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Psychopathic Traits, Gender, and Sexual Motivations: Paths to Sexual Coercion

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Psychopathic Traits, Gender, and Sexual Motivations: Paths to Sexual Coercion

by

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Dedication

This thesis is dedicated to those who have been so generous with their guidance and support to me throughout my academic career. To Dr. Edelyn Verona, my advisor and mentor, thank you for providing me with the direction, challenge, and encouragement needed to grow as a scholar and scientist. To my colleagues and friends Melanie Bozzay and Bethany Edwards, thank you for your endless practical assistance and emotional support during the creation of this thesis and beyond. To my parents Art and Lisa Hoffmann, for instilling and cultivating in me a sense of curiosity and for your unwavering support of and faith in my interests and pursuits, I cannot thank you enough. To my cat Kirby, thank you for providing me with unconditional love and joy every day. And finally, to my fiancée Ed Steck, thank you for your love and friendship, your patience and appreciation, and your tireless support and strength. Your impact on my life is immeasurable.

Table of Contents

List of Tables

List of Figures

Abstract

Although evidence suggests that both men and women perpetrate sexual coercion, the majority of work has traditionally focused on men as perpetrators and women as victims. Psychological factors, including psychopathic traits and sexual motivations, have been proposed to characterize sexually coercive men. However, the sparse existing research using female samples suggests that these models may not adequately characterize female sexual coercers. In particular, although there is evidence that sexual motivations may mediate the relationship between psychopathic traits and coercion perpetration, there is a dearth of information regarding gender as a potential moderator of these mediating paths. To improve our understanding of these relationships, the current study examines a moderated mediation model in which sexual motivations mediate the relationship between psychopathic traits and sexual coercion, with gender as a potential moderator of these mediation effects. To achieve this goal, 868 undergraduate participants were recruited to take part in an online survey. Study aims were accomplished using a combination of regression and path analysis. Results implicated Factor 2 traits as particularly important to male-perpetrated but not female-perpetrated coercion, and that this relationship was partially mediated by sexual power motives. In sum, our results support a conceptual model of male perpetration where men who are high in Factor 2 traits (impulsivity and behavioral dyscontrol) may engage in sexual coercion in an attempt to feel powerful. These results and their implications are discussed in the context of men and women's changing social roles, and how individual psychopathology may dovetail with social beliefs to generate sexually coercive behavior.

Introduction

Sexual coercion refers to a range of behaviors employed to elicit sex from an unwilling partner. Sexual coercion tactics can vary in type and severity, including arousal techniques such as persistent touching or flirting, verbal manipulation, leveraging authority, lying, intoxication, threats, and violent physical force. All tactics are designed to obtain sexual contact from a partner who has either already refused consent or is unable to provide consent due to incapacitation by alcohol, drugs, or other means (Schatzel-Murphy et al., 2009; Teten Tharp et al., 2013).

Sexual coercion is a serious social problem with a myriad of negative outcomes for those involved. It has been associated with severe physical and mental health consequences for victims, including PTSD, substance use, suicidality, and decreased relationship quality (Ackard & Neumark-Sztainer, 2002; Brown, Testa, & Messman-Moore, 2009; Collibee & Furman, 2014; Testa & Derman, 1999). In addition, perpetrators of sexual coercion often face serious consequences, including expulsion from school, incarceration, and the collateral consequences that accompany a conviction for a sexual crime (i.e., sex offender registry) (Teten Tharp et al., 2013; Struckman-Johnson, Struckman-Johnson, & Anderson, 2003).

Men and women have been found to engage in all severity levels of sexual coercion, from relatively benign seduction tactics (such as continuing to flirt with or non-sexually touch someone who has already denied consent), through verbal manipulation tactics (including lying, criticisms, threats, or blackmail) and intoxication tactics (using substances to incapacitate someone

or taking advantage of an intoxicated person), all the way to using physical force tactics (Schatzel-Murphy et al., 2009; Struckman-Johnson et al., 2003). Many researchers have theoretically grouped these tactics into verbal (arousal and manipulation) and non-verbal (intoxication and force) tactics (DeGue &Delillo, 2004). Men are disproportionally more likely to engage in high severity force tactics, be driven by motivations of sexual power and dominance, and exhibit callous, unemotional and socially domineering traits (Knight & Sims-Knight, 2002; Schatzel-Murphy et al., 2009). Far less is known about female perpetrated sexual coercion, but available work suggests statistical models that characterize male perpetrated sexual coercion show poor fit to female data (Schatzel-Murphy, 2011).

Although sexual coercion manifests across all demographics, in recent years it has become recognized as a particular problem on college and university campuses. Colleges and universities provide an environment in which sexual coercion is likely to occur due to the widespread prevalence of known sexual coercion risk factors, such as alcohol use (Abbey et al., 1998; Abbey et al., 2001; Testa, 2002), influential peer groups (Boeringer, 1996; Kaloff, 1993), casual sex and hook up culture (Abbey, Parkhill, Clinton-Sherrod & Zawaki, 2007; Sutton & Simons, 2014) and the young adult age of most undergraduate students (Abbey, Parkhill, BeShears, Clinton-Sherrod, & Zawacki, 2006; Senn, Desmarais, Verberg, & Wood, 2000). While many risk factors for sexual coercion perpetration in college have been identified, the ways in which these factors interplay with each other and with gender to characterize perpetrators is still unclear.

The current project seeks to extend prior work and examine gender differences in relationships between psychopathic traits (e.g., callousness, superficial charm, impulsivity, and antisociality) and sexual motivations (individuals' internal reasons for engaging in sexual behavior) among college students. In order to accomplish this goal, we propose the following broad aims:

(a) to test the validity of sexual coercion as a cohesive, unified construct or one involving distinct dimensions (e.g., verbal, non-verbal), (b) to examine the relationship between psychopathic traits and sexual coercion perpetration, both at the level of overall perpetration and at the specific tactic level, and gender differences in these relationships, and (c) to examine the mediating influence of sexual motivations (specifically power, relationship, and stress-relief motivations for sex) on the relationships between psychopathic traits and sexual coercion, and gender differences in specific mediated paths. By examining both moderating (gender) and mediating (sexual motivations) factors, we hope to more thoroughly characterize sexual coercion in men and women, as well as potentially lay the groundwork for the development of more accurately targeted treatment and prevention programs in the future.

The Spectrum of Sexually Coercive Behavior

There has been some question in the literature regarding the validity of a unified construct of sexual coercion that extends to include at least four individual tactics: seduction, manipulation, intoxication, and force tactics (see Adams-Curtis & Forbes, 2004). While these tactics may appear to be fundamentally different, all these behaviors represent a disregard for the victims' autonomy by failing to accept their refusal of sexual contact, and as such share a theoretical basis for combined consideration (Adam-Curtis & Forbes, 2004). Empirical research suggests that men who engage in verbal-only coercion tactics (i.e. seduction, manipulation) differ significantly from non-coercive men in a variety of key domains, including holding more hostile and adversarial beliefs about women, greater acceptance of rape myths, higher levels of psychopathic traits, lower empathy, and greater promiscuity. Further research suggests that not only are there distinct differences between non-coercive and verbally-coercive individuals, but that verbal-only coercers do not appear to differ significantly from individuals endorsing use of more severe non-

verbal tactics (i.e., intoxication, physical force) on measures of promiscuity, empathy, or psychopathic traits (DeGue, DeLillo, & Scalora, 2010). The fact that there is frequently a sizeable overlap between verbal and non-verbal coercion tactics within individuals further obscures attempts to draw a clear distinction (DeGue & DeLillo, 2004; DeGue, DeLillo, & Scalora, 2005; Struckman-Johnson et al., 2003; Testa & Derman, 1999).

Looking beyond perpetrator characteristics, both verbal and non-verbal coercion have been associated with negative outcomes for victims, including low self-esteem, subjective experiences of trauma, and internalizing problems, albeit differing in degree (Brown, Testa, & Messman-Moore, 2009; Testa & Derman, 1999). Simultaneously, other evidence suggests that differences in tactic severity, while not necessarily indicative of disparate underlying constructs, are meaningful to consider. Despite their similarities, individuals employing non-verbal (force or intoxication) tactics showed significantly greater endorsement of rape myths, hostile beliefs about women, and generalized aggression than the verbal-only group. Additionally, verbal-only coercive men experienced less childhood abuse than men who engaged in non-verbal tactics, suggesting there may be differences in environmental contributions to distinct forms of coercive behavior (DeGue & DeLillo, 2005).

The distinction becomes further obscured when considering the role of gender. While both men and women have been found to engage in all severity levels of coercion, there are significant differences in the frequency with which men and women use these tactics. While verbal tactics (e.g. persistent verbal pressuring, seductive words or behaviors) are the most frequently used by both men and women, men engage in non-verbal tactics significantly more often than women (Gidycz, Warkentin & Orchowski, 2007; Schatzel-Murphy et al., 2009; Struckman-John-

son et al., 2003). These differences may be due to a number of factors, although research suggests that differences in the way men and women are socialized regarding sex (e.g. Eaton & Matamala, 2014) and violence (e.g. Ross, 2011) may impact the expression of both sexually coercive behavior and the underlying processes that drive these behaviors.

Taken in sum, these findings suggest that while tactic severity is important to consider, there is a theoretical consistency to the broad umbrella of sexual coercion, which may be treated as a unified, albeit dimensional, construct. However, further investigation is warranted, especially when considering gender.

Psychopathic Traits and Sexual Coercion

Psychopathy is a heterogeneous personality construct typified by coldness and lack of empathy, shallow emotions, impulsive irresponsible lifestyle, and antisocial behavior (Cleckley, 1941/1988; Hare, 1996; Lykken, 1995). While the archetype of the "cruel criminal psychopath" as a distinct class of individuals prevails in popular depictions of the disorder, the majority of research indicates that psychopathy more closely fits the characteristics of a dimension, present or absent to a particular degree in all individuals, rather than a distinct class or taxon (Edens, Marcus, Lilienfeld, & Poythress, 2006; Guay, Ruscio, Knight, & Hare, 2007; Marcus, John, & Edens, 2004). Because of this dimensional character, the influence of psychopathic traits can be studied in a wide variety of different settings and populations, with even non-forensic, non-clinical samples showing considerable variability in psychopathy scores. Indeed, at subclinical levels, psychopathy scores have been linked to a wide variety of risky or undesirable behaviors such as substance abuse (Hemphill, Hart & Hare, 1994) intimate partner violence (Mager, Bresin & Verona, 2014) and sexual coercion perpetration (Kosson, Kelly & White, 1997; Muñoz, Khan & Cordwell, 2011).

Additionally, psychopathy is not a single monolithic construct, but rather a heterogeneous grouping of interpersonal, affective, and behavioral patterns which can be conceptualized in multiple ways. Historically, psychopathy dimensions have been conceptualized using a two factor model typified by the most commonly used assessment instrument in forensic populations, Hare's (2003) Psychopathy Checklist-Revised (PCL-R) and its progeny (e.g., PCL: Screening Version (PCL:SV); Hart, Cox & Hare, 2005), and a self-report version called the Self-Report Psychopathy Scale (Paulhus, Neumann, & Hare, in press). The two-factor model parses psychopathic traits into two larger factors. Factor 1 is composed of Interpersonal and Affective facets, defined by superficial charm, grandiosity, callousness, lack of empathy, and shallow emotional experience. Factor 2 is composed of Impulsive and Antisocial facets, primarily assessing disinhibition and lack of responsibility, risk taking and sensation seeking, and criminal behavior (Hare, 2003). Although the two main factors of psychopathy are typically highly correlated (Hare et al., 1990), each factor has a unique nomological net that is important in understanding differences in the ways that each factor influences behavior. The unique variance in Factor 1 traits is associated with reduced stress reactivity, reduced negative affect, and high social dominance and potency, whereas Factor 2 is associated with increased stress reactivity and impulsivity (Patrick, 1994; Patrick, 1995; Verona, Patrick & Joiner, 2001). While much of the relationship between violence and psychopathic traits may be explained by Factor 2 (Walsh & Kosson, 2008), Factor 1 may be uniquely important in the perpetration of instrumental, premeditated violent acts (Vitacco et al., 2006; Walsh, Swogger & Kosson, 2009; Woodworth & Porter, 2002).

There is a growing body of literature implicating psychopathic traits as risky for sexual coercion perpetration. Some researchers theorize that psychopathy may represent an alternative evolutionary strategy, which allows those high in psychopathic traits to successfully reproduce (e.g.

Harris et al., 2007). The theory suggests that through the use of early, promiscuous, and coercive reproductive strategies, individuals high on psychopathic traits are able to mitigate the reproductive disadvantages caused by the shortening of the lifespan due to their risky and antisocial behaviors. This theoretical framework provides a basis for the importance of studying psychopathic traits in terms of sexual coercion perpetration, and has been supported empirically. Studies of rapists (i.e. attackers of reproductive aged women), child molesters, and mixed offenders (those whose crimes include both rape and child molestation) have shown higher levels of psychopathic traits in those who perpetrated against adults compared to exclusive child molesters and non-sex offenders (Brown et al., 2015; Olver & Wong, 2006; Porter et al., 2000). Additionally, preliminary research suggests that psychopathic traits are positively associated with sexually violent and coercive behavior even after controlling for physical violence perpetration and general antisocial behavior (Caputo et al., 1999; Hoffmann & Verona, under review). These findings taken together suggest that it is critical to include psychopathic traits in considerations of risk factors for sexual coercion perpetration against adults.

Providing more support for this theoretical framework, total psychopathy scores and individual psychopathy factors have been associated with sexual coercion perpetration across a variety of severity levels in both men and women, offenders, community, and college samples (Camillieri & Quinsey, 2009; Centifanti, Thomson, & Kwok, 2015; Harris et al., 2007; Knight & Guay, 2006; Kosson, Kelley & White, 1997; Muñoz, Khan, & Cordwell, 2011). The interpersonal and affective traits represented by Factor 1 seem to play an important role in sexual coercion perpetration and related phenomena, especially in men. In one of the earliest studies to examine trait level associations between psychopathy and sexual coercion perpetration, Kosson, Kelly & White (1997) found that both Factor 1 and Factor 2 (as assessed by the PCL:SV) were positively

associated with sexual coercion perpetration in a sample of male undergraduates; however, Factor 1 explained a significantly higher proportion of the variance in sexual coercion perpetration scores. Although they did not include measures of psychopathic traits specifically, Bernat, Calhoun, & Adams (1999) found a positive relationship between traits associated with Factor 1 (i.e., callousness) and men's response to sexually coercive vignettes: College men high in callousness were less likely to have their sexual arousal inhibited as a result of the introduction of forceful coercion into a description of a foreplay scenario. Knight & Sims-Knight (2003)'s inclusion of a callous/unemotional path (traits associated with Factor 1) significantly improved the fit of Malamuth's (1991) two-path model of male perpetrated sexual coercion, which focused on antisocial processes (traits associated with Factor 2) in a male community sample. This improvement in fit may be further explained by Knight & Graham's (2015) findings that callous/unemotional traits are highly correlated with hypersexuality (i.e. highly elevated, disinhibited sexual appetite; Kafka, 2003), a sexual coercion perpetration predictor uniquely important to men (Schatzel-Murphy et al., 2009).

Finally, recent work suggests that both trait factors may work in tandem to increase risk for sexual coercion. A study by Marcus and Norris (2014) found that scores on traits related to the interpersonal and affective facets of Factor 1 (boldness and meanness) and traits related to the impulsive facet of Factor 2 (disinhibition) were all positively related to acceptability of manipulative sexually violent behavior in an all-male community sample. Importantly, these relationships were qualified by an interpersonal facet by impulsivity facet interaction, where men who were high in both traits were more likely to rate manipulative behavior as morally acceptable relative to men high on either trait alone. This latter finding indicates that some level of social potency or fearlessness may be necessary to propel the disinhibition associated with verbal attempts

to obtain nonconsensual sex. Interestingly, for severely violent behavior, only the impulsivity trait was associated with acceptability ratings, suggesting that this relationship may not be the same across all tactic types.

Taken together, these findings suggest that Factor 1 (the interpersonal-affective aspect of psychopathy) provides incremental contributions above Factor 2 (impulsive-antisocial tendencies) in explaining risk of sexual coercion perpetration in men, although more research examining the interaction of Factor 1 and Factor 2 is needed to clarify their unique and combined influences.

Psychopathic Traits and Gender

While psychopathic traits have been studied extensively in relationship to male perpetrated coercion, there is considerably less work on the factor-level relationships between psychopathic traits and sexual coercion perpetration in female samples. Only two studies have directly examined the unique contributions of Factor 1 and Factor 2 related traits to both male and female perpetrated sexual coercion (Muñoz, Khan, & Cordwell, 2011; Hoffmann & Verona, under review). One of these found significant gender differences in a sample of community dwelling substance users in the relationships between psychopathic trait facets assessed using the PCL:SV and sexual coercion perpetration against intimate partners (Hoffmann & Verona, under review). In this study, the Interpersonal facet of Factor 1 was positively associated with overall sexual coercion perpetration and low severity tactics in women, and the Antisocial facet of Factor 2 associated with high severity tactics in women, but not in men. In contrast, Muñoz and colleagues (2011) found no gender differences in overall patterns of relationships between psychopathic traits, measured using a self-report psychopathy scale, and coercion. Factor 1 was most strongly associated with sexual coercion for both genders, however analysis at the tactic level suggests that

there may possibly be gender differences present at high levels of tactic severity. Similar to Hoffmann & Verona, Muñoz, et al. found a Factor 1 x gender interaction high severity force tactics only, such that while men were equally likely to perpetrate forceful sexual coercion at high and low levels of Factor 1, women were only likely to perpetrate forceful sexual coercion at high levels of Factor 1. These two preliminary studies varied greatly in the types of samples (community drug users versus college students), and in the methods of assessing both psychopathic traits and sexual coercion behavior. Hoffmann & Verona assessed for sexual coercion only within the context of relationships using the Conflict Tactics Scale 2 sexual coercion subscale (Straus et al., 1996), whereas Muñoz and colleagues assessed for sexual coercion more generally using Struckman-Johnson et al.'s (2003) Post Refusal Sexual Persistence Scale. Nonetheless, both studies seem to suggest that gender and tactic severity may be important to consider together.

Another reason to consider gender includes evidence that psychopathic traits may manifest differently in males and females, with gender influencing the expression of psychopathy in behavior, temperament, and clinical presentation (Kreis & Cooke, 2011; Sprague et al., 2012; Verona & Vitale, 2006;). For example, women high in psychopathic traits may manifest these traits in more gender congruent behaviors and contexts, with clinicians rating them as more seductive and manipulative than males high in psychopathic traits, who are typically characterized as more violent (Kreis & Cooke, 2011). Women may be more likely to express psychopathic traits through violence and manipulation of family members, children, or romantic partners as opposed to strangers or associates, and may engage in more stereotypically "feminine" forms of aggressive behavior, such as verbal cruelty and manipulation (Verona & Vitale, 2006). These reported manifestations of psychopathic traits in women are consistent with descriptions of female-perpetrated sexual coercion involving more subtle forms of sexual coercion.

Although the research regarding the relationships of psychopathic traits to female perpetrated sexual coercion in particular is currently sparse, work in the broader interpersonal violence literature may help guide interpretation of the existing sexual coercion work, and suggest avenues for further study. At least one study identified gender differences in psychopathic trait manifestations in men and women's enactment of physical intimate partner violence (IPV). Mager, Bresin & Verona (2014) found that while both Factor 1 and Factor 2 were associated with IPV perpetration for both genders, Factor 1 was more strongly associated with physical IPV perpetration in men than women. These findings lend support to existing conceptualizations of IPV which place greater importance on dominance and control as a motivating factor for male-perpetrated IPV than female-perpetrated IPV, since Factor 1 is more strongly linked to instrumentality and control in use of violence (Vitacco et al., 2006; Walsh, Swogger & Kosson, 2009; Woodworth & Porter, 2002). In sum, the suggestion is that male perpetrated violence is more likely to be instrumental and more severe than women's use of violence.

Moderated Mediation: Sexual Motivations and Gender

It is important to study the motivations that underlie sexual coercion risk factors like psychopathy. Existing literature on sexual coercion suggests that sexual motivations may provide insights into sexually coercive behavior. Sexual motivations refer to the conscious reasons that individuals choose to engage in and enjoy sexual activity; they can be externally focused (such as the desire to reproduce or to please a partner) or internally focused (such as the desire to feel physical pleasure or emotional closeness). Although sexual motivations apply to consensual situations, studies have shown sexual motivations to differentially relate to coercive sexual behaviors and their consequences, particularly in men (Cooper, Shapiro & Powers, 1998; Hill, 2003). Across multiple studies, the desire for impersonal sex and sexual dominance motivations have

consistently emerged as factors associated with male perpetrated sexual coercion (Brousseau, Hebert & Bergeron, 2012; Hill, 2003; Knight & Sims-Knight, 2002; Malamuth et al., 1996; Zurbriggen, 2000).

In contrast, the role of sexual motivations in female perpetrated sexual coercion is less clear, with mixed results. Some research has found no effects of gender on the association of sexual motivations and sexual coercion perpetration, with dominance motivations emerging for both male and female-perpetrated sexual coercion (Brousseau et al., 2012; Shea, 1998). Others, however, have found support for gender differences in these associations. Hill (2003) found that motivations of sexual dominance best described coercive men, but not coercive women, who were best characterized by high endorsement of sex as a stress-relief technique. These findings suggest that while coercive men are characterized by control and domination motives, coercive women endorse emotion regulation motives, although these findings have yet to be replicated (Brousseau et al., 2012). In line with these findings, Zurbriggen (2000) found that while high dominance-power motivation was predictive of sexual coercion perpetration by men, high intimacy-affiliation was predictive of sexual coercion perpetration by women. Taken in sum, these finding seem to suggest that not only is there heterogeneity in the motivating factors that relate to sexual coercion perpetration behaviors, but that there may be significant gender differences in how these motivations relate to sexual coercion, which have yet to be fully explored.

Further work includes evaluating sexual motivations as potential mediators of the psychopathy-coercion relationship. In their widely cited Confluence Model, Malamuth and colleagues (1991; 1996) found that hostile masculinity (including sexual dominance) mediated relationships between Factor 2-related traits (irritability, impulsivity, and emotional dysregulation) and sexual coercion perpetration in men. Work by Bourg (2001) also found sexual dominance

motivations had a mediating effect on the relationship between general antisociality (akin to Factor 2) and sexual coercion perpetration in men. Additionally, Knight & Sims-Knight (2003) found that aggressive sexual fantasy (including sexual dominance) mediated the influence of callous and unemotional traits (akin to the affective features of Factor 1) on sexual coercion in a sample of community men. This suggests that desire for sexual power and dominance is a potentially-important mediating factor in the relationship between both Factor 1 and Factor 2 traits and sexual coercion perpetration for men. Combined with research suggesting that Factor 1 may be particularly risky in terms of sexual coercion for men (e.g. Kosson, Kelly & White, 1997), these mediation models paint a picture of male perpetrators high on psychopathic traits as motivated to perpetrate sexual coercion by a need to exert sexual power and a willingness to use force to achieve these goals.

Less work has examined the ways in which sexual motivations mediate relationships between psychopathic traits and sexual coercion perpetration in women; however, existing literature suggests that male models which include sexual dominance as a mediating factor are a poor fit in female samples (Schatzel-Murphy 2009; 2011). Existing literature highlighting the importance of emotion regulation (Hill, 2003) and emotional connection (Russell & Oswald, 2001; Zurbriggen, 2000) motivations in relationship to sexual coercion for women suggest that unlike men, women's perpetration may relate to emotional needs or mood regulation, primarily using verbal, gender-congruent tactics. These conceptual models fit within existing paradigms of men and women's expression of psychopathic traits and antisocial behavior as well, emphasizing the use of gendered expressions of aggression and observed gender differences in expression of non-sexual IPV (Archer, 2000; Mager, Bresin & Verona, 2014; Ross, 2011).

Given the small amount of literature regarding gender differences in the relationship of psychopathic traits to sexual coercion perpetration, it is important to understand the mediating role of sexual motivations within these relationships. This work has the potential to inform interpretations of the ways in which psychopathic traits manifest themselves in men and women's enactment of not only sexual coercion, but in the broader context of aggression as well.

Proposed Study: Aims and Hypotheses

In light of the review of the literature, the current study proposes to examine the intersection of gender, psychopathic traits and sexual motivations in characterizing sexual coercion perpetration in college students (see Figure 1). In particular, we propose the following aims and hypotheses and will use factor analysis, regression and path analysis techniques to analyze the data.

Aim 1: First, we will attempt to validate the theoretical construct of sexual coercion as being unitary and dimensional in nature. We propose the following hypotheses:

Hypothesis 1.1: In light of findings which distinguish both verbally and non-verbally coercive individuals from non-coercive individuals on meaningful outcome measures (DeGue & DeLillo, 2004; DeGue, DeLillo, & Scalora, 2005), we expect that factor analysis of sexual coercion tactics will reveal a single overarching factor to be the best fit the available data.

Hypothesis 1.1a: Further, if a two-factor model is forced upon the data, we predict that two factors will be formed based on the division of verbal tactics (seduction and manipulation) and non-verbal tactics (intoxication and force), representing the severity spectrum of behavior.

Hypothesis 1.2: Given the overlap in verbal and non-verbal coercive tactics (DeGue, DeLillo, & Scalora, 2010), and the theorized dimensional character of the construct (Struckman-

Johnson et al., 2003), we predict that the four individual coercion tactics (arousal, manipulative, intoxication, and force) will correlate with each other, and with additional relevant constructs. We predict that the strength of these correlations will vary based on theoretical level of severity (from arousal to manipulative to intoxication to force).

Aim 2: Next, we seek to examine relationships between psychopathic traits and sexual coercion perpetration in men and women in the sample. We propose the following hypotheses:

Hypothesis 2.1*:* Predicated on previous findings highlighting the connection between psychopathic traits and sexual coercion perpetration (e.g. Harris et al., 2007, Knight & Guay, 2006), we expect both psychopathy factors, Factor 1 (interpersonal-affective) and Factor 2 (impulsive-antisocial), to be positively related to sexual coercion perpetration. In addition, we expect a Factor 1 x Factor 2 interaction, given evidence that Factor 1 traits may enhance links between Factor 2 and sexual coercion (Marcus & Norris, 2014).

Hypothesis 2.2: Bearing in mind the conflicting nature of the evidence regarding gender differences (Muñoz, Khan, & Cordwell, 2011, Hoffmann & Verona, under review), we hypothesize that gender will act as a moderator in the relationship between psychopathic traits and sexual coercion perpetration. Specifically, we hypothesize that the relationship between Factor 1 and sexual coercion will be stronger in men than in women (Schatzel-Murphy et al., 2011.). Additionally, we hypothesize that the relationship between Factor 2 and sexual coercion perpetration will be stronger in women than in men, due to the connection between Factor 2 and emotional dysregulation (Verona, Patrick, & Joiner, 2001), and the potential importance of sexual coercion as a regulatory strategy in women (Hill, 2003).

Hypothesis 2.3: Given the evidence suggesting that men and women may engage in different tactic types with differential frequency (e.g. Struckman-Johnson et al., 2003), possibly due to differences in manifestation of psychopathic traits (e.g. Verona & Vitale, 2006), we hypothesize that gender will moderate the relationship between psychopathic traits and tactic types. Specifically:

> ***Hypothesis 2.3a:*** In men, we hypothesize that both psychopathy factors, Factor 1 and Factor 2, and their interaction, will be positively related to sexual coercion perpetration for all tactic types.
>
> ***Hypothesis 2.3b:*** In women, we hypothesize that Factor 2 will be positively related to sexual coercion perpetration for all tactic types. Given the conflicting state of the literature regarding the relationship of Factor 1 to sexual coercion perpetration in women (Muñoz, Khan, & Cordwall, 2011), we hypothesize that Factor 1 will be associated with overall coercion perpetration in women, but that this relationship may potentially differ as a function of tactic severity.

Aim 3: Based on existing literature showing evidence of the relationship between psychopathic traits and sexual motivations (Knight & Sims-Knight, 2003; Malamuth et al. 1991; Schatzel Murphy et al., 2009), and sexual motivations and sexual coercion (Brousseau et al., 2012; Hill, 2003; Zurbriggen, 2000), we propose to test a moderated mediation model wherein sexual motivations at least partially mediate the relationship between psychopathic traits and sexual coercion perpetration (see Figure 1b). Based on the literature, we propose the following hypotheses:

Hypothesis 3.1*:* We hypothesize that the relationship between psychopathic traits and sexual coercion will be at least partially mediated by sexual motivations in the full sample.

Hypothesis 3.1a*:* Specifically, given the positive association of Factor 1 with dominance (Patrick, 1995) and the negative association of Factor 1 with empathy and emotional needs (Cleckley, 1941/1988; Hare, 1996), we hypothesize that only Power motivations will mediate the relationship between Factor 1 and sexual coercion perpetration. Additionally, we hypothesize a negative relationship between Factor 1 and Emotional Value (i.e., the need to feel valued by one's partner) motivations, which may in turn relate to higher sexual coercion perpetration due to callousness and lack of need for connection.

Hypothesis 3.1b*:* Bearing in mind the observed relationship between Factor 2-associated traits and sexual dominance (e.g. Malamuth, 1991), and the relationships between Factor 2 and emotional dysregulation (Patrick, 1995), we hypothesize that both Power and Stress Relief sexual motivations will mediate the relationship between Factor 2 and sexual coercion perpetration (although we suspect this effect may be moderated by gender—see below).

Hypothesis 3.2*:* Gender will moderate the mediating influence of sexual motivations, with specific hypotheses for the mediated paths in the model.

Hypothesis 3.2a*:* In light of the discussed literature highlighting the importance of sexual dominance as a potential mediating factor for males (e.g. Knight & Sims-Knight, 2003; Malamuth 1996), we hypothesize that for men, the relationships between both psychopathic traits (Factor 1 and Factor 2) and sexual coercion perpetration will be mediated by Power motivations.

Hypothesis 3.2.b.: In women, we hypothesize that the relationship between Factor 2 and sexual coercion perpetration will be mediated by Stress Relief and Emotional

Value (i.e., the need to feel valued by one's partner) motivations, reflecting the possible role of sexual coercion as an emotion-driven behavior for women in particular (Schatzel-Murphy 2011, Zurbriggen, 2000). Given the mixed findings regarding the association of Power motivations with sexual coercion perpetration in women (Brousseau et al., 2012; Hill, 2003; Zurbriggen, 2000), it is also possible that Power motivations will mediate the relationships between both Factor 1 and Factor 2 with sexual coercion perpetration in women as well.

Method

In order to fulfill these aims and test the proposed hypotheses, the study employed a cross-sectional research design using data collected via an online survey of undergraduate students at USF. The survey was prepared and disseminated using Qualtrics software (Provo, UT).

Sample Recruitment

Participants were recruited through both the USF psychology subject pool and through a variety of wide-reaching advertising techniques, including both on-campus flyering and electronic communication. Participants were restricted to undergraduate students 18 years or older. We first conducted a pilot data collection to identify any problems or improvements to survey design and gain a sense of overall demographic participation, as described below.

Pilot phase. First, a pilot group of students (n=505; 77% women) were recruited through the psychology subject pool using the SONA recruitment system in order to examine the distribution of sexual coercion perpetration scores, and other variables of interest. The pilot participants were exclusively composed of students enrolled in at least one psychology class. In order to facilitate candid responding, no identifying data (such as name, phone number, or email address) were required for participation in the pilot phase. Participants who wished to be contacted for further research were given the option to leave their email address, but it was not required.

The SONA pilot sample appeared to be largely representative of the incoming USF student body in terms of race and ethnicity (although disproportionately female and White[1] – see Table 1).

Primary data collection. Following the pilot phase, a sample of 868 (54% women) college students was collected through both the psychology subject pool SONA recruitment, as well as campus-wide outreach efforts, including posted flyers, emails sent through departmental/college listservs (e.g., Public Health, Engineering, Arts and Sciences), tabling at campus events (such as Bull Market), and advertisements in online USF communications (such as Note-a-Bull Newsletter). In this larger data collection phase, we aimed to contact a sample of the USF student body that was representative in terms of relevant demographic variables such as race/ethnicity, year in school, gender, and financial aid status. In order to facilitate participation from diverse groups of participants, these recruiting efforts were both broad and focused in scope, including both widespread flyering/emailing, and outreach to specific student groups (e.g. Greek Life, student athletes). Participants included both men and women of any ethnic group or sexual orientation, and there were no class enrollment or major qualifications for this data collection. In addition, participants were also collected through the SONA system in order to supplement the main phase data. There were no specific exclusion criteria other than failure to meet the inclusion criteria listed above. After the data cleaning process, a final sample of 778 valid cases remained. Of the 778 cases, 42.93% were collected through the SONA system, with the remaining 57.07% collected through the general campus advertising efforts. Because the hypotheses in Aims 2 and 3

[1] Note: While participants in the SONA pilot sample had the option to specify both ethnicity (Hispanic or Non-Hispanic) and race, the USF Factbook data considers Hispanic to be a racial, rather than ethnic category. As such, it is possible that many of the students endorsing White as their race in the SONA sample are subsumed under the Hispanic category of the USF Factbook data, artificially inflating the disparity.

involved tests of gender moderation based on a binary gender paradigm, an additional 15 participants who identified as a gender other than cismale or cisfemale were excluded from those analyses, leaving a final *n* of 763 for Aims 2 and 3. Demographics analysis indicated that this sample also largely reflect the overall demographic makeup of USF students (with similar caveats present as in the pilot sample – See Table 1 for a detailed breakdown of demographics). The majority of participants were single (*n*=607, 78.00%), with a mean age of 20.88 (*SD*=3.73).

Measures

Demographic information. In order to most accurately characterize the sample, participants completed a brief questionnaire assessing demographic variables such as age, race, gender, sexual orientation, relationship status, year in school, and campus group affiliations (e.g., Greek, athletics).

Sexual coercion perpetration. Sexual coercion perpetration was assessed using a modified version of the Post-Refusal Sexual Persistence Scale (PSP; Struckman-Johnson et al., 2003). Each participant was asked to indicate whether he or she had employed each of 19 coercive tactics to obtain or attempt to obtain sexual contact *after the partner had already refused* since age 16. Sexual contact was operationally defined for participants as "Sexual fondling or touching, oral-genital contact, or vaginal/anal penetration by any object or body part". The 19 tactics described by Struckman-Johnson and colleagues can be organized into four domains: Sexual Arousal (3 items – e.g. "I removed some of my own clothing to try and arouse them"), Emotional Manipulation and Deception (8 items – e.g. "I told them I would blackmail them"), Exploitation of the Intoxicated (2 items – e.g. "I took advantage of the fact that they were already drunk or high"), and Physical Force, Threats, or Harm (6 items – e.g. "I threatened them with a weapon"). Participants had the option to choose more than one tactic for each domain. Subscale scores were

obtained by summing the number of tactics endorsed for that particular domain. Scores for each tactic domain were then added together to obtain a total perpetration score, which served as our main dependent measure. Reliability in the sample was variable, with α=.80 for total perpetration, α=.86 for arousal tactic perpetration, α=.64 for manipulation tactic perpetration , α=.53 for intoxication tactic perpetration, and α=.79 for force tactic perpetration. It is worth noting that low internal consistency observed in the intoxication tactic subscale may be partially due to the small number of items in the subscale (j=2; Cortina, 1993). The relative heterogeneity of items on the manipulation subscale, which includes a wide variety of behaviors may also account for low internal consistency of this subscale in particular. More generally, total scores on the PSP have been shown to correlate highly with theoretically relevant constructs including callousness, antisociality, mate poaching behavior, and sexual coercion victimization (Centifanti, Thomson & Kwok, 2015).

In addition, to provide concurrent validity for analyses in Aim 1 (hypothesis 1.2), an additional measure of sexual coercion, focused solely on relationship violence, was computed using the 7 item sexual coercion subscale of the Conflict Tactics Scale-2 (CTS2; Straus et al., 1996). The CTS2 is a 78 item self-report measure which assesses frequency of various violent behaviors perpetrated or experienced in their most recent relationship. For each behavior, participants first rated how often they themselves perpetrated the behavior, and then how often their partner perpetrated the behavior against them in the past year. Items are scored on a scale from 0 (never) to 6 (more than twenty times), and then converted to a midpoint scoring system (e.g. “3-5 times” is rescored to “4”) as per Straus et al.’s recommendation (1996). The subscale can be further divided into minor (3 items) and severe (4 items) perpetration scores to allow for more fine-grained analysis at the tactic level. Reliability in the sample was slightly low for total

sexual coercion perpetration, α=.61, likely reflecting heterogeneity across minor and severe items of the scale. In support of this, reliability for minor perpetration was acceptable (α=.71) and for severe perpetration was excellent (α=.98).

Psychopathic traits. Psychopathic traits were measured using the Self Report Psychopathy Scale – III (SRP-III; Paulhus, Neumann, & Hare, in press). This 64 item self-report questionnaire was specifically designed to measure the four facets of psychopathy in a manner analogous to the PCL-R four-facet model (interpersonal, affective, impulsive, and antisocial facets). Each item is rated on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). For the sake of conciseness in analyses and because the majority of the research on psychopathy has focused on the two main factors, the four facets were combined to calculate Factor 1 scores (Interpersonal Manipulation and Callous Affect subscales) and Factor 2 scores (Erratic Lifestyle and Criminal Tendencies subscales) for use in Aims 2 and 3. The SRP has been found to have good convergent and divergent validity in various populations, including college students (Mahmut, Menictas, Stevenson, & Homewood, 2011; Neal & Sellbom, 2012). Reliability in the sample was good, with α=.88 for Factor 1 and α=.85 for Factor 2.

Sexual motivations. Sexual motivation was measured using the Affective and Motivational Orientation Related to Erotic Arousal Questionnaire (AMORE; Hill & Preston, 1996). The AMORE is a 62 item empirically derived self-report measure, which taps eight different motivating factors for engagement in sexual activity, which can be combined into five total scales. The first two scales measure Emotional Value: to feel emotionally valued by one's partner (7 items) and to express one's own emotional value for one's partner (8 items). The other scales assess Stress-Relief motivations (to relieve one's own stress or reduce negative emotion and to relieve

partner's stress or negative emotion-16 items total), Power motivations (express one's own sexual power, experience partner's sexual power-20 items total), physical pleasure motivations (5 items), and procreation (6 items). Each item is rated on a 5-point Likert scale ranging from 1 (not at all true) to 5 (completely true). For the purposes of this study, the Procreation and Physical Pleasure scales were be dropped from the questionnaire due to a lack of theoretical relevance to the proposed research questions and to shorten the survey length. Only the self-directed versions of the Emotional Value, Power, and Stress Relief scales were included in the model. Reliability in the sample was excellent, for Emotional Value α=.92, Power α=.94, and Stress α=.96.

Alcohol use. Because of its well-documented relationship with sexual coercion perpetration (see Testa, 2002 for a review), alcohol use was assessed using the Alcohol Use Disorders Identification Test (AUDIT; Babor et al., 1992). This brief 10-item scale measures the frequency and amount of alcohol consumption typical of a participant's drinking habits as well as consequences of drinking behavior (e.g. "How often have you failed to do what was normally expected of you because of drinking?"). Each item offers 5 response choices, each corresponding to a point value from 0-4, which are then summed to create a total score ranging from 0-12. Higher scores indicate higher likelihood of problematic drinking. Reliability in the sample was good, with α=.82.

Sexual coercion victimization. There is significant overlap between sexual coercion victimization and sexual coercion perpetration, with each acting as a significant predictor of the other (Brousseau et al., 2011). Because of this overlap, sexual coercion victimization was assessed using the PSP also (Struckman-Johnson et al., 2003). Using a similar format as other violence scales (Straus et al. 1996), participants were first asked about their perpetration behaviors for each tactic as described above, followed by an item assessing the frequency with which they

have experienced victimization by that tactic since age 16. Reliability in the sample was good (α=.86).

Number of sexual partners. In order to account for both the greater opportunity to engage in sexual coercion associated with a higher number of partners, and in an attempt to account for any overlapping variance in the three sexual motivations due to the individual's general level of sexual desire, number of lifetime casual sex partners was included as a covariate in all analyses. This item, adapted from the Sociosexual Orientation Inventory – Revised (Penke, 2011) specifically asks about number of partners with whom the participant has engaged in sexual intercourse with no intention of pursuing a long term relationship, but does not specify vaginal/anal penetration specifically, leaving the definition somewhat broad.

Physical aggression. In order to control for general aggressiveness toward partners, physical IPV perpetration scores were derived from the CTS2 (see above for a detailed scale description and scoring). The physical assault subscale contains 12 items capturing the frequency of acts of physical aggression (such as grabbing, hitting, or using a weapon) perpetrated against an intimate partner in the past year. The physical assault subscale can be further divided into minor (5 items) and severe (7 items) perpetration scores, which were used to examine convergent validity in Aim 1. Reliability in the sample was variable, with Cronbach's alpha values of α = .72 for total physical assault perpetration, α=.78 for severe perpetration, and α=.46 for minor perpetration.

Procedure

After selecting the survey for participation, students were provided with informed consent information and given the option to discontinue participation. Participants then answered

survey questions in an online self-report format, taking 20-25 minutes to complete. After completing the survey, participants were provided with a summary of the study's purpose and objectives and contact information for the principal investigator. Information regarding mental health and sexual violence support resources including the USF Psychological Services Center, USF Center for Victim Advocacy and Violence Prevention, and local community resources were provided to participants as part of the final summary.

In order to reduce the risk of any breach in confidentiality, all participants were assigned an ID number for use in the survey database. Identifying data from those who provided it was stored separately from substantive survey data, and can only be connected to the assigned ID number through an ID "key" document that is password protected on a password-accessible computer and kept in a locked room. Students were informed that their data are confidential, and that their status as research participants protects their information from mandatory sexual misconduct reporting laws (University of South Florida, 2015). To further reassure participants, we obtained a Federal Certificate of Confidentiality.

SONA participants were compensated for their time with 1 SONA credit for completion of the total survey. For non-SONA participants, after completing the survey they were provided with an alphanumeric code and the URL for a completely separate website where they could enter the code and their email address for a chance to win one of forty $75 Amazon gift cards. The code was not specific to each individual survey, thus protecting anonymity. By using this procedure, we allowed anonymous survey takers to be included in the compensation raffle as well as preventing non-participating students from simply entering their email without first completing the survey, or students "ballot stuffing" by entering multiple email addresses. All data collected

were assigned an ID number and stored on secure electronic servers accessible only to the study team.

Data Analysis

Pilot findings. First, the pilot data were analyzed to help inform subsequent data collection procedures. Based on participant feedback, longer questionnaires (such as the SRP, CTS2, and AMORE) were reformatted in order to present scale anchor points multiple times within the measure. Additionally, the category "I do not drink alcohol" was added to the AUDIT items per participant request. Finally, an additional scale not used in the current project (the Illinois Rape Myth Acceptance Scale (IRMAS; McMahon & Farmer, 2011) was dropped from the survey in response to concerns about survey length. In response to the skewed gender distribution in the pilot sample (77% female, n=352), the main data collection involved limiting SONA recruitment to men only for two months (and opening it to all genders for several months before that) in order to obtain an adequate proportion of males.

Data cleaning and preliminary analyses. As part of the data cleaning process, the data were checked for duplicate cases, and cases which showed evidence of repeated participation by a single participants. Any cases which shared the same email address (provided for future participation, if desired) were treated as belonging to the same participant. In such cases, the response which occurred first chronologically (based upon survey end time) was retained for analysis and the other excluded. Five such duplicate cases were identified and excluded from analysis. Cases with completion times in the top 5% of cases (greater than 97 minutes) and those with completion times of less than ten minutes (estimated minimum time for valid completion) were assumed to reflect non-valid responding, and removed. Following cleaning of the data, all relevant scores

were calculated for each measure as described above. Descriptive statistics, zero-order correlations, and tests of gender differences were computed for all variables in order to describe the sample and determine the distribution of relevant variables (See Tables 1, 2). There were no gender differences present in any of the demographic variables.

Hypothesis testing. Aim 1 was accomplished by using Exploratory Factor Analysis (using principal axis factoring and promax rotation), followed by Confirmatory Factor Analysis using Robust Maximum Likelihood estimation to determine the underlying factor structure of the PSP. Subscale scores for each of the four individual tactic domains (Arousal, Manipulation, Intoxication, and Force) were entered into the model. Eigenvalues greater than 1 and visual examination of the scree plot were used to determine the optimal number of factors. Cross-loading of subscale scores was defined as any subscale loading 0.40 or higher on more than one factor. In order to complete hypothesis 1.1a, zero order correlations were performed, and correlation coefficients compared using Fisher's *r* to *z* transformation.

Aim 2 hypotheses 2.1 and 2.2 were tested using hierarchical negative binomial regression (due to significant skewness and overdispersion in the main dependent variable of PSP total perpetration scores). Because ethnicity was found to be correlated with the dependent variable, this was entered as a covariate along with PSP victimization, AUDIT, and CTS physical assault perpetration scores, followed by the Factor 1, Factor 2, and gender main effects, the two-way interaction terms (Factor 1 x Factor 2, Factor 1 x gender, Factor 2 x gender), and the three-way interaction term (Factor 1 x Factor 2 x gender). All terms were grand mean centered prior to inclusion in the model. Analyses for Hypothesis 2.3 were performed in the same manner, using verbal and non-verbal coercion scores that were derived from Aim 1 factor analyses, instead of overall sexual coercion score as the dependent variables.

Hypotheses in Aim 3 (moderated mediation model of the relationships between psychopathic traits, sexual motivations, and sexual coercion perpetration) were tested using path analytic modeling conducted using MPlus 7.2 (Muthen & Muthen, 1998-2012). In order to maximize the amount of useable data given the continuous DV, Robust Maximum Likelihood estimation was used to account for the violations of normality in the dependent variables when possible (i.e. total and verbal sexual coercion) (Lei & Lomax, 2005). Because of the low base rate and extreme skewness of the non-verbal coercion variable, this variable was dichotomized and the models for this tactic were run using a Weighted Least Squares – Mean and Variance adjusted estimation (Kline, 2011). In order to test Hypothesis 3.1 (examination of the mediating effect of sexual motivations), a model that included both direct effects from Factor 1 and Factor 2 to sexual coercion perpetration, covariances between the two psychopathy factors, and all the indirect effects from psychopathy factors to sexual coercion perpetration through sexual motivations (see Figure 1a) was compared with a nested model in which the two direct paths were constrained to zero, with the rest of the paths free to vary (see Figure 1b). Model fit was examined using multiple indices, including Comparative Fit Index (CFI; Bentler, 1990), model-based chi-square value (Joreskog, 1969), and the Root Mean Square Error of Approximation (RMSEA; Steiger, 1990). Satorra-Bentler chi-square difference tests (Sattora & Bentler, 2001) comparing the direct path-constrained model to the unconstrained model were employed to determine evidence of mediation (i.e., failure to show significant decrease in model fit suggests that the direct relationship between psychopathy factors and sexual coercion are explained by the indirect paths through the sexual motivation mediators). These analyses were performed separately for total perpetration and the resulting verbal and non-verbal coercion scores.

Finally, multi-group modeling techniques were employed to examine the moderating effect of gender on paths within the models or potential mediation effects for total, verbal, and non-verbal coercion (Hypothesis 3.2). A model in which all paths were constrained to be equal between genders was compared to a model in which all paths were free to vary across gender. As in Hypothesis 3.1, Satorra-Bentler chi-square difference tests were used to detect evidence of improvement of fit from the fully constrained models to the unconstrained models, and therefore moderation by gender in the models.

Results

Bivariate Correlations and Descriptive Statistics

Bivariate correlations and detailed descriptive statistics for the sample may be found in Tables 2 and 3. 26.74% of the sample (n=199, 89 female) endorsed at least one incident of lifetime sexual coercion perpetration, with 167 (21.89% of total N, 77 female) reporting the use of arousal tactics, 98 (12.84% of total N, 35 female) of manipulation tactics, 22 (2.88% of total N¸5 female) of intoxication tactics, and 15 (1.97% of total N, 6 female) of force tactics. Consistent with existing literature (Struckman-Johnson et al., 2003), men scored significantly higher on measures of total sexual coercion (t=2.94, p<.01), arousal tactic coercion (t=1.97, p=.05), manipulation tactic coercion (t=3.03, p<.01), and intoxication tactic coercion (t=2.77, p<.001). Interestingly, men and women did not differ on their use of force tactics (t=1.26, p=.21), likely due to the low base rate of this behavior in the sample. In terms of independent variables, men scored

significantly higher than women on all three sexual motivation scales (Emotional Value: t=2.04, p=.04; Power: t=4.46, p<.01; Stress: t=5.77, p<.01) and both psychopathic trait factors (Factor 1: t=13.21, p<.001; Factor 2: t=8.72, p<.001), and alcohol use (t= 2.65, p<.01). Women reported significantly more total sexual coercion *victimization* (t=-4.30, p<.001). There were no gender differences in physical IPV perpetration or lifetime number of casual partners.

Aim 1: Structure of the Sexual Coercion Construct

EFA analysis using principal axis factoring and promax rotation yielded a one-factor structure, with an initial eigenvalue of 2.43, explaining 56.07% of the variance (Hypothesis 1.1). All subscale scores loaded significantly on to this single factor (see Table 4). When a two-factor solution was forced, the second factor accounted for an additional 24.24% of the variance (initial eigenvalue of 0.81) for a total of 76.31% of the variance explained. Examination of the pattern matrix revealed the breakdown of factor loadings as hypothesized, with Intoxication and Force subscales loading on the initial factor ("non-verbal coercion", 56.07% of the variance explained), and Arousal and Manipulation subscales loading on the second factor ("verbal coercion", 24.24% of the variance explained) with no significant cross-loadings.

Following EFA analyses, CFA analyses using Robust Maximum Likelihood estimation were employed to obtain greater insight into the goodness of fit for the one factor and two factor models as indicated by the EFA. The one-factor model displayed a poor fit ($\chi^2(2) = 17.58$, p <.001, CFI = 0.89, RMSEA = 0.10), which was significantly improved by specifying a two-factor model ($\chi^2(1) = 1.89$, p =.17, CFI = 0.99, RMSEA = 0.04, $\Delta\chi^2(1) = 12.64$, p <.001). For factor loadings, see Table 4.

To further explore the possible dimensionality of the sexual coercion construct (hypothesis 1.2), zero order correlations were computed between the PSP subscales, as well as with theoretically relevant constructs (CTS minor and severe physical aggression and CTS minor and severe sexual coercion). The relative strengths of these correlations were then examined using Fisher's *r* to *z* transformation. Detailed results of these comparisons may be found in Table 5. Overall, results of these analyses suggested a gradient pattern of relationships, whereby arousal tactics were least strongly related and force tactics were most strongly related to both minor and severe CTS sexual coercion scores, with manipulation and intoxication constructs falling in between.

Taken in sum, these findings suggest that sexual coercion may be treated as a unitary construct, with verbal tactics (i.e. Arousal and Manipulation) representing the low end of severity and non-verbal tactics (i.e. Intoxication and Force) representing the upper end of severity. In order to further examine the relative utility and similarity of the unified sexual coercion construct to the two-factor solution, the total as well as the two tactic scores were employed for the remainder of analyses for Aims 2 and 3. Across the sample, 26.22 % of the sample reported perpetration of at least one incident of verbal coercion (n=199, 86 female), and 4.08 % of the sample reported perpetration of at least once incident of non-verbal coercion (n=31, 10 female).

Aim 2: Relationships between Gender, Psychopathic Traits, and Sexual Coercion

In order to test hypotheses 2.1 and 2.2, negative binomial regressions using verbal, non-verbal, and total PSP perpetration were run as described above. The results of these regressions may be found in Tables 6-8. For total PSP perpetration, there was a significant main effect of gender, which was qualified by a gender*Factor 2 interaction. This interaction was decomposed by splitting the sample by gender and running regressions separately within each gender group.

The results demonstrated that for women, neither Factor 1 nor Factor 2 emerged as significantly associated with sexual coercion, with Factor 2 being nonsignificantly negatively associated (b=-.16, p=.35) and Factor 1 being nonsignificantly positively associated (b=.21, p=.13). For men, however, Factor 2 was significantly positively associated with total sexual coercion perpetration (b = 0.33, p = .01), and Factor 1 nonsignificantly associated with a very small effect size (b=.01, p=.96). Thus, men's sexual coercion was primarily attributable to Factor 2, which was inconsistent with hypotheses that implicated Factor 1 in men's coercion and Factor 2 in women's coercion.

Analyses conducted with verbal and non-verbal coercion scores revealed similar patterns of relationships. For PSP verbal coercion scores, a gender*Factor 2 interaction emerged. Factor 2 was nonsignificantly negatively associated with verbal coercion in women (b=-.18, p=.33), but was positively associated in men (b=.29, p=.04). As with total coercion, Factor 1 was not significantly related for either gender, although the relationship was stronger in women (b=.23, p=.11 for women, b=.02, p=.90 for men). Again, Factor 2 seemed to play a significant role in men but not women in terms of sexual coercion. In contrast, no main effect or gender/psychopathy factor interaction terms were significantly related to PSP non-verbal coercion.[2]

Post-hoc analyses. Exploratory negative binomial regressions were run using number of lifetime casual sex partners and physical IPV perpetration as dependent variables to see if patterns of relationships between psychopathy factors, gender, and sexual coercion reported above

[2] Note that when pilot and main collection samples were combined the overall pattern of effects was similar, however additional gender*F1 effects emerged for total and verbal coercion analyses. In these, Factor 1 was significantly positively related to perpetration for women (especially when Factor 2 was also low), and was not significantly related in men, regardless of Factor 2 score. This indicates that Factor 2 effects are particularly robust, but that gender moderated Factor 1 effects are likely obscured due to low endorsement of coercion in the sample, particularly among women.

were reflective of a primarily aggressive or generally sexual phenomena, respectively. Results of these analyses suggested that psychopathy factors, gender, and their interactions do not show a pattern of relationships with either physical IPV or number of casual partners that is similar to the pattern of relationships observed for sexual coercion. This suggests that the results obtained above are not simply generalizable to general aggression or sexually-relevant variables. These results are reported in detail in Appendix A.

Aim 3: Moderated Mediation

The first path analysis model tested is described in Figure 1a. In response to results suggesting poor fit of this initial model ($\chi^2(3) = 935.78$, $p < .001$, CFI = 0.25, RMSEA = 0.64), the residuals of the three sexual motivation variables were correlated in the model, given shared method variance (Figure 3). This change resulted in a just-identified model exhibiting perfect fit ($\chi^2(0) = 0.00$, $p = 1.00$, CFI = 1.00, RMSEA = 0.00).

In order to examine potential moderation effects by gender in the model, which would justify analyzing separately for women and men, a series of multigroup analyses were conducted in which the baseline just-identified model (Figure 3a) with all paths free to vary by gender (fully unconstrained model) was compared to a model in which both regression weights and covariances were constrained to be equal across gender (fully constrained model). Table 9 summarizes these comparisons. None of the $\Delta\chi^2$ values for any of the three dependent measures were significant, suggesting no evidence of moderating effects of gender in the models. Thus, analyses were conducted across gender.[3]

[3] Note however, than when pilot and main collection samples were combined and multi-group models run as described above, there was a significant decrease in model fit from the fully unconstrained to the fully constrained

To examine whether sexual motivations mediated the relationships between psychopathy factors and sexual coercion, the direct paths from Factor 1 and Factor 2 to total PSP perpetration were fixed to 0, and the fit indices compared to the just-identified model. Fixing these paths resulted in a significant decrease in model fit ($\Delta\chi^2(2) = 31.62$, $p < .001$, CFI=.97, RMSEA=.14), suggesting that the direct effects are needed and account for significant amount of variance above indirect effects. Findings were similar for both verbal ($\Delta\chi^2(2) = 24.23$, $p < .001$, CFI=.98, RMSEA=.121) and non-verbal tactic models ($\Delta\chi^2(2) = 11.29$, $p < .01$, CFI=.99, RMSEA=.08.

Path coefficients for the total, verbal, and non-verbal models can be found in Figures 3a-3c. The pattern of direct and indirect effects was similar across the three models. The first model (Figure 3a) explained a moderate proportion of the variance in total perpetration (11.50%). Factor 2 was positively related to all three motivations, whereas Factor 1 was related only to Power and Stress motivations. There were also significant positive relationships between both Power and Stress motivations with total perpetration. Important to our aims, there were significant overall indirect effects through sexual motivations for both Factor 1 and Factor 2, suggesting that the three sexual motivations in combination partially mediate the effects of Factor 1 and Factor 2 on sexual coercion. However, the only specific indirect effects to be significant were from Factor 2 to total perpetration through Power and Stress motivations (b=.03, p<.05 for effect through Power; b=.027, p<.05 for effects through Stress).

group model, indicating that the lack of gender moderation observed in the presented models is likely due to lack of statistical power rather than a true absence of gender effects. The effects are likely small.

This same pattern of results was duplicated in the verbal coercion model (Figure 3b), accounting for a moderate proportion of the variance in verbal perpetration (11.20%). The only difference in this model was that both the direct effect of Stress motivations to coercion and the indirect effect of Factor 2 through Stress motivations were not significant.

In the non-verbal model (Figure 3c), the pattern of effects was similar as well, although this model explained a large proportion of the variance in non-verbal coercion (29.20%). The only difference for this model relative to the total perpetration model was a significant specific indirect effect from Factor 1 through Stress motivations, plus the indirect effect from Factor 2 through Stress motivations was not significant.

In sum, these results only modestly supported the hypotheses set forth in Aim 3. There was significant support for both direct effects of psychopathy factors on sexual coercion perpetration as well as indirect effects through sexual motivations. Additionally, the pattern of indirect effects of Factor 2 through both Power and Stress motivations on coercion was supported. Contrary to proposed hypotheses, there were no significant effects of Emotional Value motivations either directly or indirectly on sexual coercion. The finding of an indirect effect of Factor 1 on non-verbal sexual coercion through Stress motivations was also unexpected. Finally, we failed to support our hypotheses regarding gender moderation of these indirect effects.

Discussion

The goals of the study were to examine the roles of psychopathic traits, sexual motivations, and gender in the perpetration of sexual coercion. Specifically, the project tested a model whereby Emotional Value, Power, and Stress Relief sexual motivations served as mediators in the relationship between psychopathic traits and sexual coercion with gender as a potential moderator of these relationships. This study added to the existing literature in a variety of ways. First, by examining the validity of sexual coercion as a unified construct, the project expanded existing work in this area through psychometric analysis of a widely used measure of sexual coercion (the PSP). Secondly, by empirically testing the mediating effects of sexual motivations on links between psychopathy and sexual coercion, the project sought to address potential psychological phenomena that explain the relationships of psychopathic traits to sexual coercion.

Our findings suggest partial support for the initial hypotheses put forth, with both expected and unanticipated outcomes present for each one of our three aims. Each of these findings holds implications for the understanding of sexual coercion perpetration, both for the way that this behavior is conceptualized and framed, and for the way in which psychopathic trait and motivational factors theoretically influence engagement in such acts.

Aim 1: Sexual Coercion as a Unified Construct

When taken in sum, findings for Aim 1 suggest that sexual coercion may be characterized as a unitary construct that exists along a continuum of severity. The EFA analyses suggest that sexual coercion is best conceptualized as a single factor in which arousal tactics load least strongly and force tactics load most strongly with manipulation and intoxication falling in the middle. In contrast, the CFA analyses point to a two-factor solution in which arousal and manipulation tactics cluster together to form a verbal coercion factor, and intoxication and force tactics cluster to form a non-verbal factor. Finally, correlational analyses revealed that the four tactic domains (arousal, manipulation, intoxication, and force) correlated with external measures of both sexual coercion and physical aggression with a similar pattern of increasing correlation strength from arousal, through manipulation and intoxication, to force. When considered together, these analyses would at the least seem to refute the idea of distinct unrelated tactic groups, but rather imply a dimensional character with tactics arranged along a severity continuum. One potential explanation of these findings would be to conceptualize sexual coerciveness as being driven by a latent trait, which is expressed more strongly as the tactic severity level increases (Embretston & Reise, 2013). Additionally, the broad similarity of findings across levels of severity in the Aims 2 and 3 analyses support this view as a unitary, severity-scaled construct. This conceptualization supports both existing literature that suggests coercion is a unitary, hierarchical construct (e.g. DeGue, DeLillo, & Scalora, 2010) and the conceptualization of all coercion as a violation of bodily autonomy.

However, the large amount of added variance contained by the two factor EFA solution and the superior fit of the two factor model in confirmatory analyses suggests that there may be meaningful differences in verbal and non-verbal tactics. Further exploration of this phenomenon, both through continuing psychometric research (including the use of Item Response Theory) and

through intentional analysis of both overall sexual coercion as well as verbal and non-verbal sexual coercion outcomes in research, will allow for deeper exploration of the differences and similarities that exist at differing levels of coercion severity.

Aim 2: Relationship Between Psychopathic Traits, Gender and Coercion

Although the results of Aim 2 did not support several of the specific hypotheses, we uncovered meaningful differences in the relationships between psychopathic traits and sexual coercion as a function of gender. For overall sexual coercion, a Factor 2*gender interaction emerged, whereby Factor 2 was positively related for men and unrelated for women (this relationship was similar for verbal coercion as well). These findings suggest that, contrary to our initial hypotheses, Factor 2 impulsive-antisocial psychopathic traits may be more important for male perpetrated coercion than for female perpetrated coercion, conflicting with existing literature emphasizing emotional reactivity and behavioral dyscontrol as particularly important drivers of perpetration in women versus men. Rather, these traits appear to be more salient for male perpetrators than female perpetrators. These findings are consistent with literature pointing to general antisociality and disinhibition as important to male derived models of sexual coercion (e.g. Malamuth, 1996).

In contrast to findings for men, Factor 2 was non-significantly negatively associated with coercion in women, and Factor 1 non-significantly positively associated with coercion. These findings are in contrast with both theoretical conceptualizations of female perpetrated coercion as being primarily reactive in nature and empirical findings implicating the importance of interpersonal-affective traits in women (Hoffmann & Verona, under review; Muñoz, Khan, & Cordwell, 2011). However, as findings from post-hoc analyses including the pilot sample suggest (see foot-

note in the Results section), the lack of significant Factor 1 findings is likely attributable to insufficient power to detect effects, especially given the low endorsement of coercion by women. These findings suggest that for women, the motivational processes underlying sexual coercion perpetration may be different from those involved for men, and that women who coerce may potentially do so for motives unrelated to impulsivity or emotional reactivity, but rather for motives related to more instrumental, goal-oriented outcomes. However, replication is required, and further research should tease apart the relationships between psychopathic traits and sexual coercion in women.

Verbal coercion analyses displayed a similar pattern of results, such that a gender*Factor 2 interaction emerged, again indicating that Factor 2 impulsive-antisocial traits were positively related to perpetration for men but not women. In terms of non-verbal coercion, neither psychopathy factor, gender, nor any interactions emerged as significant, with physical IPV perpetration as the only significant predictor. This may suggest that non-verbal coercion is primarily explained by general aggressiveness; however, this was not supported by post hoc analyses using physical IPV perpetration as the dependent variable (Appendix A), which found no relationship between psychopathy factors and physical IPV. Rather, the lack of findings is again more likely due to a power issue caused by low base rates of non-verbal perpetration in the sample, particularly in women. As such, conclusions that can be drawn regarding non-verbal perpetration are somewhat limited.

Aim 3: Moderated Mediation Model of Sexual Coercion

Although gender did not moderate the model, there were significant direct effects of psychopathy and indirect effects through sexual motivations on sexual coercion. While it is difficult to interpret reasons why this moderation effect did not emerge, it is likely that the particularly

low rates of endorsement of coercion may have led to power issues that could obscure gender effects. Indeed, in light of gender differences in Aim 2 and the similarities in the results of Aim 3 with the Aim 2 findings for men, this may be a particularly likely explanation. Additional analyses that added the pilot participant data to the main data collection, for a much larger sample size (as noted in the footnote in the results section), suggest this as well.

Across all three models, both the direct path from Factor 2 to coercion and the indirect path from Factor 2 to coercion through Power motivations emerged as hypothesized. This suggests that individuals who are high in traits associated with Factor 2 may be more likely to experience power and dominance as motivations to engage in sexual behavior, which, when rebuffed, could lead to engagement in sexual coercion in order to fulfill that need. Considering findings from Aim 2 that imply Factor 2 is especially important for men, these findings fit well with established models based around hostile masculinity and need for dominance (Malamuth, et al., 1996, and to some degree, Knight & Sims-Knight). In this conceptualization, men who are high in Factor 2-associated traits (reactivity and vulnerable resentment), may actually perceive themselves as less secure in their power, which then leads them to attempt to regain that sense of power through engaging in sexual coercion. This interpretation is supported by findings that men with chronically *low* feelings of power are more likely to behave sexually aggressively when given an opportunity to do so, suggesting that sometimes feeling powerless can lead to aggression (Williams, Gruenfeld, & Guillory, 2017). Thus, the mediating relationship of sexual Power motivations between Factor 2 and sexual coercion may be but one example of a larger desire for power that grows out of the vulnerable narcissism and heightened threat reactivity associated with Factor 2 traits (Falkenbach, Poythress, & Creevy, 2013; Fowles & Dindo, 2009). The failure of Factor 1's direct influence to emerge as significant fits within this conceptual framework

as well – men who are high in Factor 1, which is more commonly conceptualized as being associated with social dominance and power (e.g. Lilienfeld et al., 2012), may already perceive themselves as powerful, and as such there is no need attempt to *regain* power through sexual coercion. Findings of significant indirect effects from Factor 2 to coercion through Stress Relief motivations (use of sex as a way of decreasing emotional stress) in the total and non-verbal models offers further support for the idea that emotional dysregulation and vulnerability, and the subsequent use of sex as emotion regulation, can be driving at least part of the Factor 2 - coercion relationship.

In addition to the mediated path, the direct relationship from Factor 2 remained robust when the sexual motivations were entered into the model. This direct relationship of Factor 2 to coercion may reflect the role of behavioral disinhibition and impulsivity in increasing coercive behavior, which would not be captured by the indirect effects through sexual motivations, which are likely related to the affective vulnerabilities associated with Factor 2.

As in Aim 2, the non-verbal perpetration model produced slightly different results than those of the total and verbal models, most notably a significant indirect effect of Factor 1 (both total and specific indirect effects through Stress Relief motivations). This finding is in seeming contrast to the previous results, and the indirect pathway through Stress Relief motivations in particular is unexpected. As before, low endorsement rates of non-verbal perpetration in the sample warrants caution in interpretations of the non-verbal coercion findings.

Hypotheses regarding the relationship between Emotional Value motivations and coercion were not supported. Although there was a significant direct effect from Factor 2 to Emotional Value (the desire to engage in sex in order to feel loved or appreciated by a partner) in all

three models, there was no connection to coercion. Given that Factor 2 is related to all three sexual motivations, as well as sociosexuality (see Appendix A), the Factor 2-Emotional Value motivation link may be accounted for by general level of sexuality associated with Factor 2. The lack of relationship between Emotional Value motivations and coercion does not support theoretical orientations or literature positioning coercion as a measure undertaken as a desperate attempt to fulfill an emotional need for love and affection (e.g. Russell & Oswald, 2001; Zurbriggen, 2000). One potential explanation may be that the Emotional Value motivation items used are not capturing the desperate need aspect of these theories, but rather reflect a more normative attitude of sex as an expression of emotional love and care. Given that these theories are typically applied to models of female perpetration, the low base rates of female perpetration in our sample may again be simply obscuring these relationships; however, our Aim 2 findings deemphasizing the role of Factor 2 traits in women's coercion do not suggest this is the case.

Limitations and Strengths

Although our study contributes significantly to the existing literature on the nature of the relationships between psychopathy, gender, sexual motivations, and sexual coercion, there are several limitations that must be addressed. As in any study relying on self-report survey methodologies, our data may be influenced by participant biases in item interpretation, and defensive or random responding. The use of anonymous online surveys in particular may introduce unexpected "noise" in the data set, as participants cannot be observed during survey administration, and may be distracted, rushing through without reading items thoroughly, or responding in otherwise invalid ways. Data cleaning procedures surrounding time outliers aimed to minimize these influences, but this screening did not likely capture all sources of invalid data. Relatedly, as with

all correlational research using face-valid self report measures, the associations between variables may represent not underlying mechanisms driving behavior, but rather surface-level semantic relationships between items on questionnaires.

A significant limitation of the current study is the low base rates for sexual coercion behaviors in the sample. Sexual coercion is typically a fairly low base rate behavior, even in college samples; however, the reported incidence of sexual coercion in our sample was below even expected levels. This could represent a legitimate low base rate of behavior among the participants in our study, or could be a result of under reporting, either due to defensive responding or failure of participants to recognize their own coercive behaviors. As such, some effects (particularly those of gender moderation) may not be detected in our data. This issue was particularly salient for the analyses of non-verbal coercion, where base rates of the behavior were especially low. Although both our findings and other existing literature (DeGue, Delillo & Scalora, 2010) emphasize the conceptual and empirical similarities of verbal and non-verbal coercion, there appears to be enough difference between the two to be reasonably cautious of overly broad generalization of verbal-based findings to non-verbal behavior. This low endorsement of overall coercion (and non-verbal tactics in particular) may be partially due to the make up of the sample. That is, despite targeted recruiting aimed at student groups associated with increased risk of sexual violence (i.e. student athletes and Greek-affiliated students; Murnen & Kohlman, 2007), these students made up only a small portion of our sample (n=71, 9.31%). Understandably, this places some limitations on conclusions that can be drawn regarding the role of gender in these relationships, particularly in the realm of non-verbal coercion.

In spite of these limitations, the study also boasts several strengths. The sample obtained was large and representative of the greater USF student body, and as such bolsters the external

validity of the study. Our findings add to the literature not only by examining the validity of the sexual coercion construct and conducting subsequent analyses in the context of these findings, but by considering the role of psychopathy, sexual motivations and gender explicitly as processes involved in sexual coercion simultaneously. First, the findings of the current study suggest important similarities and differences between verbal and non-verbal tactics, with the caveat of low endorsement of non-verbal tactics in this sample. Second, results for psychopathy were new to the literature and enlightening. Factor 2 emerged as an important force in sexual coercion perpetration across levels of severity, particularly for men. Although unexpected, these results indicate that some individual-level processes differentiate male and female perpetration of sexual coercion.

Third, findings suggest that both Power and Stress Relief motivations partially mediate the relationship between Factor 2 and perpetration, highlighting the role of dominance-seeking and feelings of vulnerability in driving coercive behavior for men (in contrast to our initial hypotheses). That is, our data may suggest that men who are high on Factor 2 traits experience feelings of low power and vulnerability, and may seek to regain that sense of power through perpetrating sexual coercion – this may be part of the mechanism by which heteronormative beliefs and hostile views of women relate to male perpetrated coercion (e.g. Malamuth et al., 1996). That is, some men believe that they should have more power than women, and challenges to that hierarchy may result in sexually coercive behavior, especially when the experience of power is strongly tied to sex. Future examination of the ways in which heteronormative and misogynistic attitudes may moderate the relationships between Factor 2 traits, Power motivations, and sexual coercion is warranted.

Notably, none of the hypotheses regarding female perpetrated sexual coercion were supported by this study's findings. This could be due to the shifting cultural norms regarding women and sex: As women are further empowered to view sex as a way of experiencing personal gratification rather than simply a means to preserve a relationship or obtain male companionship, the theorized relationship between desperate need for emotional fulfillment and engagement in sexual coercion has been attenuated. Further research, including qualitative investigations of female perpetrated coercion, and the use of clinical or correctional samples which may have higher base rates of such behavior are necessary to begin to formulate new hypotheses and theories to explain female engagement in coercion. Although less frequent than its male counterpart, female perpetrated coercion is damaging to victims (Struckman-Johnson, Struckman-Johnson & Anderson, 2003), and as such, deserving of further study.

While we have begun to tease apart these complex relationships, much work remains to be done in order to understand the interplay of influences that lead people to engage in sexually coercive behaviors. Our findings suggest Factor 2 traits are linked to sexual coercion through both desire for power and desire to regulate stress with sex, which may arise due to the vulnerability to negative emotionality and threat reactivity associated with Factor 2, especially for men. Future work should include longitudinal or experimental research to allow for greater understanding of the temporal development of these motivations and behaviors, serving to validate the theoretical and statistical mediation model. Another potentially fruitful avenue may be to consider sexual motivations as moderators of the psychopathy—coercion relationship, considering them as concurrent influences, rather than as constructs that develop from vulnerabilities associated with the possession of psychopathic traits. Focusing on the dynamics of sexual coercion in

same-sex relationships is another important step, as pressures associated with internalized heteronormative sexual scripts and potentially, feelings of sexual power, may manifest differently when victim gender is the same as the perpetrator.

Our findings also have significant implications for policy and treatment considerations. Focusing on building resilient self-esteem, increasing healthy coping mechanisms for stress and negative emotion, and presenting alternative ways of feeling and expressing power may be beneficial for young men with Factor 2 traits who are at risk of perpetrating coercion. At a broader level, continuing to challenge cultural norms that perpetuate gender inequality, toxic masculinity, and harmful heteronormative sexual beliefs (such as the identification of masculinity and power with sexual prowess) may help decrease the conflation of sex and power, and subsequently the use of sexual coercion as a way of (re)gaining status and positive self regard.

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Tables and Figures

Table 1. *Demographics*

	Pilot sample (*n*=503)	Main collection sample (*n*=763)
Variable	*n(%)*	*n(%)*
Gender Identity	*n=503*	*n=778*
Male	109(21.67)	346(45.00)
Female	388(77.14)	417(54.23)
Transgender Male	1(.19)	3(.39)
Transgender Female	1(.19)	2(.26)
Non-Binary	3(.60)	9(1.16)
Other (Please specify)	1(.19)	1(.13)
Ethnicity	*n=503*	*n=763*
Hispanic	109(21.67)	179(23.46)
Non-Hispanic	394(78.33)	584(76.54)
Race	*n=503*	*n=762*
American Indian or Alaskan Native	7(1.39)	6(.79)
Asian	44(8.75)	68(8.92)
Black or African American	68(13.52)	80(10.50)
Native Hawaiian or Pacific Islander	2(.40)	4(.52)
White or Caucasian	330(65.61)	541(71.00)
Other (Please specify)	52(10.34)	63(8.27)
Sexual Orientation	*n=501*	*n=762*
Heterosexual	437(87.23)	630(82.68)
Homosexual	19(3.79)	30(3.94)
Bisexual	27(5.40)	68(8.92)
Asexual	4(.80)	4(.52)
Unsure/Questioning	6(1.20)	17(2.23)
Other (Please specify)	8(1.60)	13(1.71)
Relationship Status	*n=502*	*n=763*
Single	423(84.26)	595(77.98)
Living with Partner	46(9.16)	124(16.25)
Married or Domestic Partnership	29(5.78)	38(4.98)
Divorced	2(.40)	4(.52)
Separated	1(.20)	2(.26)
Widowed	1(.20)	0(.00)

Table 2. *Descriptive statistics*

Variable	*Men* M (SD)	*Women* M (SD)	*Gender Diffs* *t*
SRP-III Factor 1	2.65 (.45)	2.21 (.46)	-13.21**
SRP-III Factor 2	2.22 (.45)	1.95 (.42)	-8.72**
AMORE Emotional Value	20.55 (6.75)	19.45 (7.70)	-2.04*
AMORE Power	25.91 (9.73)	22.71 (9.54)	-4.46**
AMORE Stress Relief	31.80 (10.84)	26.95 (11.76)	-5.77**
PSP total coercion perpetration	.95(1.98)	.58 (1.37)	-2.94**
PSP verbal perpetration	.41 (.77)	.27 (.61)	-2.84**
PSP non-verbal perpetration	.06 (.33)	.02 (.17)	-2.07*
Number of casual sex partners	1.83 (2.65)	1.50 (2.24)	-1.77
PSP total coercion victimization	1.48 (2.57)	2.36 (3.06)	4.30**
AUDIT score	4.71 (5.09)	3.78 (4.40)	2.65**
CTS physical assault perpetration	1.69 (9.59)	1.49 (5.60)	-.34

Note: SRP-III = Self Report Psychopathy Scale III, AMORE = Affective and Motivational Orientation Related to Erotic Arousal Questionnaire, PSP = Post-Refusal Sexual Persuasion Scale, CTS = Conflict Tactics Scale 2, AUDIT = Alcohol Use Disorders Identification Test

***p<.01*

**p<.05*

Table 3. *Zero order correlations for variables in Aims 2 and 3 in men and women*

Variable	1	2	3	4	5	6	7	8	9	10	11	12	
PSP total coercion perpetration (1)	--	.96**	.77**	.17**	.26**	.24**	.16**	.29**	-.12*	.41**	.65**	.26**	.3
PSP verbal coercion perpetration (2)	.97**	--	.56**	.19**	.27**	.26**	.17**	.28**	-.10	.32**	.67**	.29**	.3
PSP non-verbal coercion perpetration (3)	.53**	.32**	--	.08	.16**	.14*	.08	.22**	-.12*	.49**	.41**	.12*	.2
AMORE Emotional Value (4)	.20**	.20**	.09	--	.62**	.74**	.09	.23**	-.08	.00	.19**	.12*	.2
AMORE Power (5)	.23**	.23**	.10*	.63**	--	.64**	.21**	.29**	-.06	.08	.19**	.16**	.1
AMORE Stress relief (6)	.23**	.22**	.14**	.72**	.72**	--	.13*	.25**	-.04	.01	.21**	.17**	.2
SRP-III Factor 1 (7)	.23**	.23**	.13*	.24**	.31**	.28**	--	.53**	.04	.11*	.16**	.09	.2
SRP-III Factor 2 (8)	.22**	.21**	.15**	.24**	.35**	.28**	.70**	--	-.01	.16**	.28**	.31**	.5
Ethnicity (9)	-.14**	-.14**	-.09	-.03	-0.03	.00	.05	-.04	--	-.04	-.10	-.03	-
CTS physical IPV perpetration (10)	.06	.03	.13**	.11*	.10*	.09	.11*	.11*	.01	--	.27**	.13*	.2
PSP total coercion victimization (11)	.45**	.43**	.26**	.28**	.22**	.26**	.26**	.32**	-.04	.20**	--	.39**	.3
Total number of casual sex partners (12)	.18**	.18**	.06	.23**	.23**	.24**	.25**	.44**	.01	-.02	.42**	--	.3
AUDIT score (13)	.32**	.27**	.33**	.19**	.20**	.21**	.27**	.42**	.00	.06	.35**	.38**	

Note: SRP-III = Self Report Psychopathy Scale III, AMORE = Affective and Motivational Orientation Related to Erotic Arousal Questionnaire, PSP = Post-Refusal Sexual Persuasion Scale, CTS = Conflict Tactics Scale 2, AUDIT = Alcohol Use Disorders Identification Test
Correlations above the diagonal represent men, correlations below the diagonal represent women
***p<.01*
**p<.05*

Table 4. *EFA and CFA factor loadings for PSP tactic domains*

	One factor models		Two factor models			
	EFA	CFA	EFA		CFA	
	Factor 1	*Factor 1*	*Factor 1*	*Factor 2*	*Factor 1*	*Factor 2*
Arousal	.47	.45	-.09	.68	--	.49
Manipulation	.73	.70	.29	.52	--	.88
Intoxication	.65	.68	.58	.10	.69	--
Force	.72	.74	.90	-.10	.79	--

Note: PSP = Post-Refusal Sexual Persistence Scale

Table 5. *Correlations between the four PSP tactic scores and CTS variables*

PSP tactic score	CTS minor sexual perpetration	CTS severe sexual perpetration	CTS minor physical perpetration	CTS severe physical perpetration
Arousal	.14**	.11**	.10**	.10**
Manipulation	.19**	.38**	.20**	.35**
Intoxication	.22**	.36**	.16**	.29**
Force	.21**	.60**	.35**	.51**

Note: Different cell background pattern indicates significant difference in correlation strength
PSP = Post-Refusal Sexual Persistence Scale, CTS = Conflict Tactics Scale 2

*** indicates p<.01*

Table 6. *ZINB regressions for total sexual coercion*

Predictor	*Full sample*			*Men*			*Women*		
	b	SE	OR/IRR	*b*	SE	OR/IRR	*b*	SE	OR/IRR
Age	.03	.08	1.03	-.02	.10	.98	.05	.12	1.05
Lifetime Number of Casual Sexual Partners	-.07	.08	.93	-.08	.11	.92	-.07	.12	.94
Ethnicity	-.15*	.07	.86	-.06	.09	.95	-.24*	.10	.78
Total Sexual Coercion Victimization	.83***	.06	2.29	.82***	.08	2.27	.88***	.08	2.42
Total Physical IPV Perpetration	-.03	.07	.97	.04	.10	1.04	-.21	.12	.81
Alcohol use	.20**	.08	1.22	.21*	.11	1.23	.19	.12	1.21
Gender	.29**	.08	1.33	--	--	--	--	--	--
Factor 1	.24	.14	1.27	.01	.12	1.01	.21	.14	1.24
Factor 2	-.16	.17	.85	.33*	.14	1.39	-.16	.18	.85
Factor 1 x Factor 2	-.18	.12	.84	-.17	.14	.85	-.18	.12	.84
Factor 1 x Gender	-.14	.12	.87	--	--	--	--	--	--
Factor 2 x Gender	.32*	.14	1.37	--	--	--	--	--	--
Factor 1 x Factor 2 x Gender	-.04	.13	.97	--	--	--	--	--	--

**Significant at p<.05*
***Significant at p<.01*
****Significant at p<.001*

Table 7. *ZINB regressions for verbal sexual coercion*

Predictor	*Full sample*			*Men*			*Women*		
	b	SE	OR/IRR	*b*	SE	OR/IRR	*b*	SE	OR/IRR
Age	.041	.078	1.042	-.003	.106	.997	.059	.121	1.061
Lifetime Number of Casual Sexual Partners	-.068	.082	.934	-.067	.115	.935	-.083	.126	.920
Ethnicity	-.139*	.069	.870	-.024	.098	.976	-.244*	.100	.783
Total Sexual Coercion Victimization	.849***	.058	2.337	.854***	.074	2.349	.893***	.082	2.442
Total Physical IPV Perpetration	-.057	.072	.945	-.003	.102	.997	-.250*	.123	.779
Alcohol use	.185**	.078	1.203	.206	.108	1.229	.178	.119	1.195
Gender	.275**	.086	1.317	--	--	--	--	--	--
Factor 1	.266	.148	1.305	.015	.124	1.015	.227	.143	1.255
Factor 2	-.191	.170	.826	.290*	.142	1.336	-.175	.179	.839
Factor 1 x Factor 2	-.175	.120	.839	-.160	.144	.852	-.170	.120	.844
Factor 1 x Gender	-.161	.128	.851	--	--	--	--	--	--
Factor 2 x Gender	.309*	.148	1.362	--	--	--	--	--	--
Factor 1 x Factor 2 x Gender	.053	.137	1.054	--	--	--	--	--	--

**Significant at p<0.05*
***Significant at p<0.01*
****Significant at p<0.001*

Table 8. *ZINB regression for non-verbal sexual coercion*

Predictor	*b*	SE	OR/IRR
Age	-.037	.156	.964
Lifetime Number of Casual Sexual Partners	-.064	.146	.938
Ethnicity	-.157	.129	.855
Total Sexual Coercion Victimization	.445**	.156	1.560
Total Physical IPV Perpetration	.192	.138	1.212
Alcohol use	.262	.139	1.300
Gender	.382	.211	1.465
Factor 1	.126	.371	1.134
Factor 2	.133	.386	1.142
Factor 1 x Factor 2	-.338	.354	.713
Factor 1 x Gender	-.026	.304	.974
Factor 2 x Gender	.282	.349	1.326
Factor 1 x Factor 2 x Gender	-.043	.392	.958

**Significant at p<.05*
***Significant at p<.01*

Table 9. *Fit statistics for path models*

	Total			Verbal			Non-verbal		
Fit statistic	*Baseline*	*Grouped*	*Direct paths constrained*	*Baseline*	*Grouped*	*Direct paths constrained*	*Baseline*	*Grouped*	*Direct paths constrained*
χ^2(df)	0.00 (0)	19.88 (15)	**31.62 (2)****	0.00 (0)	16.92 (15)	**24.23 (2)****	0.00 (0)	20.222 (15)	**11.29 (2)****
CFI	1.00	1.00	0.97	1.00	1.00	0.98	1.00	0.99	0.99
RMSEA	0.00	0.03	0.14	0.00	0.02	0.12	0.00	0.03	0.08

Note: bold text *indicates significant $\Delta\chi^2$ from the baseline model*
Baseline = fully unconstrained model, Grouped = fully constrained model grouped by gender, Direct paths constrained = model with direct paths from psychopathy factors to coercion fixed to zero.
**indicates p<.05*
***indicates p<.01*

Figure 1a. *Proposed path model, all paths present*

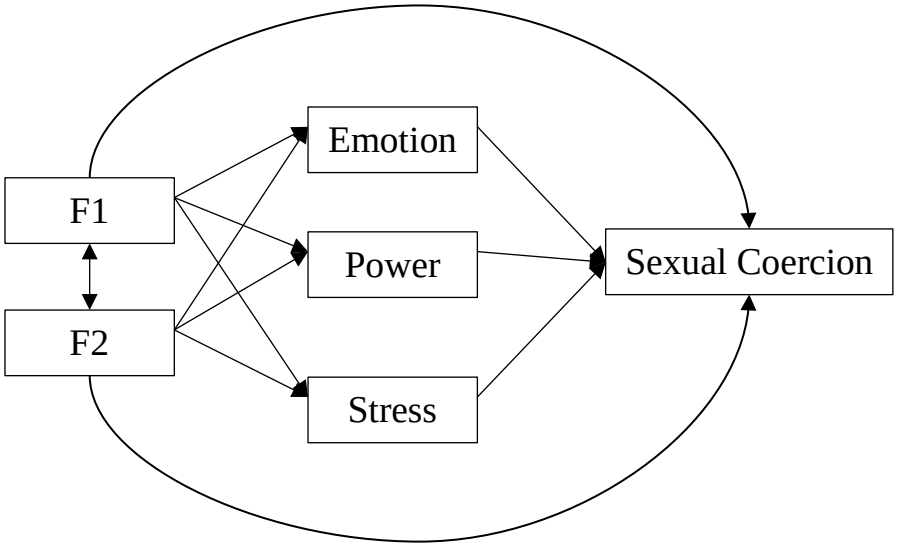


Figure 1b. *Proposed path model, direct paths fixed to zero*

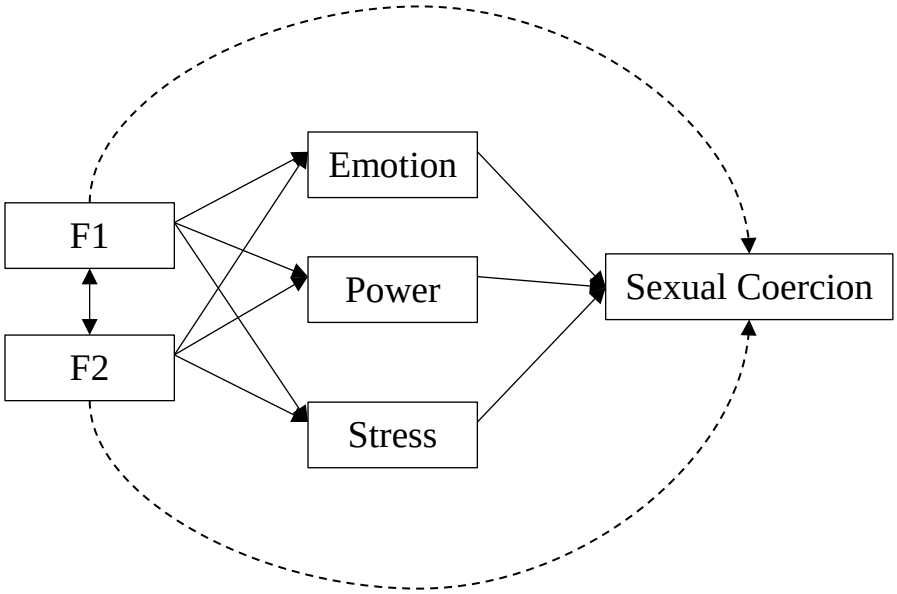


Figure 2a**.** *Theoretical one factor measurement model of sexual coercion*

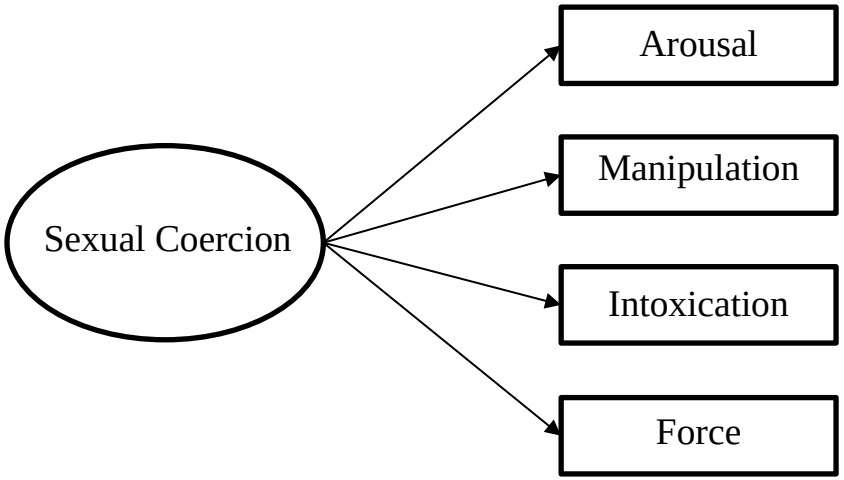


Figure 2b. *Theoretical two factor measurement model of sexual coercion*

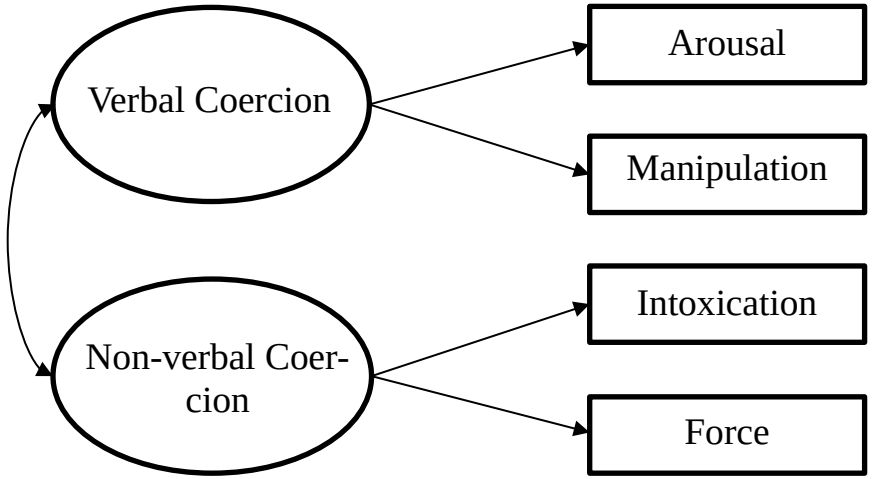
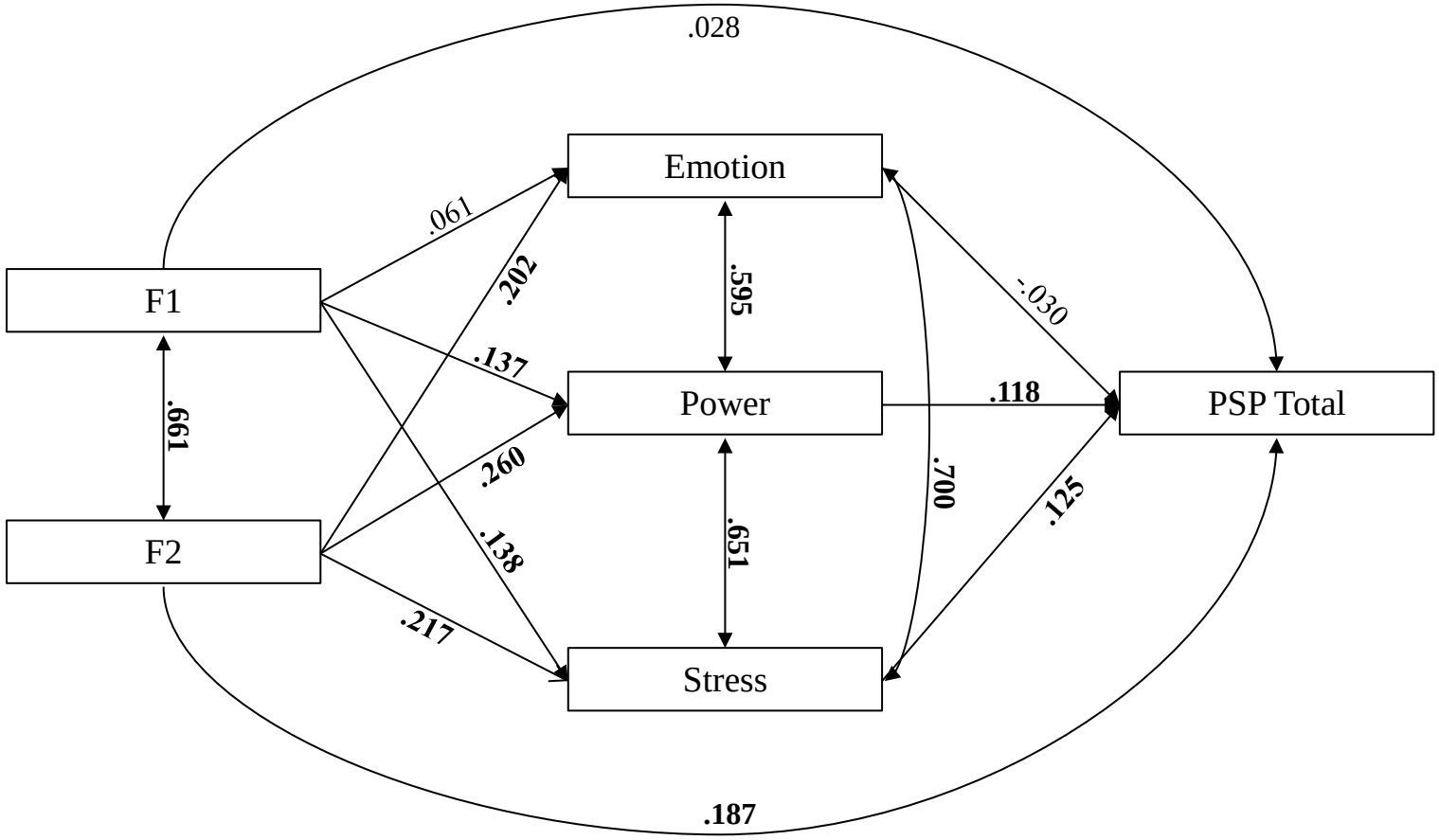
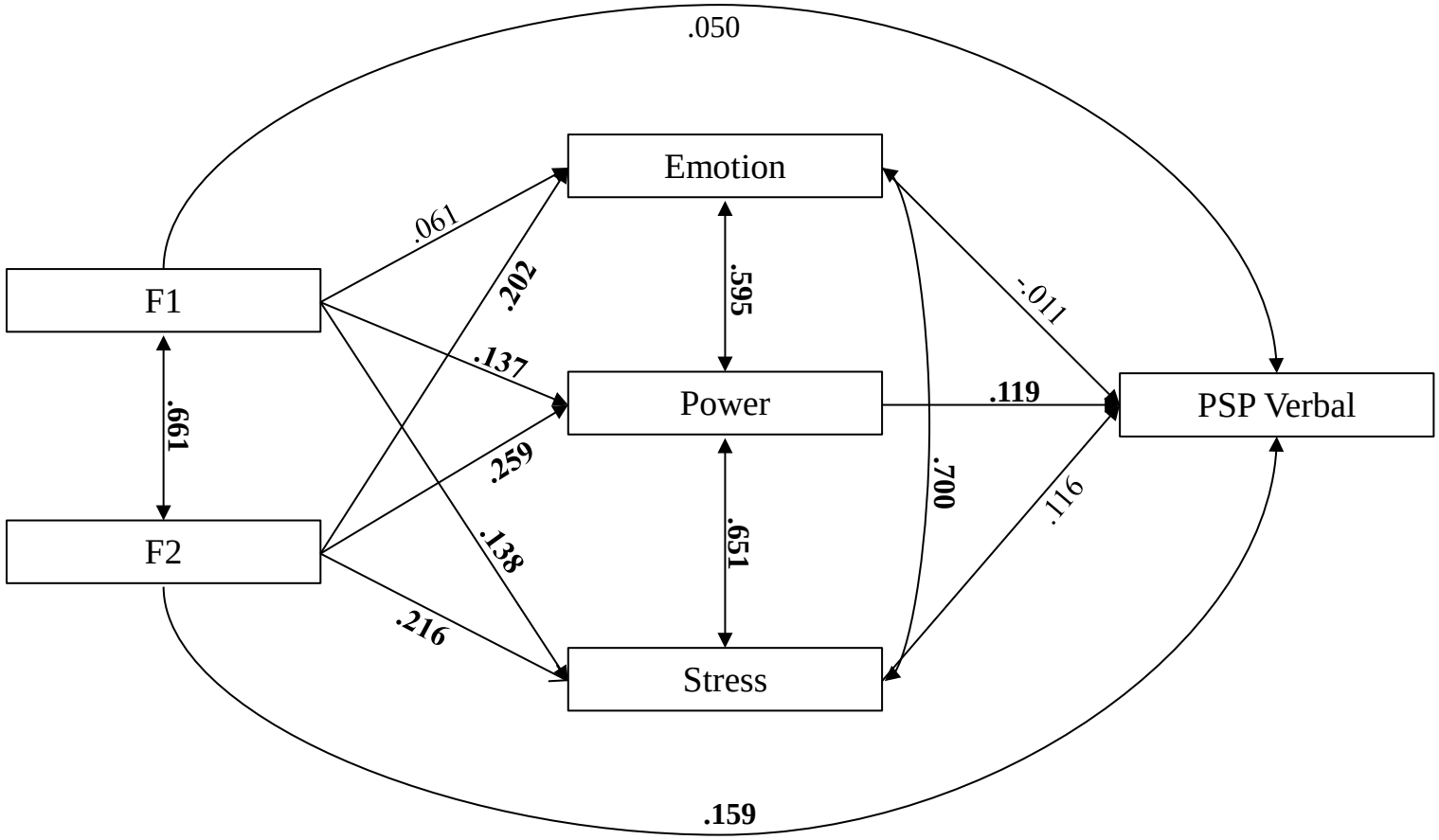


Figure 3a. *Total sexual coercion path model parameter estimates*



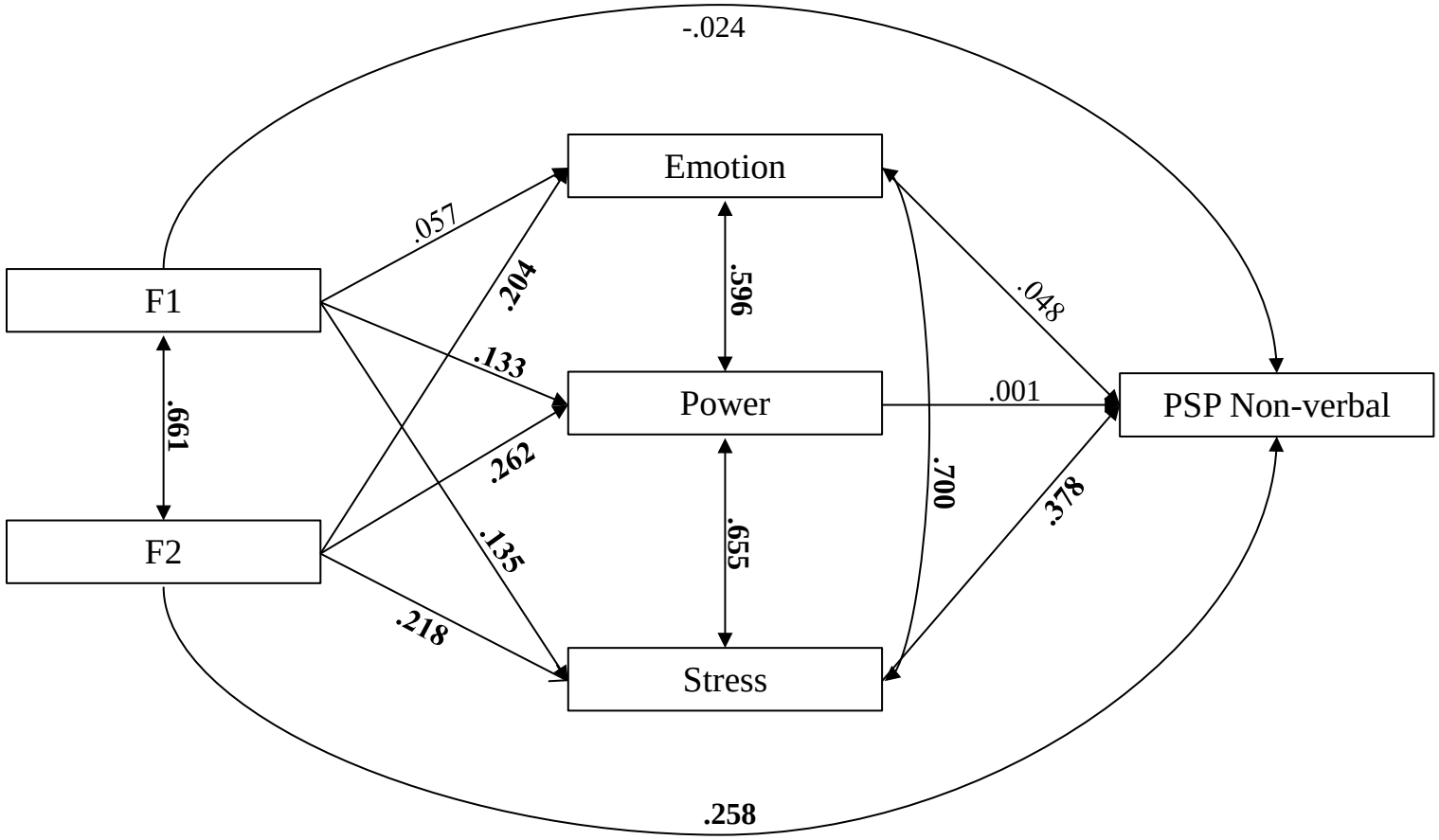
Note: ***Bold*** *paths indicate p < .05*

Figure 3b. *Verbal sexual coercion path model parameter estimates*



Note: ***Bold*** *paths indicate p < .05*

Figure 3c. *Non-verbal sexual coercion path model parameter estimates*



Note: ***Bold*** *paths indicate p < .05*

APPENDIX A: Post-Hoc and Supplemental Analyses

Post-hoc negative binomial regressions of psychopathy factors and gender with number of partners and physical IPV perpetration. As in the a priori Aim 2 models, gender, Factor 1, Factor 2, Gender*Factor 1, Gender*Factor 2, Factor 1*Factor 2, and Gender*Factor 1 *Factor 2 terms were included as substantive terms. Additionally, age was controlled for in both post-hoc analyses. In the analyses using number of casual sex partners as the dependent variable, physical IPV perpetration was controlled for, and PSP total perpetration and victimization scores were controlled for in the analysis using physical IPV as the dependent variable.

Results of the model using casual sex partners as the dependent variable revealed a Factor 2*Gender interaction (b= -.958, p=.010), however, in contrast to findings in the a priori models using coercion perpetration as the dependent variable, Factor 2 scores were more positively related to casual sex partners for women (b= 1.068, $p < .001$) than for men (b=.565, $p < .001$). Results of the model using physical IPV perpetration as the dependent variable revealed no significant relationship with either psychopathy factor or any of the interaction terms, suggesting the relationship between psychopathic traits and sexual coercion cannot be accounted for by generalized aggression.

Post-hoc measurement invariance testing for CFA models of the PSP. In order to assess gender invariance in the one-factor and two-factor measurement models tested in Aim 1, post-hoc testing using MIMIC models was conducted. In these analyses, the grouping variable

(gender) is included as a covariate in the structural equation model, allowing for analyses of difference at the level of both the latent and observed variables (see Brown, 2015 for a detailed overview of MIMIC models). The results of these analyses indicated there were no group differences in latent means for men and women in any of the latent variables (coercion, verbal coercion, or non-verbal coercion), suggesting the groups do not vary in their reported experiences of coercion perpetration. In the one-factor model, no differences in subscale score functioning were detected, suggesting no significant differences between men and women on arousal, manipulation, intoxication, or force scores. In the two-factor model however, the intoxication and force scores differed significantly by gender ($\Delta\chi^2(1) = 8.32$, $p < .01$), suggesting men had significantly higher scores on intoxication and force subscales than women.