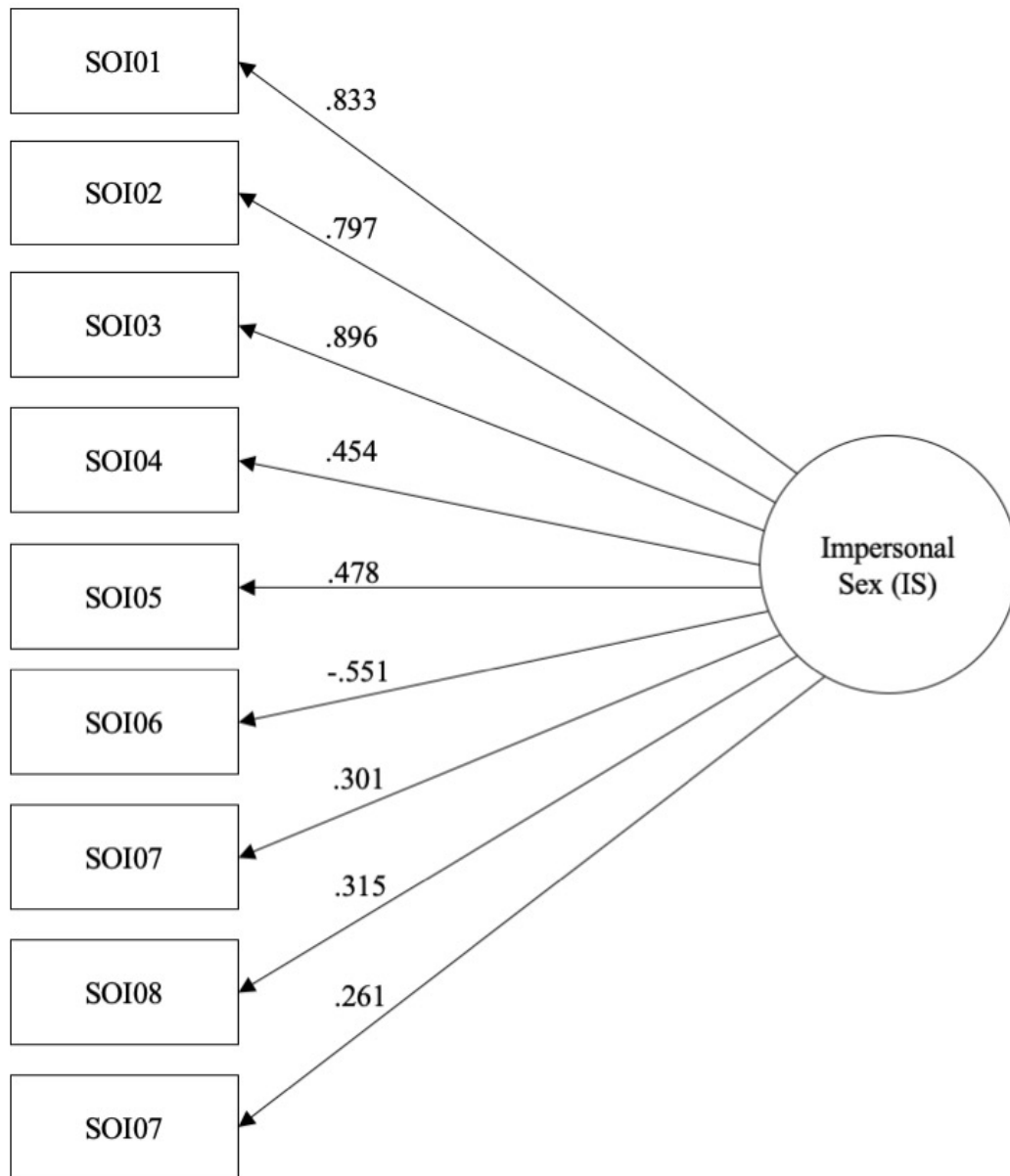
Table 7

*CFA results for the SOI used to measure impersonal sex*

Factor	Question	Estimate	SE	Z	p	Stand. Estimate
Factor 1	1	1.60	0.10	16.08	< .001	0.83
	2	1.30	0.09	14.73	< .001	0.80
	3	1.75	0.10	17.39	< .001	0.90
	4	1.04	0.14	7.31	< .001	0.45
	5	1.16	0.15	7.55	< .001	0.48
	6	-1.24	0.14	-9.03	< .001	-0.55
	7	0.70	0.15	4.65	< .001	0.30
	8	0.72	0.15	4.75	< .001	0.32
	9	0.65	0.16	4.03	< .001	0.26

**Scale-Level Confirmatory Factor Analysis.** We also conducted a CFA at the scale-level in order to identify the factor loadings of the scales intended to measure impersonal sex. A CFA at the scale-level provided information about whether or not the scales are measuring the same thing, or if they are measuring something different from each other. Identical to the item-level CFAs, WLSMV estimation was used due to zero-inflated data, with pairwise present data analyzed. The results of the scale-level CFA produced a significant chi-square  $\chi^2(0) = 4.88e-13, p < .000$ , a CFI of 1.00, a TLI of 1.00, an SRMR of  $2.27e-9$ , and an RMSEA of 0.00. Similar to the results of the original questions used by Malamuth and colleagues (1995), this model appears to be saturated.

Given that the SOI is a well-established measure identifying impersonal sex, and the CFA indicates that the items are loading as expected, it appears that the SOI is the best option for measuring impersonal sex. As such, we used the SOI as the indicator for impersonal sex in our structural model.



*Figure 1.* Confirmatory factor analysis for impersonal sex with items from the Sociosexual Orientation Inventory.



Table 8

*CFA results for the impersonal sex measures*

<b>Factor</b>	<b>Indicator</b>	<b>Estimate</b>	<b>SE</b>	<b>Z</b>	<b>p</b>	<b>Std. Estimate</b>
Factor 1	Original <sup>a</sup>	1.53	0.31	4.90	< .001	0.46
	Lifetime SP <sup>b</sup>	3.16	0.79	4.01	< .001	0.31
	SOI <sup>c</sup>	13.25	2.15	6.16	< .001	1.31

*Note.* <sup>a</sup> Three original questions for impersonal sex used by Malamuth and colleagues (1995). <sup>b</sup> Number of lifetime sexual partners. <sup>c</sup> Sociosexual Orientation Inventory.

### **Identifying the Model Most Predictive of Sexual Aggression**

**Structural Models.** The final analysis involved the development of three structural models. Due to the complexity of these models, in addition to non-normality of indicators for the outcome variable, item parceling was conducted for each measure (Matsunaga, 2008). Specifically, subset-item parceling methodology was utilized with a factorial algorithm to identify aggregate indicators. This method was chosen to avoid overestimation or inflated fit, which can occur with methods such as all-item parceling (Matsunaga, 2008). Subset-item parcels were identified using factors identified through a confirmatory factor analysis for each measure. The first structural model represented the original confluence model, using the measures from Malamuth et al. (1995). The second structural model represented the original confluence model with the addition of hostile sexism. The third structural model represented our updated confluence model that replaces hostile masculinity with hostile sexism. A mean and variance adjusted weighted least squares (WLSMV) estimator was used because several variables are zero-inflated

and we are analyzing multi-level models (Muthen & Muthen, 2010). Pairwise present data were analyzed, as full information maximum likelihood is not appropriate for WLSMV (Muthen & Muthen, 2010; Enders, 2001). Interactions were implemented into the model using the Kenny & Judd method (Kenny & Judd, 1984).

Given the controversy surrounding the use of p-values as the sole decision criterion in establishing statistical significance of results (Kim & Bang, 2016; Kuffner & Walker, 2019), we have elected to establish an additional decision criterion. Decision criteria for determining better model fit was established as a difference of .2 in RMSEA. In other words, if there is at least a difference of .2 in RMSEA values between our models, we will conclude that they are different. Currently, there is a dearth of literature on establishing new decision criteria that solidify or improve the currently used p-value, which limits our ability to determine what is considered a truly meaningful difference in RMSEA values. However, we utilized a variety of fit statistics in addition to the RMSEA to ensure that our results were accurate.

All structural models are graphically described in Figure 2, 3, and 4. The hypothesized contemporary model appears to have good fit overall and better fit in comparison to the other two models. All fit indices provided by the lavaan package for WLSMV estimation are provided. The representation of the original confluence model yielded an RMSEA of .079, CFI of .919, TLI of .906, an SRMR of .097, and a significant chi-square,  $\chi^2(164) = 355.08, p < .000$ . The additive model produced an RMSEA of .063, CFI of .935, TLI of .926, an SRMR of .092, and a significant chi-square,  $\chi^2(223) = 437.0, p < .000$ . The hypothesized contemporary model yielded an RMSEA of .033, CFI of .952, TLI of .940, an SRMR of .099, and a significant chi-square,  $\chi^2(62) = 102.50, p <$

.010. With this, it appears that our decision criteria have been met, as the RMSEA for the hypothesized contemporary model is smaller than the original model by .46.

Of note, the relationship between the interaction of the core constructs and the latent variable of sexual aggression drastically changes, as evidenced by the standardized estimate. In the original model, the standardized estimate between sexual aggression and the interaction of hostile masculinity and impersonal sex is .086 and this relationship is not statistically significant ( $p=.489$ ). This value drops to .037 in the additive model, indicating a weaker relationship between the two, which is also not statistically significant ( $p=.714$ ). However, this relationship increases to a value of .80 in the reassessed model, indicating a much stronger and statistically significant ( $p=.002$ ) relationship. This observation can be identified again through the coefficients of determination ( $R^2$ ). In the original model, the  $R^2$  value for sexual aggression is identified as .048. In the additive model, the  $R^2$  value for sexual aggression is .036. However, in the reassessed model, the  $R^2$  value is .056, indicating that more variance is explained by the reassessed model in comparison to the other two models.

Table 9

*SEM results for Malamuth's original confluence model of sexual aggression.*

<b>Latent Factor</b>	<b>Indicator</b>	<b>B</b>	<b>SE</b>	<b>Z</b>	<b>p</b>	<b>Standardized</b>
Sexual Aggression	CSS	1.00	0.00	—	—	0.53
Sexual Aggression	SES	0.52	0.20	2.56	.011	0.22
Impersonal Sex	SOI	1.00	0.00	—	—	1
Hostile Masculinity	HTW	1.00	0.00	—	—	0.87
Hostile Masculinity	SDS	0.12	0.08	1.41	.158	0.66
Hostile Masculinity	ASB	1.10	0.15	7.47	.000	0.96
HTW	HTW Parcel 1	1.00	0.00	—	—	0.71
HTW	HTW Parcel 2	1.07	0.11	9.57	.000	0.77
HTW	HTW Parcel 3	1.07	0.12	9.28	.000	0.76
CSS	CSS Parcel 1	1.00	0.00	—	—	0.77
CSS	CSS Parcel 2	1.22	0.17	7.21	.000	0.94
CSS	CSS Parcel 3	0.29	0.12	2.52	.012	0.22
CSS	CSS Parcel 4	0.06	0.07	0.91	.364	0.05
SOI	SOI Parcel 1	1.00	0.00	—	—	0.53
SOI	SOI Parcel 2	1.21	0.22	5.51	.000	0.63
SOI	SOI Parcel 3	-1.45	0.23	-6.30	.000	-0.78
SOI	SOI Parcel 4	1.37	0.23	5.86	.000	0.71
SDS	SDS Parcel 1	1.00	0.00	—	—	0.11
SDS	SDS Parcel 2	-2.45	2.27	-1.08	.281	-0.28
SDS	SDS Parcel 3	7.56	5.44	1.39	.165	0.86
SDS	SDS Parcel 4	7.30	5.18	1.41	.159	0.83
ASB	ASB Parcel 1	1.00	0.00	—	—	0.71
ASB	ASB Parcel 2	0.74	0.11	6.78	.000	0.52
ASB	ASB Parcel 3	1.35	0.10	12.95	.000	0.97
Sexual Aggression	Impersonal Sex	0.78	0.23	3.43	.001	0.61
Sexual Aggression	Hostile Masculinity	1.08	0.30	3.70	.000	0.71
Sexual Aggression	HM <sup>a</sup> xIS <sup>b</sup>	0.22	0.32	0.70	.489	0.09

*Note.* <sup>a</sup>Hostile Masculinity. <sup>b</sup>Impersonal Sex.

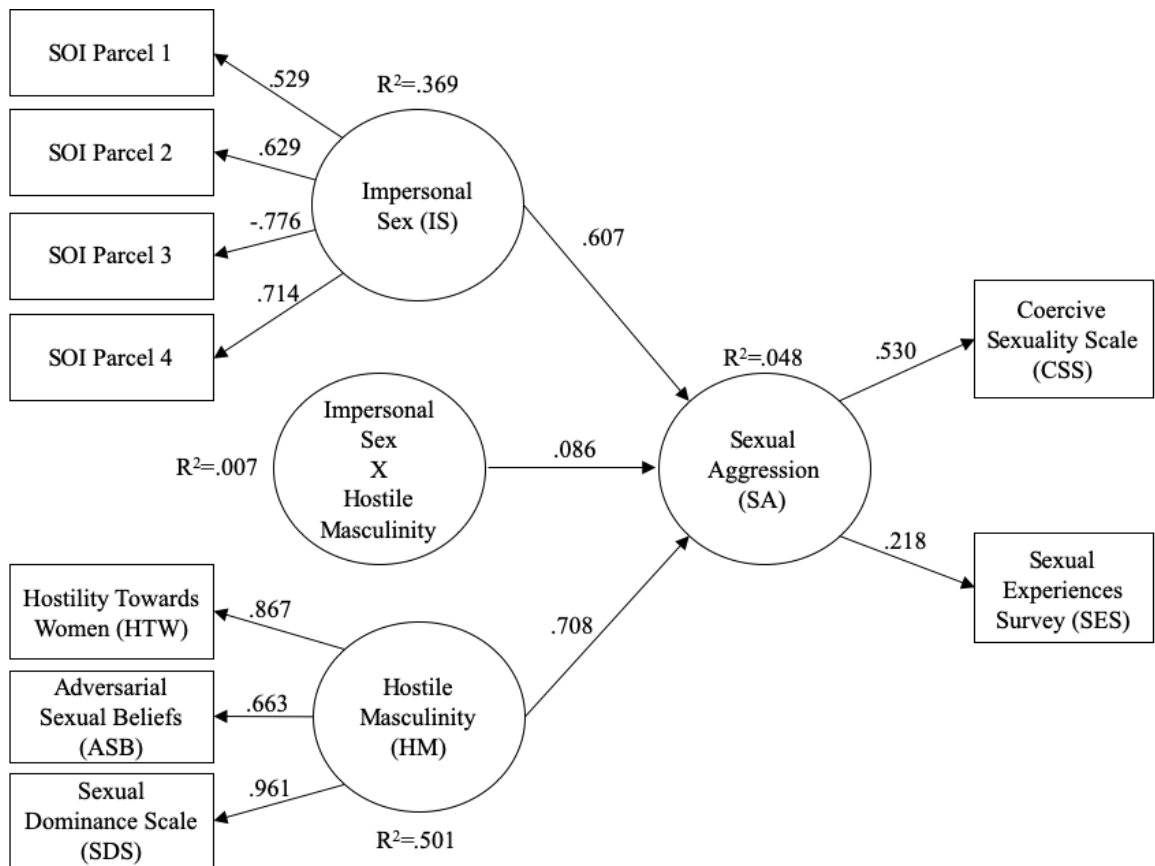


Figure 2. Malamuth's confluence model of Sexual Aggression as a structural model.

Table 10

*SEM results for hypothesis one (addition of hostile sexism).*

<b>Factor</b>	<b>Indicator</b>	<b>B</b>	<b>SE</b>	<b>Z</b>	<b>p</b>	<b>Standardized</b>
Sexual Aggression	CSS	1.00	0.00	—	—	0.39
Sexual Aggression	SES	0.59	0.22	2.68	.007	0.19
Impersonal Sex	SOI	1.00	0.00	—	—	1.00
Hostile Masculinity	HTW	1.00	0.00	—	—	0.90
Hostile Masculinity	SDS	0.08	0.08	0.96	.339	0.65
Hostile Masculinity	ASB	1.06	0.13	8.33	.000	0.93
HTW	HTW Parcel 1	1.00	0.00	—	—	0.70
HTW	HTW Parcel 2	1.12	0.11	10.20	.000	0.79
HTW	HTW Parcel 3	1.09	0.12	9.33	.000	0.76
CSS	CSS Parcel 1	1.00	0.00	—	—	0.81
CSS	CSS Parcel 2	1.12	0.17	6.42	.000	0.91
CSS	CSS Parcel 3	0.26	0.11	2.41	.016	0.21
CSS	CSS Parcel 4	0.03	0.06	0.53	.594	0.03
SOI	SOI Parcel 1	1.00	0.00	—	—	0.58
SOI	SOI Parcel 2	1.06	0.19	5.61	.000	0.61
SOI	SOI Parcel 3	-1.30	0.21	-6.30	.000	-0.77
SOI	SOI Parcel 4	1.18	0.20	5.81	.000	0.68
SDS	SDS Parcel 1	1.00	0.00	—	—	0.08
SDS	SDS Parcel 2	-3.70	4.67	-0.80	.429	-0.29
SDS	SDS Parcel 3	11.05	11.67	0.95	.344	0.88
SDS	SDS Parcel 4	10.36	10.85	0.96	.340	0.83
ASB	ASB Parcel 1	1.00	0.00	—	—	0.73
ASB	ASB Parcel 2	0.69	0.11	6.52	.000	0.50
ASB	ASB Parcel 3	1.34	0.10	13.87	.000	0.98
Hostile Sexism	HS Parcel 1	1.00	0.00	—	—	0.66
Hostile Sexism	HS Parcel 2	0.74	0.13	5.56	.000	0.48
Hostile Sexism	HS Parcel 3	1.51	0.15	9.81	.000	1.01
Sexual Aggression	Impersonal Sex	0.83	0.23	3.58	.000	0.45
Sexual Aggression	Hostile Masculinity	2.07	0.50	4.18	.000	1.01
Sexual Aggression	Hostile Sexism	1.65	0.41	3.98	.000	0.77
Sexual Aggression	HM <sup>a</sup> xIS <sup>b</sup>	0.13	0.34	0.37	.714	0.04

*Note.* <sup>a</sup>Hostile Masculinity. <sup>b</sup>Impersonal Sex.

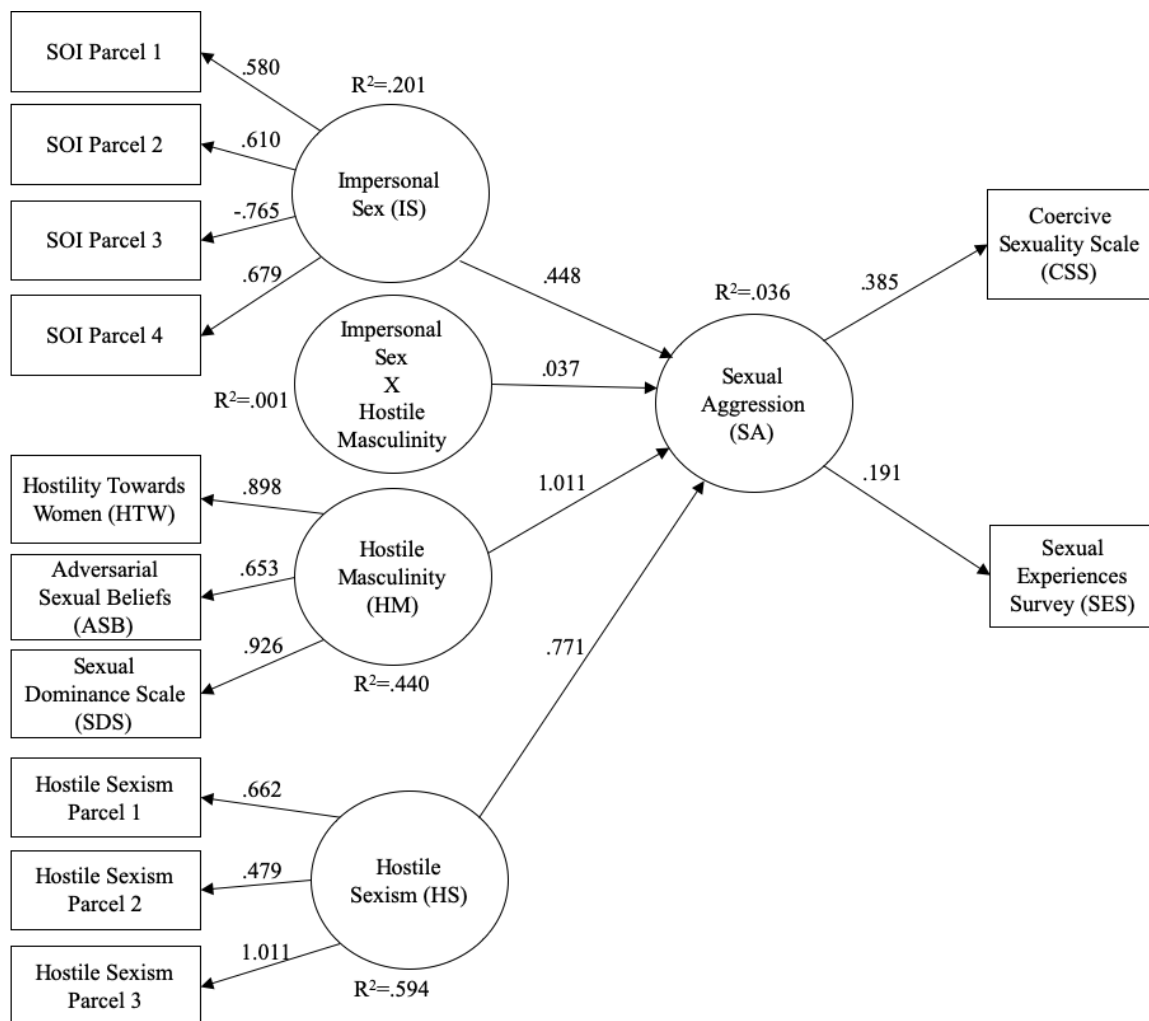


Figure 3. Structural model representing the addition of hostile sexism.

Table 11

*SEM results for hypothesis two (replacing hostile masculinity with hostile sexism).*

<b>Factor</b>	<b>Indicator</b>	<b>B</b>	<b>SE</b>	<b>Z</b>	<b>p</b>	<b>Standardized</b>
Sexual Aggression	CSS	1.00	0.00	—	—	0.34
Sexual Aggression	SES	1.13	0.44	2.54	.011	0.24
Impersonal Sex	SOI	1.00	0.00	—	—	1.00
CSS	CSS Parcel 1	1.00	0.00	—	—	0.60
CSS	CSS Parcel 2	1.80	0.34	5.32	.000	1.08
CSS	CSS Parcel 3	0.49	0.18	2.75	.006	0.29
CSS	CSS Parcel 4	0.10	0.07	1.37	.172	0.06
SOI	SOI Parcel 1	1.00	0.00	—	—	0.52
SOI	SOI Parcel 2	1.34	0.22	6.01	.000	0.69
SOI	SOI Parcel 3	-1.28	0.18	-7.10	.000	-0.67
SOI	SOI Parcel 4	1.47	0.21	6.91	.000	0.76
Hostile Sexism	HS Parcel 1	1.00	0.00	—	—	0.62
Hostile Sexism	HS Parcel 2	0.76	0.16	4.93	.000	0.46
Hostile Sexism	HS Parcel 3	1.70	0.37	4.64	.000	1.08
Sexual Aggression	Impersonal Sex	2.31	0.74	3.11	.002	0.91
Sexual Aggression	Hostile Sexism	1.05	0.44	2.36	.018	0.34
Sexual Aggression	HS <sup>a</sup> xIS <sup>b</sup>	4.04	1.34	3.03	.002	0.80

*Note.* <sup>a</sup>Hostile Sexism. <sup>b</sup>Impersonal Sex.



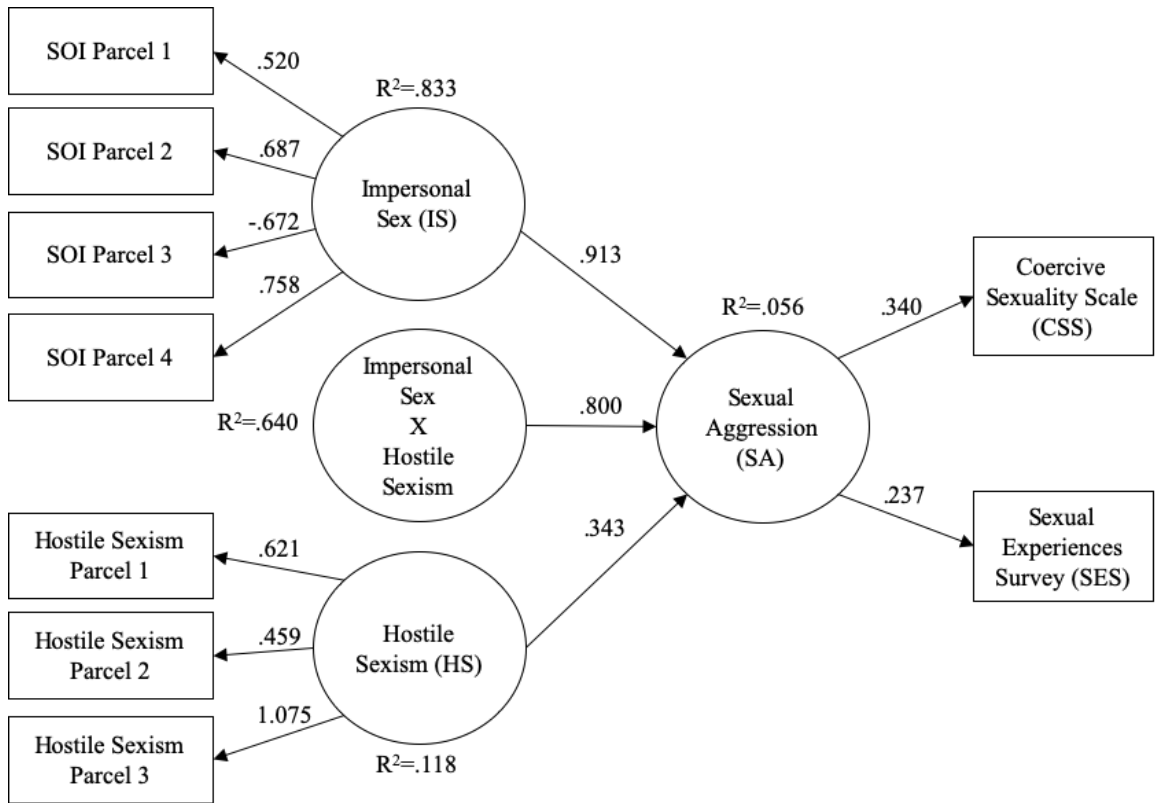


Figure 4. Structural model representing the replacement of hostile masculinity with hostile sexism.

Table 12

*Fit statistics for structural models*

	Original Model	Additive Model	Revised Model
RMSEA	.079	.063	.033
CFI	.919	.935	.952
TLI	.906	.926	.940
SRMR	.097	.092	.099
Chi-Square (p-value)	0.00	0.00	.010

## Chapter 4

### Discussion

This study involved two aims. The first aim was to identify the best method of measuring impersonal sex. We found that the SOI appears to be the best measure for this. The second aim of the study was to reassess the confluence model of sexual aggression considering current dating norms and trends in the literature. As predicted, we found that hostile sexism, and its confluence with impersonal sex, appears to be a better predictor of men's risk of sexual aggression than hostile masculinity. Though fit statistics do not always show the same result, almost all of the statistical outcomes of this study emphasized that the updated model is a better representation of sexual aggression than the original confluence model.

The drastic change seen in the interaction between impersonal sex and hostile sexism/hostile masculinity shows that an increase in impersonal sex along with an increase in hostile sexism/hostile masculinity can predict an increase in sexual aggression, also evidenced by the change in  $R^2$  across models. This relationship is strongest among impersonal sex and hostile sexism. It is important to note that the SOI is helpful in holistically representing impersonal sex, as SOI accounts for frequency of sexual encounters as well as attitudes that represent an impersonal sexual orientation. This conforms to deeply rooted gender norms, such as the expectation that men should be engaging in sex often and without becoming attached to their sexual partners, a portrayal that is also common in various forms of media. Subscribing to these gender norms and developing attitudes towards women as a result, can be identified as hostile sexism. As such, the interaction of these two variables represent the ingrained gender norms that may

lead to sexually aggressive behavior. In contrast, hostile masculinity represents distrust and defensiveness towards women, which could also establish an impersonal sexual orientation. However, hostile masculinity also represents a domineering attitude towards women, which does not represent the established gender norms that indicate women as gatekeepers of sex (Jackson, 2005). Instead, men who hold hostile masculine beliefs may be acting from a desire to punish women, rather than from the traditional gender norms belief that women are refusing sexual advances because they are expected to do so.

Hostile sexist attitudes, along with an impersonal sexual orientation, may be catalyzing instances of sexual aggression, more so than hostile masculinity. It may be that hostile sexism better represents the attitudes experienced by men who engage in sexually aggressive behaviors. Hostile masculinity may represent a different set of attitudes that occur internally or precede hostile sexism, while hostile sexism is the maintaining factor of the sexually aggressive behavior. Consider again the well-known situation that many college students experience: going home with or meeting a date they met online. Once the woman in this scenario declines the man's sexual advances, his hostile masculinity may activate hypersensitivity or defensiveness. Subsequently, the man's hostile sexist attitudes may drive the actual behavior of coercing the female, given that he may interpret the woman's refusal as a way of protecting her innocence, in line with the gender norms he subscribes to. The sexually aggressive behavior may be an attempt to alleviate the negative experience or the man's need to defend, as this enables him to assert his dominance over the woman. This outcome may condition this behavior and strengthen the hostile sexist attitudes experienced by the individual, leading to recurrence in sexually aggressive behavior.

Hostile sexism greatly improves the confluence model, which further emphasizes the trend in the literature that identifies sexual aggression perpetrated by an acquaintance as more common than sexual aggression perpetrated by a stranger. It is also important to note that although sexual aggression perpetrated by an acquaintance is more common, this does not lead to the conclusion that sexual aggression perpetrated by a stranger is non-existent (Bureau of Justice Statistics, 2014; Zawacki et al., 2003). Because sexual aggression perpetrated by a stranger makes up a significant portion of sexual aggression rates, the confluence model of sexual aggression and its subsequent modifications are still representative of the reality of sexual aggression perpetration: sexual aggression is carried out by both strangers and acquaintances. Our reassessed model may be more predictive of sexual aggression because it identifies the more common occurrence of sexual aggression perpetration via an acquaintance, representing the iterative nature of common sexual experiences as described in the introduction. These results also reiterate why previous modifications to the model have led to similar results (Abbey, 2011; Nguyen & Parkhill, 2014; Wheeler et al., 2002). Despite having added important variables to strengthen the confluence model of sexual aggression, the core constructs remained the same.

The results of this study have shown that an integrative approach to examining predictors of sexual aggression is necessary. We attempted this through our additive model, and although the model displayed good fit statistics, the model did not have better fit than the reassessed model proposed. Thus, there should be further investigation into how these constructs can be integrated to develop a model that is able to predict overall sexual aggression.

## Chapter 5

### Limitations & Future Directions

The current study was conducted with college men that predominantly identified as White, limiting the ability to generalize the results of this study. Future research and attempts at replication should be purposeful in recruiting a diverse sample that includes men recruited from the general population. The current study utilized only cross-sectional data, as participants were asked to answer surveys at a single time point. However, the endorsement of the constructs under study (i.e., hostile sexism, impersonal sex, hostile masculinity, etc.) could change throughout an individual's college career, which could lead to different relationships between those constructs. As such, future study designs should be longitudinal, as this could provide insight into how the relationship between these constructs change. We also relied on self-report for the collection of our data. Future studies should attempt to replicate our model using observational study designs, such as laboratory paradigms.

Of note, we excluded individuals who do not identify as male, as well as individuals who do not identify as exclusively heterosexual from our sample. We excluded non-males from our sample in an effort to adhere to the original confluence model. In addition, previous iterations to the model have only been tested using male participants. The intention of the confluence model of sexual aggression is to identify predictors of sexual aggression in males. As such, including non-males would stray from this intention and limit our ability to conduct model comparisons. Reasons for excluding non-heterosexual males are similar. The confluence model of sexual aggression has not yet been assessed for use with individuals who do not identify as heterosexual. As such,

model comparisons would not be accurate. In addition, gender norms, expectations, and common experiences may be different for these individuals. Future research should attempt to identify if the confluence model of sexual aggression can be applied for men who identify as non-heterosexual.

In addition, we did not include constructs from previous iterations of the confluence model (Nguyen & Parkhill, 2014; Parkhill & Abbey, 2008; Wheeler et al., 2002). Our main goal was to reassess the confluence model in its original form, utilizing only the core constructs of the model. However, previous iterations have been shown to improve the confluence model. Future studies should assess the confluence model by combining previous iterations, while also considering the results from the current study.

Throughout the methodology of this study, statistical decisions were made after thorough literature review. First, it was decided that the SOI would be utilized to identify impersonal sex, based on the CFA results and given that it is a well-established measure. As such, the number of lifetime sexual was excluded (because the first question on the SOI is very similar) and the three original questions from Malamuth (1986) were excluded based on CFA results. However, one could argue that these measures should still be part of the study, which would mean including them within the structural model.

Another important decision point involved the identification of the best estimator to use based on the makeup of our models, as well as how to deal with missing data. There are a variety of different estimators to choose from based on the type of data being worked with. Though WLSMV was technically designed to work with categorical data, it has been recommended for use with zero-inflated data as well (Muthen & Muthen, 2010).

One could argue that there are other potential estimators that could be used, though we determined WLSMV appears to be the best fit.

The chi-square test of the contemporary model was significant, indicating that the model is not able to reproduce population statistics accurately. However, the chi-square test is highly sensitive to sample size, and over-powered, often leading to type II errors (Raykov, 2000, 2005; West, Taylor, & Wu, 2012). As such, it is important to consider the entire array of fit statistics. Because the WLSMV estimator does not maximize the loglikelihood the AIC and BIC fit statistics are not available, which unfortunately limits the amount of information to base comparison off of.

One important result that should be noted is the existence of standardized estimates above 1.0 for several relationships. For instance, the relationship between the latent variable of hostile sexism and its third parceled indicator have a standardized estimate of 1.011 within the additive model, identical to the relationship between sexual aggression and hostile masculinity in the additive model. Similarly, a standardized estimate over 1.0 exists for the relationship between parcel 2 of the CSS and overall CSS scores. Finally, a similar relationship can be seen between parcel 3 of hostile sexism and overall hostile sexism scores. A standardized estimate over 1.0 can be indicative of multicollinearity, though this topic is not within the scope of this paper, and whether or not it negatively impacts model legitimacy is debated (Deegan, 1978). Deegan (1978) argues that standardized regression coefficients are often inaccurately viewed as analogous to correlation coefficients, though this is not the case, as standardized regression coefficients express a rate of change that is not numerically bound by  $\pm 1$ .



Item parceling can also lead to some bias in the data as a result of the number of parcels chosen for each measure (Matsunaga, 2008). Because subset-item parceling in particular can be prone to bias, it is recommended that measures are split into three parcels to minimize potential bias (Matsunaga, 2008). While parcels in this study were determined using CFAs, this may have potentially led to underfitting of the data, as some CFA results indicated value in the use of four parcels. However, fewer parcels naturally induce better fit, thus our data can be considered conservative and may actually represent better fit than indicated.

As previously mentioned, there have been several attempts to improve the original confluence model of sexual aggression. However, despite these advances, there continues to be a need for successful interventions aimed at decreasing risk for sexual aggression. Mainly, factors beyond impersonal sex and hostile masculinity have been highlighted as important and subsequently incorporated into intervention programs (Anderson & Whiston, 2005). Yet, each of the previous attempts have been additive in that, the core constructs of the model (impersonal sex and hostile masculinity) remain the same. As a result, these constructs remain essential in the prediction of sexual aggression and serve as the primary foci for intervention programs. Unfortunately, such interventions targeting men have the opposite of the intended effect, often inducing an increase in sexual aggression tendencies (Malamuth, Huppert, & Linz, 2018). Other researchers have found that interventions have minimal positive effects on actual behaviors, and some have found mixed results regarding the efficacy of interventions geared towards decreasing risk of sexual aggression (Newlands & O'Donohue, 2016). These minimal or unintended effects may be induced by the reactive nature of individuals who identify with hostile

masculine beliefs. If these men are presented with information about their behavior and subsequent guidance to modify their behavior, they may react in a defensive and hypersensitive way. As a result, men may tend to increase their sexually aggressive behaviors as a method of solidifying their dominance. It is imperative that interventions focus on a means of indirectly modifying behavior, as this may lessen the impact of reactivity. This can be acquired through interventions that identify and delicately challenge gender norms through the identification of implicit biases and the risks that arise as a result.

These results suggest that there is a need to reassess the confluence model of sexual aggression in an effort to better our understanding of sexual aggression, hopefully leading to improvement in interventions targeting sexual aggression risk. The contemporary confluence model of sexual aggression that we have identified in this study should be replicated by other researchers in an effort to identify the generalizability of the relationships identified before interventions are updated to reflect these changes.

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