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Subjective Expected Utility and Sexual Coercive Behaviors: Examining the Role of Decision Processes, Alcohol Consumption, and Rape-Supportive Attitudes among College Males

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SUBJECTIVE EXPECTED UTILITY AND SEXUAL COERCIVE BEHAVIORS: EXAMINING THE ROLE OF DECISION PROCESSES, ALCOHOL CONSUMPTION, AND RAPE-SUPPORTIVE ATTITUDES AMONG COLLEGE MALES

by

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Prior studies have established the role of rape-supportive attitudes and alcohol consumption in sexual coercive behaviors among college students. However, less research has examined the role of more proximal variables such as decision processes. Utilizing the subjective expected utility (SEU) model of decision making, this study aimed to examine how decisions are made in a date-rape scenario utilizing a vignette methodology. The SEU model posits that decisions to engage in a behavior are contingent on perceived utility of the action, perceived probability of the utility occurring, perceived cost of the behavior, and the perceived probability of the cost occurring. Higher SEU scores indicate overemphasis of the utility function and underemphasis of the costs. This study also examined how de-biasing techniques, specifically consider-the-opposite, can aid in correcting decision biases related to sexual coercive behaviors.

Male college students (N = 161) were randomly assigned to either a control group (n = 83) or consider-the-opposite (n = 78) group. Interaction effects were significant, such that higher rape supportive attitude and high alcohol consumption reported the highest self-reported sexual coercive behavior. Results also indicated that rape-

supportive attitudes affected decisions. Specifically, males with high rape-supportive attitudes had higher SEU scores (i.e., tend to overemphasize the utility and underemphasize the cost) across the date-rape vignette scenario. The consider-the-opposite intervention reduced SEU scores, but only during ambiguous events where sexual coercive behaviors were not as blatant. Moreover, consider-the-opposite interventions helped reduce the likelihood to engage in sexual coercive behaviors by reducing SEU scores and correcting decision biases during these ambiguous events. Results illustrate how biased decision processes explain the rape-supportive attitudes, alcohol consumption, and sexual coercive behavior relationship.

DEDICATION

This work is dedicated to my wife, my Sihaya, Minerva Dotollo-Tuliao, and to my parents, Antonio and Virginia Tuliao.

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This dissertation would not have been possible without the mentorship and support of my committee chair and adviser, Dr. Dennis E. McChargue. I would also like to thank the members of my committee, Jeffrey Stevens Ph.D., Michael Dodd Ph.D., Mario Scalora Ph.D., and Lisa Sample, Ph.D., for their guidance and thoughtful feedback. Finally, I would like to acknowledge Alicia K. Klanecky, PhD. and Bernice Vania Landoy M.A. for their assistance in data gathering, both for the pretest and the actual dissertation.

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Table of Contents

List of Tables

List of Figures

SUBJECTIVE EXPECTED UTILITY AND SEXUAL COERCIVE BEHAVIORS: EXAMINING THE ROLE OF DECISION PROCESSES, ALCOHOL CONSUMPTION, AND RAPE-SUPPORTIVE ATTITUDES AMONG COLLEGE MALES

Chapter 1: Introduction to the Study

Rape, sexual assault, and sexual coercive behaviors have various definitions for different jurisdictions and for different studies. For instance, sexual assault is defined in Nebraska as sexual penetration (i.e., vaginal, oral, or anal sex) or sexual contact (i.e., touching the breasts, genital area, buttocks, and contiguous areas) without the victim's consent (Neb. Rev. Stat. § 28-319, § 28-320). Lack of consent has been further defined as when the victim submitted due to threats of or use of force, deception, or when the victim was too intoxicated to provide consent (Neb. Rev. Stat. § 28-318; State v. Rossbach, 2002). In other empirical studies that use the Sexual Experiences Scale (Koss & Oros, 1982; Koss & the SES Collaborative, 2006; Testa, VanZile-Tamsen, Livingston, & Koss, 2004), sexual penetration or contact through the use of continued arguments, criticism, verbal pressure, or threatening to end the relationship all fall within the ambit of sexual assault. Depending on the scope of vitiated consent, between 29% to 39% of college women reported to have experienced attempted or completed sexual assault and rape (Koss et al., 1987; Krebs et al., 2007) while 25% of college men reported having perpetrated some form of sexual assault (Abbey, McAuslan, & Ross, 1998; Koss, Gidycz, & Wisniewski, 1987). Given the prevalence, this study examined sexual coercive

behaviors of college men perpetrated against women. Sexual coercive behaviors[1] were broadly defined to include sexual penetration and contact attained through verbal pressure and coercion, deception, use of the perpetrator's position of power, use of or threats of violence, or because the victim was too intoxicated to provide adequate consent.

Research on the social cognitive underpinnings of sexual coercive behaviors among college males has emphasized the role of cognitive products (i.e., explicit rape-supportive attitudes) and cognitive structures (i.e., implicit attitudes and schema). However, more proximal cognitive processes, specifically judgment and decision making related to sexual coercive behaviors, have not been thoroughly examined. Understanding how at-risk college males make decisions and how these decisions become biased are essential in developing date-rape and sexual aggression prevention programs.

Burgeoning studies and models (e.g., Rational Choice Theory, Cornish & Clarke, 2002) suggest that sexual offenders actively make decisions at every juncture of the commission of a crime. Within a Rational Choice framework, offending behavior can be understood as a function of subjective expected utility (the expected gains of pursuing a set of behaviors and the associated subjective probability estimate of achieving the gains) and subjective expected costs (the expected detrimental costs of pursuing a set of behaviors and the associated subjective probability estimate of experiencing the costs). Utilizing this perspective, this study examined the biases in decision making as it relates to sexual coercive behavior, specifically faulty estimation of subjective expected utility and costs.

[1] Sexual coercive behavior, sexual aggression, and sexual assault are used interchangeably in this study.

Research also suggests that half of sexual assaults on college campuses generally involve alcohol use of one or both parties (Abbey, 2002; Harrington & Leitenberg, 1994; Testa, 2002). According to the I^3 theory of aggression (Slotter & Finkel, 2011), alcohol hampers executive functions that inhibits aggressive impulses and magnifies predisposing factors such as rape-supportive attitudes. Although a multitude of studies have consistently found links between alcohol consumption, rape-supportive attitudes, and sexual coercive behavior (e.g., Testa & Livingston, 2009), this study will examine if alcohol consumption contributes to decision biases associated with sexual coercive behaviors.

Apart from the victimization itself, sexual assault survivors experience additional issues such as substance abuse (Koss, Koss, & Woodruff, 1991), depression and anxiety (Gidycz, Coble, Latham, & Layman, 2006), and Post Traumatic Stress Disorder (Kessler, Sonnega, Bromet, Hughes & Nelson, 1995), emphasizing the need for efficacious primary prevention programs, particularly targeting college males. Although available sexual assault prevention programs are heterogeneous, most target distal variables that increase the risk to commit sexual aggression, particularly rape-supportive attitudes which include misogynistic attitudes, rape myth acceptance, and acceptance of interpersonal and/or sexual violence. The core argument in this dissertation is that decision processes are central in understanding the rape-supportive attitudes and sexual coercive behavior relationship. Therefore, interventions that aim to correct decision biases may prove to be beneficial as an adjunct to current sexual assault prevention programs. De-biasing interventions (Arkes, 1991; Larrick, 2004) have been shown to correct biases and improve social decision making. This study examines whether the

consider-the-opposite de-biasing technique (a simple intervention that asks decision makers to reevaluate their initial estimates; Lord, Lepper, & Preston, 1984) can help alleviate decision biases associated with sexual coercive behaviors.

Drawing from different fields (cognitive psychology and criminology) as well as different theoretical frameworks (e.g., information processing theory, rational choice theory, and I^3 theory), this study aims to address the gaps in the literature by exploring the role of decision making in sexual coercive behaviors among college males. The first general aim of this study is to examine how decision processes mediate the relationship between sexually coercive behaviors and its predictors (i.e., rape-supportive attitudes and alcohol consumption). The second general aim is to explore the feasibility of an intervention that aims to correct decision biases related to sexual coercive behavior.

The current study starts by presenting the prevalence of sexual aggression and the prevention programs currently available. The second section reviews the social-cognitive literature on sexual aggression, and emphasizes the need to examine decision processes underlying sexual coercive behavior. The third section expands on the decision processes, particularly highlighting the Rational Choice Theory and the Subjective Expected Utility as potential frameworks for both understanding and preventing sexual assault. The fourth section outlines the role of alcohol consumption in hampering decision processes, followed by a discussion of the proposed de-biasing intervention to be explored in this study.

Sexual Aggression Among College Students

Prevalence and Negative Consequences of Sexual Aggression

Depending on definitions, 29% to 39% of college women reported to have experienced attempted or completed sexual assault and rape (Koss et al., 1987; Krebs et al., 2007), much higher than the 18% lifetime prevalence in the general population (National Institute of Justice & Centers for Disease Control and Prevention, 1998). On the other hand, in a nationally representative sample of higher education students, 25% of men report having perpetrated some form of sexual assault, of that 4% report having committed rape (Abbey, McAuslan, & Ross, 1998; Koss, Gidycz, & Wisniewski, 1987). Research also indicate that half of all sexual aggressive acts on college campus involve alcohol use, wherein one or both parties are intoxicated or within a context of drinking (Abbey, 2002; Abbey et al., 1998; Harrington & Leitenberg, 1994; Testa, 2002). Making matters worse, the occurrence of sexual assault in 2011 among postsecondary institutions has increased by 52% from 2001 despite concerted efforts to curb it (Neville & Heppner, 2002; Robers et al., 2014).

Rape and sexual assault have deleterious effects and costs to both the victim and society. Sexual victimization is associated with substance abuse and engagement in other risky behaviors (Koss et al., 1991), chronic somatic problems (Koss & Heslet, 1990), depression and anxiety disorder (Gidycz et al., 2006), and Post Traumatic Stress Disorder (Kessler et al., 1995). Rape and sexual assault also have concomitant financial burden, with survivors estimated to spend $5,100 out of pocket per victimization, as well as estimated $81,400 intangible losses per victimization. This equates to $127 billion aggregated annual victim cost (Miller, Cohen, & Wierserma, 1996). There are substantial

costs too in prosecuting sexual offenses and aiding survivors. For instance, the State of Minnesota reportedly spent $130 million for justice-related costs and $91 million to aid survivors (Minnesota Department of Health, 2007). The cost of sexual violence was estimated to be $5.8 billion in the State of Iowa (Yang, Zhang, Miller, & LeHew, 2012) and $8 billion in the State of Minnesota (Minnesota Department of Health, 2007).

In acknowledgment of the gravity of the problem, the U.S. federal government mandated that sexual assault prevention interventions be implemented in higher education institutions that receive federal funding (Neville & Heppner, 2002). Given the high incidence of sexual assault among college women and that only 12% of the survivors report the crime to law enforcement (Bureau of Justice Statistics, 2012), innovative and efficacious primary prevention programs targeting college males are needed.

Current Sexual Assault Prevention Programs for College Males

A myriad of sexual assault prevention programs in a higher education setting have been documented and evaluated (for narrative and empirical reviews, see Anderson & Whitson, 2005; Breitenbecher, 2000; Brecklin & Forde, 2001; Flores & Hartlaub, 1998; Lonsway, 1996; Morrison, Hardison, Mathew, & O'Neil, 2004; Yeater & O'Donohue, 1999). These efforts have been addressed at different levels, starting from the macro (i.e., at the societal and cultural levels) down to the micro (i.e., individual level). Sexual assault prevention programs vary significantly in the format of delivery, duration of the programs, target audience, type of facilitator, etc. However the core component of these programs target cognitive risk factors that are believed to increase risk to committing sexual aggression, such as rape-supportive (e.g., rape myth acceptance), rape-related

attitudes (e.g., hostile attitude towards women), and schemas supportive of violence against women were found to be associated with sexual aggression (Malamuth, Heavey, & Linz, 1996; Murnen, Wright, & Kalunzky, 2002; Polaschek & Gannon, 2004; Ward, 2000).

Meta-analytic data show that sexual assault prevention programs in a university setting that target cognitive or attitudinal risk factors produce effect sizes between .30 and .35 (Brecklin & Forde, 2001; Flores & Hartlaub, 1998). Although a moderate impact on increasing factual knowledge about sexual assault (d = .57) was documented (Anderson & Whitson, 2005), a much lower effect was observed in reducing rape-supportive attitudes (d = .21) and rape-related/misogynistic attitudes (d = .13), increasing empathy towards rape victims (d = .07) and awareness about sexually assaultive behavior (d = .06), and lessening self-reported intent to rape (d = .14) and actual incidence of sexual assault perpetration (d = .10; Anderson & Whitson, 2005). Finally, attitude change effect sizes are much smaller for studies with longer follow-up times compared to studies with shorter ones, which could indicate that the effects are likely due to demand characteristics rather than real attitude change (Brecklin & Forde, 2001). Taken together, intervention research that takes a public health prevention approach (i.e., targeting attitudes) show that these interventions can increase knowledge about sexual assault, but additional prevention interventions are needed, particularly those that target more proximal factors associated with sexual coercive behaviors.

Relying on vulnerability theories (Ingram & Price, 2010), attitudes represent risk factors associated with an increased likelihood of a behavioral dysfunction (e.g., sexual coercive behaviors) but not the causal variables that creates the behavioral dysfunction.

As risk factors tend to be more distal in nature, this study posits that attitudes are precursors to more proximal cognitive mechanisms (e.g., decision making) that directly impact sexual coercive behaviors. The next sections will further develop the rationale supporting this assumption by first presenting a social cognitive framework contextualizes potential mechanistic candidates. Subsequent sections will then discuss the Rational Choice Theory and Subjective Expected Utility framework as plausible theoretical models to examine the underlying decision mechanisms.

Social Cognition in Sexual Aggression and Date-Rape

The current section summarizes the literature on the social cognitive frameworks that builds the foundation to conceptualize and further understand mechanisms associated with sexual coercive behavior among college males. This framework specifically categorizes social cognitions into cognitive products, structures, and processes (Gannon, 2009; & Langton, 2007). The following sections will argue that, despite most research focusing on cognitive products and structures (e.g., explicit and implicit attitudes), further examination of the less understood cognitive processes would establish empirical support for mechanisms that presumably directly impact sexual aggressive behavior within a college dating environment.

Cognitive Products

Cognitive products are beliefs, attitudes, inferences, and thoughts that are introspectively accessible to people (Gannon, 2009; Langton, 2007) which serve to justify male sexual aggression against women (Brecklin & Forde, 2001). For instance, rape myths include beliefs such as “only bad girls get raped” and “any healthy woman can resist rape if she really wanted to” (Burt, 1980). The rationale for cognitive products

is anchored on the greater social psychological literature suggesting that attitudes and beliefs drives behavior (e.g., Ajzen, 1991; Bohner & Dickel, 2011; Glasman & Albarracin, 2006; Greenwald et al., 2009). These attitudes and beliefs are also integral parts of several theoretical models of sexual aggression (e.g., Beech & Ward, 2004; Malamuth, Heavey, & Linz, 1996). The Confluence Model (Malamuth et al., 1991), for example, posits that Hostile Masculinity, a latent factor consisting of negative attitudes of women and an adversarial view about relationships with women, is a central predictor of sexual aggression. Of the various attitudes and beliefs, hypermasculinity (d = .61) and hostile masculinity (d = .58) were most predictive of self-reports of prior sexual aggression or likelihood to rape among college males, followed by hostility towards women (d = .54), acceptance of interpersonal violence (d = .52), rape myth acceptance (d = .44), and negative attitude towards women (d = –.20; Murnen, Wright, & Kalunzky, 2002).

As previously mentioned, the majority of sexual assault prevention programs aim to change cognitive products such as rape-supportive attitudes. However, research on attitude and attitude change indicates that correspondence with behavior is generally weak and the strength of the relationship is contingent on other factors (Bohner & Dickel, 2011; Glasman & Albarracin, 2006; Greenwald et al., 2009).

Cognitive Structures

Research on *cognitive structures* examines the knowledge structure and the strength of the associations among mental representations (Langton, 2007). The areas involved here covers topics such as schemas, stereotypes, scripts, and implicit cognitions (Langton, 2007). In addition, cognitive structures are presumed to be, for the most part,

non-conscious, and are governed by automatic processes. These schemas or implicit theories (Ward, 2000) about the self and the social world guide the interpretation of others' behaviors and guides one's own (Fiske & Taylor, 2013).

The examination of sexual offenders' implicit theories (Ward, 2000) is one active research program subsumed under cognitive structures. Implicit theories are likened to lay scientific theories that guide the explanation, prediction, and interpretation of social behavior and cognitive phenomena (Fisher & Beech, 2007). Unlike cognitive distortions, implicit theories are not easily expressed and are rarely articulated formally by the offender (Fisher & Beech, 2007). Five general implicit theories were identified in a sample of rapists: *entitlement* (men should have their sexual needs met on demand), *dangerous world* (men are justified in retaliating if offended by women), *women as sex objects* (women are perpetually in a state of sexual receptivity, and are created to meet men's sexual needs), *women are unknowable and dangerous* (women are inherently dishonest and manipulative, and cannot aptly communicate their sexual desires with men), and *male sex drive in uncontrollable* (Beech, Ward, & Fisher, 2006; Fisher & Beech, 2007; Polaschek & Gannon, 2004).

Apart from implicit theories, another area of research utilizes priming paradigms and implicit measures and methodologies to examine how non-conscious memory and knowledge structures and associations are related to sexual offending. In studies involving priming paradigms, the strength of the power–sexuality, women–sex, and women–hostility associations predicted increased likelihood towards sexual aggression (Bargh, Raymond, Pryor, & Strack, 1995; Leibold & McConnell, 2004; Zurbriggen, 2000). Using the Implicit Association Test, men who automatically associated women

with animals or objects were more likely to endorse rape-supportive attitudes and have higher rape proclivity (Rudman & Mescher, 2012).

Prevention programs aimed at changing sexual offense-related cognitive structures have not been articulated nor thoroughly examined. Some authors have recommended addressing sexual offenders' implicit theories as a core component of treatment (e.g., Ward & Keenan, 1999) utilizing specific techniques such as roleplay (e.g., Mann & Shingler, 2006) to change schemas. The efficaciousness of these specific schema-based interventions is still unclear. Research on other areas, however, suggests that implicit attitudes and stereotypes are more resistant to change compared to the more explicit attitudes (e.g., Macrae, Bodenhausen, Milne, Thorne, & Castelli, 1997). Cognitive products and structures related to sexual aggression, taken together, only consider predispositions towards a behavior and do not address more proximal cognitive processes. The next section will outline the literature on cognitive processes associated with sexually coercive behavior, and will present arguments suggesting that decision processes still needs to be further examined.

Cognitive Processes

Cognitive processes are the mechanisms that determine what information are attended to, how it is perceived, and what interpretations and attributions are made (Langton, 2007). From the information-processing literature of aggression, four macro-processes have been identified: 1) encoding and interpretation of social cues, 2) generation and selection of goals, behaviors, or scripts to guide behavior, 3) evaluation of the appropriateness of the selected script, 4) behavioral enactment (Crick & Dodge, 1994; Anderson & Heusmann, 2007). Applied to sexual coercive behaviors, McFall (1982,

1990) suggests similar processes: 1) decoding stage (incoming stimuli is perceived, organized, and interpreted), 2) decision making stage (behavioral responses are selected), and 3) enactment stage (selected response is enacted).

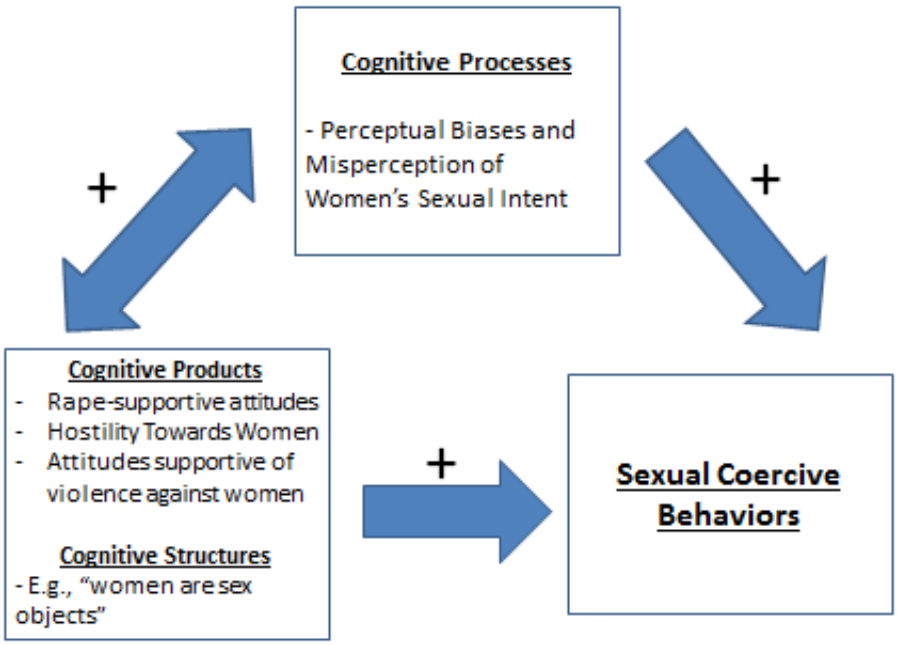
Of the information processing stages indicated, most sexual aggression research has been devoted to social cue recognition and misinterpretation of ambiguous social stimuli. From this perspective, perceptual biases and insensitivities to social, emotional, and sexual cues during heterosocial interactions results in attributions and interpretations that facilitate sexual aggression (Langton, 2007). For instance, the frequency of misperceiving a woman's sexual intent was associated with prior sexual aggressive acts (Abbey, Jacques-Tiura, & LeBreton, 2011). Furthermore, this area of research is anchored on the assumption that sexually aggressive men's cognitive schema and implicit theories impacts these perceptual biases. Utilizing theoretical frameworks such as the General Recognition Theory (Ashby & Townsend, 1986) and Signal Detection Theory (Green & Swets, 1966), research in this area indicates that college males with high rape-supportive beliefs were less accurate in decoding the women's affect and were more likely to misinterpret a woman's friendliness as sexual intent (Farris, Viken, Treat, & McFall, 2006; McDonel & McFall, 1991; Treat, McFall, Viken, & Kruschke, 2001).

Summary and Gaps in the Social Cognition Literature on Sexual Offending

In sum, Figure 1.1 presents a conceptual framework summarizing the general relationships amongst the social cognitive variables and sexual coercive behaviors. As the figure indicates, the literature on cognitive products and cognitive structures emphasize the role of sexual offense-supportive schema, attitudes, and beliefs. Although these studies have been replicated many times over and have yielded reliable effect sizes,

the focus has been on more distal factors of sexual aggression. The literature on cognitive processes, however, emphasizes more proximal predictors of sexual offending such as recognition and misinterpretation of social cues. Moreover, such processes act (theoretically) as a mechanism that links sexual aggressive cognitive products and structures to sexual coercive behaviors.

Figure 1.1. **Conceptual Framework Summarizing the Relationship among Cognitive Products, Cognitive Structures, Cognitive Processes, and Sexual Coercive Behaviors.**



Taken together, the proximal and mechanistic nature of cognitive processes represents a potential cognitive candidate for treatment. This study argues that, despite

extant data highlighting the role of social cue perceptions (e.g., Treat et al., 2001), the decision making process, which has received the least amount of empirical examination within this domain, (Langton, 2007) could be a better candidate to target for future interventions. As will be explicated further in the subsequent sections, this research posits that the decision making process of potential perpetrators may represent a key mechanism that substantially increases an at-risk male toward sexual coercive behavior. Furthermore, this study also argues that these problematic decision making processes can be corrected. The subsequent section will provide evidence to support these claims, starting with a discussion on the Rational Choice Theory and the Subjective Expected Utility paradigm (Cornish & Clarke, 2002), followed by an exposition of the research derived from our laboratory over the past 4 years (e.g., Tuliao, Klanecky, & McChargue, 2015; Tuliao, Landoy, Kalenecky, & McChargue, 2015).

Sexual Coercive Behaviors and Decision Making

The previous section introduced the notion that decision making cognitive processes may be a key mechanism that facilitates sexual coercive behaviors among at-risk college males. This section expounds on this idea by delineating well-established decisional theories (e.g., Savage, 1954). Next, a review of the extant evidence of the applicability of these theories within sexual aggression research is put forth. Lastly, methodological recommendations that would enhance our understanding of decision making processes within sexual aggression are introduced.

Subjective Expected Utility

Decades of evidence show that the Expected Utility Theory (EU; von Neumann & Morgenstern, 1947) and its derivate Subjective Expected Utility Theory (SEU; Savage,

1954, Payne, 1973) are the "gold" standard theories within judgment and decision sciences (Camerer & Weber, 1992). Both EU and SEU assume that decision makers are rational entities that aim to maximize the benefits or the utility of their actions. More specifically, the original EU theory assumes that decisions are made based on the probability estimate (*p*) of obtaining a desired outcome times the maximal utility (*U*) of that outcome. The basic equation is Expected Utility (EU) = $p(U(X))$. For example, an individual has a choice of picking one of two boxes. The first box has a maximum prize of $100 and the second box has a maximum prize of $50. Both boxes also have a 25% chance of obtaining the prize, EU theory assumes that individuals would choose box 1 over box 2 every time because box 1's EU is 25 whereas box 2's EU is 12.5. However, if the probability changes to 25% for box 1 and 60% for box 2, EU theory predicts that individuals would choose box 2 ($50) over box 1 ($100) because of the change in the respective EUs [(box 1=25); (box 2= 30)]. Stated differently, box 2 would be chosen because, despite the lower value, individuals would have a greater probability of obtaining the prize; thus maximizing the expected utility.

Several changes to the SEU theory were made over time. The first addition posits that the utility value is not constant across everyone. For instance, one cannot assume that a $100 gain is weighted similarly for a pauper compared with a millionaire. Second, the EU assumes that individuals have insight into the probability testing associated with their decisions. Third, the original formulation did not account for weighing potential costs (e.g., negative consequences) that are associated with a desired action. Due to these considerations, EU theorists expanded on the existing equation to incorporate subjective ratings by the individual; the *subjective expected utility* (or the subjective **value** of an

outcome) and *subjective probability* (or the subjective estimation of an outcome occurring). The revised formulation was also expanded to account for repercussions or the *subjective expected cost* (C) of an outcome (Payne, 1973). Hence, the subjective expected utility of behavior X can be framed as follows:

$$\text{SEU} = [p_{\text{subjective}}(U_{\text{subjective}}(\text{X}))] - [p_{\text{subjective}}(C_{\text{subjective}}(\text{X}))]$$

Changes to the original EU formulation are significant. First, these changes accommodate for inaccurate estimations that are potentially influenced by a number of factors (context, state, emotional, cultural, gender). Second, these changes also accommodate for individual valuation of the utility of an action, giving researchers the ability to obtain highly specific information about a specific population. Third, these changes address inhibiting factors of an action, which provides an avenue to investigate how to change a behavior by either minimizing positive values of an action or increases the salience of the costs associated with a behavior.

Subjective Expected Utility, the Rational Choice Model, and Sexual Coercive Behavior

The Subjective Expected Utility theory of decision making shares similar tenets with the Rational Choice Theory in criminology (Cornish & Clarke, 2002), which provides supportive evidence of SEU's function within sexual aggression research. Studies utilizing the Rational Choice Theory suggests that sexual offenders actively make choices on the location of the crime, the method of committing it, the choice of victim vis-à-vis her/his characteristics, and the method of approaching the potential victim (Beauregard & Leclerc, 2007; Beauregard, Leclerc, & Lussier, 2012; Beauregard, Rebocho, & Rossmo, 2010; Beauregard, Rossmo, & Prolux, 2007; Beauregard, Proulx, Rossmo, Leclerc, & Allaire, 2007). In addition, according to the Rational Choice

Theory, criminals weigh the rewards and costs of pursuing a set of alternative courses of action in order to attain the desired goal. Commission of a crime therefore is perceived as the most effective and most efficient means of achieving a desired goal (e.g., sexual gratification, money, or domination of others). Stated differently, the subjective expected utility of a crime (SEU_{crime}) is more likely to be committed when the benefits or utility (U) outweighs the subjective probability (p) of being caught and the associated costs or penalty of the crime (C; Becker, 1968; Mehlkop & Graeff, 2010):

$$SEU_{\text{crime}} = U - pC$$

Sexual coercive behavior, therefore, is presumed to be instrumental (i.e., aggression to obtain a specific outcome) in nature.

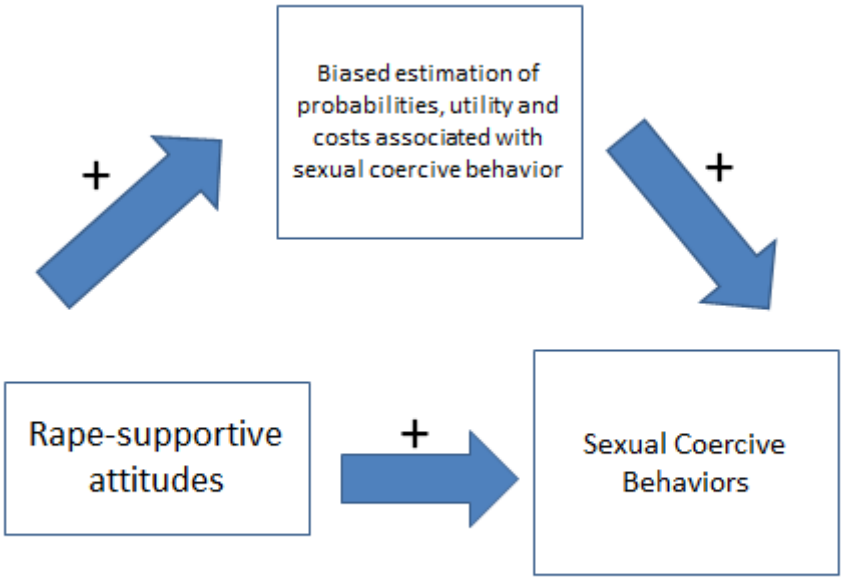
Other Rational Choice Theory studies suggest that the consideration of benefits (Bouffard, 2002) and costs (Bachman, Paternoster, & Ward, 1992; Bouffard, 2002, but only at the bivariate level) are associated with the intent to sexually offend. Furthermore, rape-supportive attitudes are associated with an underestimation of risks and overestimation of rewards in a date-rape vignette study (Bouffard & Bouffard, 2010). To make sense of these relationships, the information-processing model suggest that social decision makers can resort to preexisting knowledge and expectations, schema, scripts, memory, and implicit theories (Fiske & Taylor, 2013; Nisbett & Ross, 1980; Ward, 2000). In addition, attitudes serve a functional role, in that attitudes make decision making less effortful (Fazio & Olson; 2007; Fazio, Blascovich, & Driscoll, 1992).

Figure 1.2 presents a conceptual framework that summarizes the relationship among rape-supportive attitudes, Subjective Expected Utility estimates, and sexual aggressive behavior. Overall, studies utilizing Rational Choice Theory suggest that the

probability of sexual offending is high when the individual perceives that the benefits of the criminal behavior outweigh the potential negative effects (e.g., Bachman et al., 1992; Bouffard, 2002, 2011). Research also indicates that rape-supportive attitudes are associated with perceptions and judgments regarding risks and rewards of sexual coercive behaviors. As such, Figure 1.2 mimics assumptions related to the relationship among cognitive products and structures, cognitive processes, and sexual coercive behaviors (see Figure 1.1).

One limitation of the current research on decision processes underlying sexual coercive behavior is the assumption that offenders make only one decision throughout the perpetration of the crime, i.e., the decision to offend. This is contrary to some assertions indicating that a chain of decisions is made throughout the commission of a crime (Cornish & Clarke, 2002). Consistent with this line of thought, the notion of SEU estimates are dynamic and change throughout a sexual aggressive action is further explicated within the next section. This notion is also not mutually exclusive to the methods used to examine SEU questions. As such, the next section discusses a more dynamic SEU examination with the context of date-rape methodology.

Figure 1.2. **Conceptual Framework Summarizing the Relationship among Rape-Supportive Attitudes, Subjective Estimates of Utility and Cost of Sexual Coercive Behavior, and Sexual Coercive Behavior.**



The Need to Examine Processes in Rational Choice Theory and Subjective Expected Utility

Studies examining date-rape and sexual aggression, particularly those that rely on the Rational Choice Theory framework, often utilize hypothetical scenario designs or vignette methodologies (e.g., Angelone, Mitchell, & Lucente, 2012; Davis, Schraufnagel, Jacques-Tiura, Norris, George,& Kiekel, 2012; Flowe, Stewart, Sleath, & Palmer, 2011; Gross, Bennet, Sloan, Marx, & Juergens, 2001; Hannon, Hall, Nash, Formati, & Hopson, 2000; Loh, Orchowski, Gidycz, & Elizaga, 2007; Maurer & Robinson, 2008; Messman-Moore & Brown, 2006; Testa, Livingston, & Collins, 2000). In these hypothetical scenarios or date-rape vignette designs, a typical scenario starts out with a heterosexual

couple engaging in flirtation and consensual kissing, followed by unwanted touching and petting, verbal coercion, physical coercion that ends in rape. Respondents are typically asked to either assume the role of the perpetrator/potential perpetrator or a third-person observer.

Although there is heterogeneity in how rape and date rape vignette studies measure dependent variables, these studies can be categorized into two types. In the first, participants provide responses only *after* reading the vignette (e.g., Koo et al., 2012). These dependent variables may include (but are not limited to) intent to sexually aggress, potential for sexual victimization, risk perception, perception of sexual intent, sexual arousal, perceptions of culpability or blameworthiness, and other perceptions about the perpetrator and victim (e.g., Davis et al., 2012; Hannon et al., 2000; Loh et al., 2007; Maurer & Robinson, 2008). In the second, a measure of response latency is used. Specifically, a participant either listens to an audio-recorded vignette (Gross et al., 2001) or reads a vignette (e.g., Flowe at al., 2011; Messman-Moore & Brown, 2006). During these exercises, they are instructed to indicate the point at which they would stop the social interaction. This measurement is informative because a) those who stay in the scenario longer are more likely to self-report prior sexual aggressive acts and b) it differentiates those more likely to become sexual coercive (e.g., Marx, Gross, & Adams, 1999).

Despite vignette response associations with prior sexual aggressive behavior, single outcome measurements in vignette or hypothetical scenario designs are limited for three reasons. First, qualitative studies suggest that the progression from consensual sexual activities to rape or date rape may not be strictly monotonic (Rinehart & Yeater,

2011; Testa & Livingston, 1999). That is, the dynamics of sexual victimization include multiple push-and-pull or approach–avoid interactions involving resistance followed by a change in behavior in one or both parties. This could lead to a continuation of the sexual interaction, an end of the sexual interaction, or to an escalation with more coercive tactics. Hence, measuring the dependent variable (e.g., intent to commit sexual aggression, or subjective expected probability of benefit or cost) only at the end of the vignette narrative is not sensitive to the fluctuations occurring throughout the scenario. Applied to the present study, SEU estimates could fluctuate throughout the date-rape scenario depending on what each of the individuals in the narrative decides to do. As much as SEU estimates of bringing an umbrella to work could substantially vary depending on whether the skies have dark clouds, SEU estimates during a date-rape scenario could also substantially change depending on whether the potential victim is manifestly resisting the perpetrator or seemingly acquiescing to his demands.

Second, the need for rape and date-rape vignettes to incorporate more realistic contextual dynamics is made more salient given the contemporary aggression models' emphasis on the person–environment interaction. For instance, social-cognitive information-processing models (e.g., Anderson & Bushman, 2002; Slotter & Finkel, 2011) suggest that encoding and interpretation of environmental stimuli influences the generation and selection of social goals, cognitive scripts, and behaviors. However, the context in which aggression unfolds is not static; rather the social environment continuously changes depending on the actions taken by both the perpetrator and victim. Furthermore, the perpetrator's and the victim's actions are influenced by a continuous interpretation and evaluation of the appropriateness of the behavior to the social context.

Hence, moment-by-moment changes in social cues could change information processing and subsequent behavior. Methodologies therefore need to approximate not only the person-environment interaction, but also the dynamism inherent in events leading to aggression.

Third, the Rational Choice Theory suggests that "all crimes, even the simplest, involve such chains of decisions and actions, separable into interdependent stages, involving the attainment of sub-goals that serve to further the overall goals of the crime" (Cornish & Clarke, 2002, p. 47). To further understand the offender's decisions and actions, Cornish (1994a, 1994b) introduced the concept of a crime script and subdivided a crime into its constituent parts (e.g., preparation, target/victim selection, procedure in crime commission, and escape). For instance, in sexual assault involving non-acquaintance female victims, Cornish (1999) identified nine phases: preparation (development of sexual fantasies and selection of victim-rich setting), entry into setting, preconditions (evaluating the setting for appropriateness for commission of crime), instrumental preconditions (identification of suitable victims), instrumental initiation (preliminary grooming and nonthreatening approach), instrumental actualization (isolation from other people and possible witnesses), commission of sexual assault, disengagement, and exit from setting (disposal of evidence). Applied to the present study, it is essential to examine how SEU changes' depending on the stage of the commission of the crime, as well as which stage's SEU is most associated with sexual assault. A thorough understanding of which stage is crucial is fundamental in the development of sexual assault intervention among college males.

In summary, hypothetical scenario and date-rape vignette designs needs to be sensitive to the dynamism inherent in sexual aggression. The commission of sexual aggression involves several stages, and understanding the decisional processes involved at each stage can benefit and can be the focus of potential intervention. Furthermore, the dynamics of date rape or sexual assault does not follow a neat trajectory that moves from flirtation, to verbal coercion, physical coercion, to rape. Date rape dynamics involve multiple push-and-pull or approach-and-avoid dynamics which could impact the decisions of potential sexual offender.

In response to the methodological limitations, Tuliao, Hoffman, and McChargue (2014) developed a date-rape vignette methodology that allows for multiple measurements of a dependent or criterion variable as a date-rape is unfolding (see Methods section for a thorough description of the date-rape vignette stimuli and analysis). The overall story is similar to other studies (e.g., Gross et al., 2001): male and female college students meet in a bar, followed by the female's invitation to her apartment, followed by flirtation and consensual kissing, which escalates into verbal and physical coercion, and finally culminates to date-rape. The date-rape scenario was broken down into 18 time points or events wherein participants were asked to make judgments and decisions regarding the events that are unfolding in that specific time point. In order to provide support for the use of a dynamic date-rape methodology, preliminary result of a study that utilized this date-rape vignette methodology with SEU estimates are presented next.

Preliminary Examination of SEU Utilizing a Dynamic Date-Rape Vignette Methodology

Tuliao, Landoy, Klanecky, and McChargue (2015) examined the role of SEU in sexual coercive behavior utilizing a date-rape vignette methodology that is measured across multiple times of the date-rape scenario. Using the vignette methodology outlined previously (Tuliao et al., 2014), Tuliao et al. (2015) asked college male participants at each of the 18 time points, if they were the male in the scenario, 1) how important is it for them to have sex with the female in the scenario (0 = not important – 10 = very important), 2) what is their probability estimate that the female actually wants to have sex with them (0 = 0% – 10 = 100%), 3) how important is it for them to avoid having the female interpret his actions as sexual aggression (0 = not important – 10 = very important), 4) what is their probability estimate that the female will interpret his actions as sexual aggression (0 = 0% – 10 = 100%). These questions correspond to the SEU components: utility (*U*), expected probability of the utility (*p* of *U*), cost (*C*), and expected probability of cost (*p* of *C*), respectively:

$$\text{SEU} = \text{U(p of U)} - \text{C(p of C)}$$

To eliminate the negative values, a constant of 100 was added:

$$\text{SEU} = (\text{U(p of U)} - \text{C(p of C)}) + 100$$

This yielded a range of 0 to 200, with higher values indicating an emphasis of the utility of engaging in sexual coercive behaviors and an undervaluing of the costs associated with it.

Figure 1.3 presents the SEU estimates of a combined sample of U.S. (n = 333; m_{age} = 19.85, sd = 2.37) and Filipino (n = 43; m_{age} = 17.19, sd = 1.10) male university students in the continuously measured date-rape scenario. Overall, no significant country

differences were observed. After collapsing across country, results (i.e., pertaining to the unconditional model) indicated that SEU estimates significantly increased during events involving flirting and consensual kissing (e1 to e5 slope $b = –4.81$, $SE = 0.98$, $p < .01$, quadratic $b = 1.50$, $SE = 0.23$, $p < .01$) and events wherein the female attempts to repair the relationship (e9 to e11 slope $b = 17.69$, $SE = 1.24$, $p < .01$). SEU estimates significantly decreased when the female in the scenario was actively rejecting the male's sexual advances (e5 to e9 slope $b = –16.30$, $SE = 0.83$, $p < .01$) and when the male was starting to engage in verbal and physical coercion (e11 to e13 slope $b = –15.21$, $SE = 1.09$, $p < .01$). For the conditional model (i.e., including predictors in the model), results indicate that males with more positive attitudes regarding sexual dating violence had higher SEU estimates at the start of the date-rape scenario (intercept $b = 0.91$, $SE = 0.24$, $p < .01$), more positive slopes during flirtation and consensual kissing (e1 to e5 slope $b = 0.32$, $SE = 0.13$, $p = .02$), and elevated SEU estimates were carried over throughout the date-rape scenario.

Furthermore, elevated SEU estimates at the start and throughout the date-rape scenario were associated with higher likelihood of sexual aggression. Utilizing a latent piecewise growth curve model, the intercept factor scores ($b = 0.05$, $SE = 0.01$, $p < .01$) and the steepness of the slope during the flirtation and consensual kissing (e1 to e5 slope $b = 0.13$, $SE = 0.03$, $p < .01$, quadratic $b = 0.42$, $SE = 0.16$, $p < .01$) predicted how long the male participants were willing to stay in the date-rape scenario (the operational definition for propensity towards sexual coercive behavior). In addition, bivariate regression analyses of SEU estimates at each event (e1 to e18) predicted likelihood to sexually assault and self-reports for past sexually aggressive behavior (see Table 1).

Figure 1.3. **Predicted SEU Estimates Across a Date-Rape Scenario Comparing Participants with High and Low Attitude Towards Sexual Dating Violence (ATSDV).**

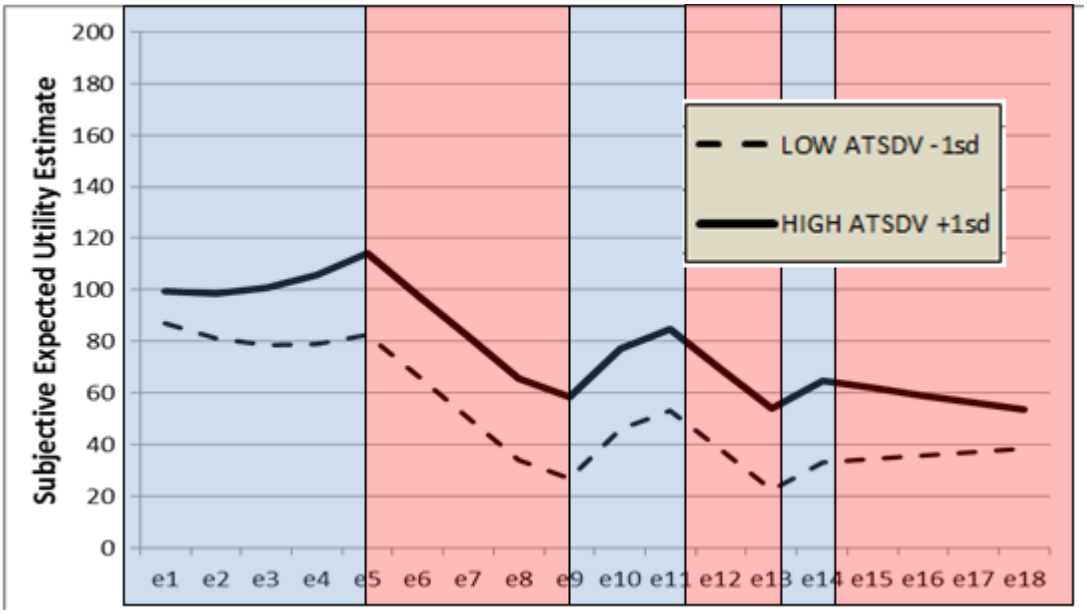


Table 1.1. **Bivariate Regression Analysis of SEU Scores at Each Time Point of the Date-Rape Vignette Predicting Intent to Sexually Assault and Prior Self-Reports of Sexual Aggression**

	Propensity Towards Sexual Coercive Behavior			Prior Sexual Coercive Behavior Self-Report		
	b	*SE*	β	*b*	*SE*	IRR
event 1	0.04**	0.01	0.31	0.02**	0.01	1.02
event 2	0.04**	0.01	0.37	0.01	0.00	1.01
event 3	0.05**	0.01	0.38	0.01**	0.00	1.01
event 4	0.04**	0.01	0.38	0.01*	0.01	1.01
event 5	0.04**	0.01	0.39	0.00	0.00	1.00
event 6	0.03**	0.01	0.37	0.01**	0.00	1.01
event 7	0.03**	0.01	0.35	0.01**	0.00	1.01
event 8	0.03**	0.01	0.29	0.01**	0.00	1.01
event 9	0.02**	0.01	0.27	0.01**	0.00	1.01
event 10	0.03**	0.01	0.31	0.01**	0.00	1.01
event 11	0.02**	0.01	0.31	0.01**	0.00	1.01
event 12	0.02**	0.01	0.23	0.02**	0.00	1.02
event 13	0.02**	0.01	0.23	0.02**	0.00	1.02
event 14	0.02**	0.01	0.28	0.02**	0.00	1.02
event 15	0.02*	0.01	0.18	0.02**	0.00	1.02
event 16	0.01	0.01	0.13	0.02**	0.01	1.02
event 17	0.01*	0.01	0.13	0.03**	0.01	1.03
event 18	0.01	0.01	0.08	0.02**	0.01	1.02

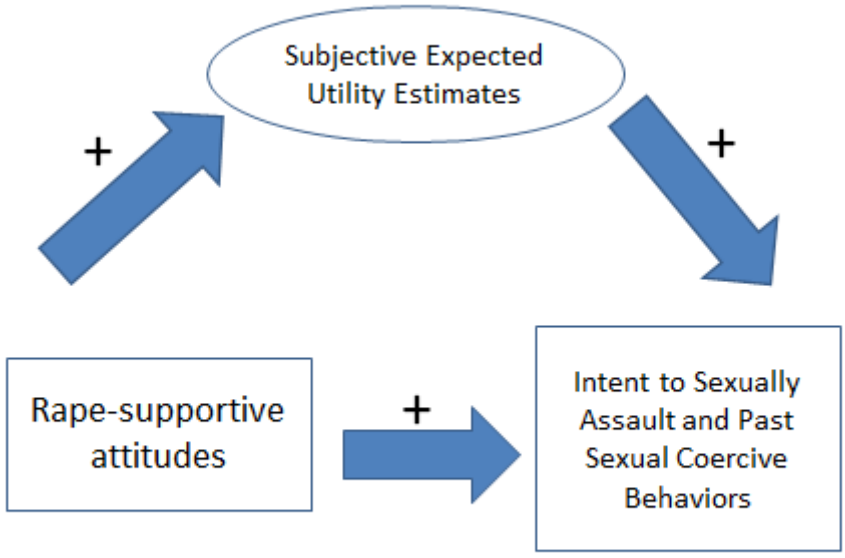
* $p < .05$, ** $p < .01$.

Note. Prior sexual assault was measured using the Sexual Experiences Survey – Males (Koss, Gidycz, & Wisniewski, 1987), and was analyzed using Poisson regression. IRR = incidence rate ratio.

Figure 1.4 presents a conceptual representation that summarizes the preliminary results of the Tuliao et al.'s (2015) study. In summary, the research presented in this section suggests that decision making, particularly subjective expected utility estimation, is a potential mediator of the attitude-sexual coercive behavior relationship. As such, it is plausible to surmise that intervening at the decision making stage could aid in mitigating

the impact of date-rape-supportive attitudes and reduce the probability of sexual aggression among at-risk college males.

Figure 1.4. **Conceptual Framework Summarizing the Relationship among Rape-Supportive Attitudes, Subjective Expected Utility Estimates, and Sexual Aggression (Tuliao et al., 2015).**



Alcohol Intoxication, Decision Making, and Sexual Aggression

The preceding sections argued that biased decision processes are the key underlying mechanism that drives sexual coercive behavior. Utilizing the Subjective Expected Utility as the core theoretical framework, a preliminary study indicated that overemphasizing the benefits and the undervaluation of the costs of engaging in sexually coercive behavior was associated with past self-reports and propensity towards sexual aggression (Tuliao et al., 2015). Rape-supportive attitudes were also found to bias these

SEU estimates and impact sexual coercive behaviors. Furthermore, it was also argued that sexual coercive behavior needs to be conceptualized as dynamic and unfolding over time rather than static or monotonic. Hence, methodologies studying decisions associated with sexual coercive behaviors need to account for these intricacies and dynamisms.

In addition to rape-supportive attitudes, there is a need to examine other factors that bias decision processes. Given that 50% of all sexual aggressive acts on college campus involve alcohol use, wherein one or both parties are intoxicated or within a context of drinking (Abbey, 2002; Abbey et al., 1998; Harrington & Leitenberg, 1994; Testa, 2002), it is essential to examine how alcohol consumption influences decision processes. Although the interaction between rape-supportive attitudes and the disinhibiting effect of alcohol have previously been demonstrated (e.g., Testa & Livingston, 2009), the specific role of alcohol consumption in influencing SEU estimates is still unclear. From an intervention perspective, it is essential to understand if and how alcohol impairs sex-related decision processes, and how this knowledge can be incorporated in sexual assault prevention programs.

Alcohol Consumption and Sexual Aggression

A variety of models that account for the alcohol consumption-sexual aggression relationship exist, however these frameworks consider decision impairment *at the time of the sexual assault* and *at the time when the perpetrator was intoxicated*. For example, neurocognitive aggression models (e.g., Alcohol Myopia Model, Steele & Josephs, 1990) posit that alcohol impairs cognitive processing by restricting the range of cues that a person can attend to, thereby discounting other peripheral, but otherwise important,

inhibiting social cues. In addition, anxiolytic-disinhibition models of aggression (e.g., Spielberger, 1972) suggest that alcohol inhibits the anxiety associated with aversive consequences. Lastly, the I^3 theory of aggression (Slotter & Finkel, 2011) posits that *instigating triggers* toward aggression are influenced by factors that *impel* (increase the likelihood of aggression) or *inhibit* (decrease the likelihood of aggression) the aggressive impulse. Instigating triggers are proximal/situational events (e.g., sexual rejection) that are essential for aggression to occur. Sexual aggression risk is, therefore, contingent on the relative strength of impelling forces (e.g., rape-supportive attitudes) and disinhibiting forces (e.g., alcohol intoxication).

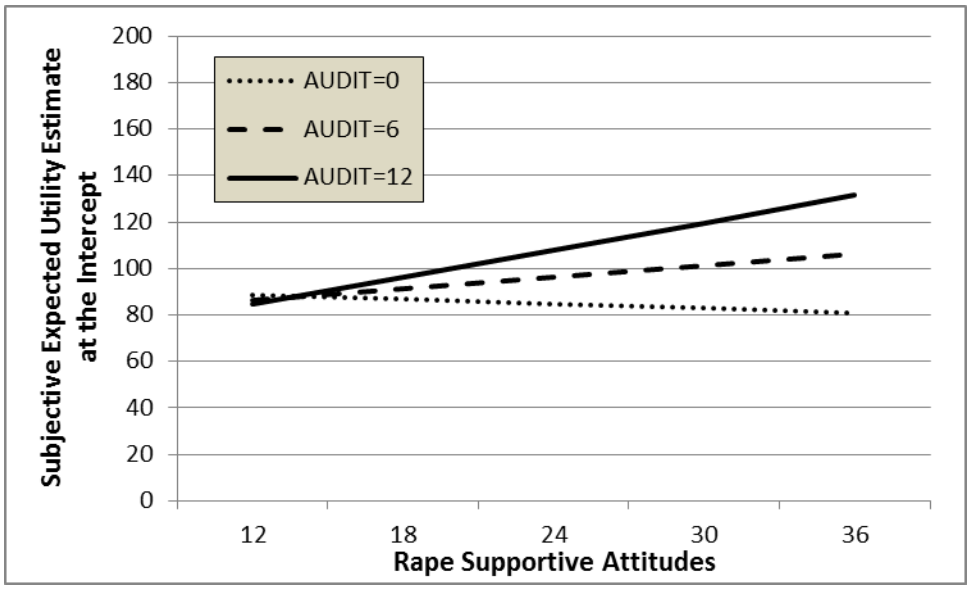
The models discussed emphasize alcohol's effect in hampering judgment and decision making. Applied to sexual assault, it is expected that severity of alcohol use aggravates the relationship between rape-supportive attitudes and past sexual assault behavior. In prior studies that utilize retrospective self-reports, hostile masculine beliefs and attitudes and heavy alcohol consumption contribute to increase the frequency of misperceiving a woman's sexual intent, which was subsequently positively associated with sexually coercive behavior (Abbey, Tiura, & LeBreton, 2011; Tiura, Parkhill, Abbey, & Zawacki, 2007). A reanalysis of the Tuliao et al. (2015) study replicates these findings, indicating that date-rape-supportive attitudes ($b = 0.10$, $SE = .03$, $p < .01$) and heavy alcohol consumption ($b = .19$, $SE = .08$, $p = .02$) independently predict past sexually coercive behavior.

Alcohol Consumption, Binge Drinking, and Decision Making

The studies and the theoretical models previously outlined posits that *past sexual assault* is a function of the interaction of rape-supportive attitudes and alcohol use

severity, which reflects the decisional impairment brought about by alcohol intoxication. However, these studies assume decisional impairment is *at the time of the sexual assault* and *at the time when the perpetrator was intoxicated*. In other words, for alcohol to impair judgment, an individual needs to be intoxicated at the time of the decision process. Contrary to this assumption, our previous data (Tuliao et al., 2015) showed an interaction between date-rape-supportive attitude and heavy alcohol use predicted intercept SEU estimates (i.e., at the start of the date rape scenario) *among non-intoxicated participants*. Specifically, as Figure 1.5 illustrates, those with high rape-supportive attitudes and regular heavy alcohol consumption had a much higher SEU estimate.

Figure 1.5. **Alcohol Consumption, Rape-Supportive Attitudes, and Subjective Expected Utility**



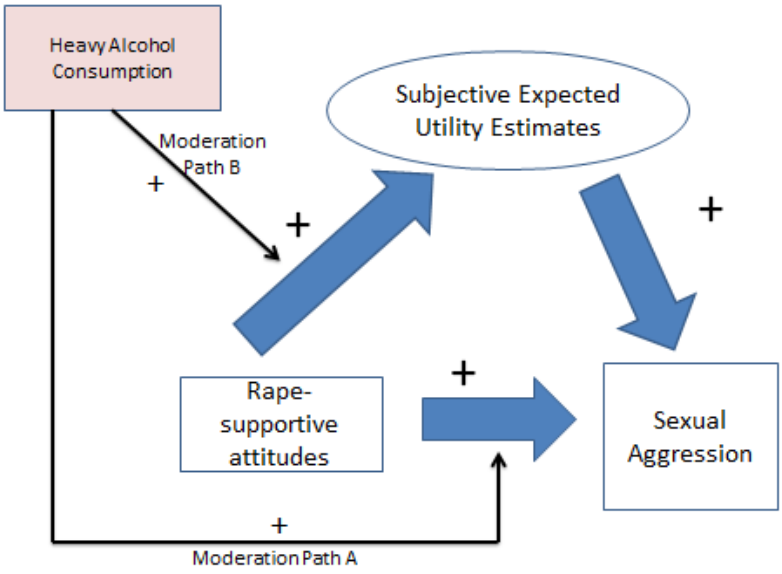
Note: AUDIT = Alcohol Use Disorder Identification Test Alcohol Consumption items.

This result provides preliminary evidence that binge drinking may have a residual impact on decision making. Consistent with this idea, Goudriaan, Grekin and Sher (2007) showed that a sample of heavy binge drinkers during non-intoxicated states compared with low binge drinkers were more likely to engage in disadvantageous decision making as measured by the Iowa Gambling Task. Furthermore, these decision making deficits were not attributable to impulsivity (Goudriaan et al., 2007). Moreover, prior research supports the hypothesis that alcohol exposure chronically impairs decision making, cognitive- and executive-functioning among persons with alcohol dependence (Bechara , Dolan, Denburg, Hindes, Anderson, & Nathan, 2001; Giancola & Moss, 1998; Neafsey & Collins, 2011) as well as among heavy social drinkers (i.e., non-alcohol dependent sample; Parsons & Nixon, 1998). Researchers attribute these residual cognitive impairments to alcohol-induced neural dysfunction, particularly in brain regions that are essential to evaluation and appraisal of positive and negative consequences (e.g., the ventromedial prefrontal cortex, striatum, and basal ganglia; Goldstein & Volkow, 2002). Overall, to the extent that binge drinking produces residual cognitive impairment among males at risk of committing sexual perpetration, one may assume that such impairment would impact decisional tasks within an experimental design.

As such, Figure 1.6 presents a conceptual framework summarizing the impact of alcohol on sexual coercive behavior. Research suggests that alcohol consumption can affect both sexual aggression and decision making both proximally and distally. In the short term, alcohol intoxication impairs judgment by inhibiting anxiety associated with committing aggressive behaviors and limiting restricting the range of social cues that a

person can attend to (Figure 1.6, Moderation Path A). Specifically, prior studies suggest that alcohol magnifies the relationship between rape-supportive and misogynistic attitudes and sexual aggression. In the long term, chronic heavy drinking can also lead to neurological impairments, particularly in areas associated with decision making (Figure 1.6, Moderation Path B). As indicated by prior studies (Tuliao et al., 2015), college male students with high alcohol consumption and high attitudes supportive of data rape violence had a much higher SEU estimates.

Figure 1.6. **Conceptual Framework Summarizing the Relationship among Alcohol Consumption, Rape-Supportive Attitudes, Subjective Expected Utility Estimates, and Sexual Aggression.**



Summarizing the Sexual Aggression Literature: Attitudes, Alcohol, and Decisions

A large body of data has suggested the inextricable role of rape-supportive attitudes on sexual coercive behavior. In turn, current sexual assault prevention programs for male college students are anchored on changing these misogynistic and rape-supportive attitudes. In the previous sections we argued that attitudes represent distal risk factors associated with sexual aggression, but not necessarily representative of the underlying mechanism driving the aberrant behavior. Moreover, the reviewed literature consistently pointed to decision processes as a mediator of the rape-supportive attitude and sexually coercive behavior relationship. Utilizing the Subjective Expected Utility model and the Rational Choice Theory, this dissertation posits that potential sexual offenders weigh the utility and the cost of a criminal act. Given that decision making is the critical mechanism that links rape-supportive attitudes and alcohol consumption to sexual aggression, changing how at-risk males make these decisions could be a target for adjunctive interventions. Accordingly, one of this study's aim is to test the hypothesis that prescriptive adjustment of SEU estimates would dramatically reduce propensity towards sexual coercive behavior, at least as measured within the date-rape vignette methodology. The next section delineates a model for such alteration.

De-biasing: Consider-the-Opposite as a Promising Prevention Intervention for Sexual Coercive Behaviors Among College Males

It was previously argued that changes in decisional processes could dramatically change the cascade of relationships among rape-supportive attitudes, alcohol consumption, and sexual coercive behaviors. Hence, proximal decisional processes are prime candidates to intervene in. This section builds upon this argument by presenting a

novel prescriptive decision making manipulation (i.e., de-biasing) that asks potential perpetrators to actively challenge his SEU estimates across a date-rape vignette. As such, the literature on de-biasing will be briefly presented and an argument about how this technique could aid in attenuating decisional biases that lead to sexual coercive behavior will be discussed.

More specifically, prescriptive decision making manipulations aim to identify and correct biases or to "de-bias decisions" in order to improve decision quality (Arkes, 1991; Fischhoff, 1982; Larrick, 2004; Soll, Milkman, & Payne, in press). Given the number of possible sources of decisional biases (psychophysically-based, association-based, and strategy-based errors; Larrick, 2004), there are a multitude of corresponding prescriptive manipulations. These manipulations can be broadly categorized into motivational strategies (increasing motivation to arrive at an accurate estimate and holding individuals accountable for their decisions), cognitive strategies (training in the proper utilization of decision rules and problem representations, and educating about decision biases), and technological strategies (utilization of technological tools that improve decisions; Larrick, 2004). Furthermore, these manipulations can be implemented at the person level (or "modifying the person") or at the environment level (or "modifying the environment"; Soll et al., in press).

Of the number of possible de-biasing manipulations, the consider-the-opposite technique (Lord et al., 1984) has been found robust enough to improve accuracy of estimates (Herzog & Hertwig, 2009, 2013) and attenuate several cognitive biases such as hindsight bias (Fischhoff, 1975), confirmation bias (Lord et al., 1984; Snyder & Swann, 1978), attitude polarization bias (Lord, Ross, & Lepper, 1979), belief perseverance (Ross,

Lepper, & Hubbard, 1975), overconfidence (Hoch, 1985), and anchoring (Galinsky & Mussweiler, 2001). Furthermore, consider-the-opposite performed better at reducing decisional biases compared to asking individuals to be unbiased or offering financial rewards (Lord et al, 1984; Wilson, Houston, Etling, & Brekke, 1996).

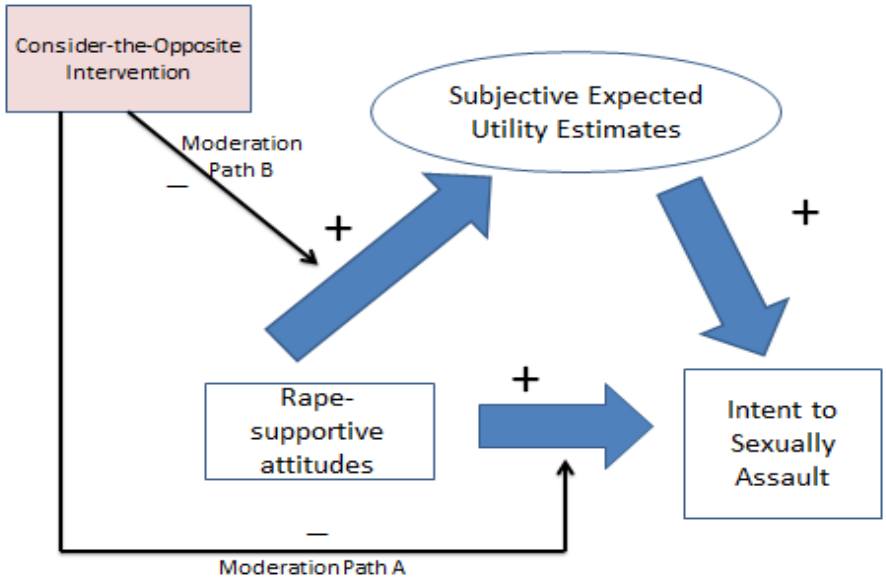
As the name suggests, consider-the-opposite asks research participants to actively take into account information that is inconsistent with one's initial estimation or beliefs. This prescriptive method is hypothesized to be the best strategy in correcting biased SEU estimates for various reasons. First, in asking individuals to reassess their initial estimates and consider possible contrary evidence, they can achieve more realistic and accurate estimates. Herzog and Hertwig's (2009) reported data that reassessing initial factual and numerical evidence helps individuals achieve more realistic and accurate estimates. Specifically, they showed that the accuracy of guessing the date of 40 historical events improved for those in the consider-the-opposite condition compared to those who were simply asked to make another estimate. This approach is consistent with SEU estimations that are presumed numerical representations of the subjective probability of the utility and costs occurring, as well as the subjective importance of attaining the gains and avoiding the repercussions of a course of action.

Second, consider-the-opposite attenuates anchoring effects (Galinsky & Mussweiler, 2001). As our preliminary study suggests, higher rape-supportive attitudes were associated with higher SEU estimates in a date-rape scenario, particularly at the start of the social interaction (Tuliao et al., 2015). In addition, these elevated SEU estimates were consistently high across the date-rape scenario. One interpretation is that rape-supportive attitudes set a high anchor for the SEU estimates across the perpetration

of the crime. By considering possible reasons that their initial anchors are faulty, individuals can set a more realistic SEU estimate anchors, which would influence subsequent SEU estimates. Third, consider-the-opposite fosters attitude change without the attending attitude polarization (Lord et al., 1984). In Lord and colleagues' (1984) study, participants who were in the consider-the-opposite condition were more likely to change their attitude regarding capital punishment and less likely to strengthen their original position compared to those who were presented with conflicting evidence or those who were asked to be unbiased.

Figure 1.7, which is an extension of previous conceptual frameworks (e.g., Figure 1.4), presents a conceptual framework of the possible pathways wherein considering-the-opposite intervention can impact sexual coercive behaviors. Moderation Pathway A suggests that the consider-the-opposite intervention will attenuate the impact of rape-supportive attitudes on propensity towards sexual coercive behavior. In other words, at-risk males (i.e., males with high rape-supportive attitudes) who utilize consider-the-opposite will have a much lower likelihood to sexually assault compared to at-risk males who do not. Moderation Path B represents the assumption that the consider-the-opposite manipulation directly changes decision processes. In particular, considering-the-opposite serves to mitigate the impact of rape-supportive attitudes on the decision processes by lowering the SEU estimates of at-risk males, which subsequently lowers the likelihood of sexual coercive behavior.

Figure 1.7. **Conceptual Framework Hypothesizing Possible Moderation Pathways.**



Specific Aims and Hypotheses in this Study

Prior research points to rape-supportive attitudes as the main culprits in sexual coercive behaviors among college males (i.e., from a regression or path analysis framework: rape-supportive attitudes → sexual coercive behavior). Yet, decision processes implicated in sexual assault have not been thoroughly examined, and their potential as an area for prevention efforts have yet to be explored. According to the Rational Choice Theory, offenders actively make decisions at every step of the commission of the crime, from victim selection, the manner of perpetration, the manner of dealing with victim resistance, to disposing of evidence. This suggests that methodologies aimed at studying decisions in date-rapes and sexual coercive behaviors should be sensitive to these stages. Studies utilizing the Rational Choice Theory often used the Subjective Expected Utility framework, which suggests that offenders weigh the

utility and the potential repercussion of a committing crime. Preliminary work also indicated that SEU estimates across a date-rape vignette scenario mediated the relationship between rape-supportive attitudes and the propensity to commit sexual coercive behavior in a sample of male college students (Tuliao et al., 2015). In particular, rape-supportive attitudes predicted biased SEU estimates, which subsequently predicted tendencies to commit sexual aggression (rape-supportive attitude → SEU estimates → sexual coercive behavior).

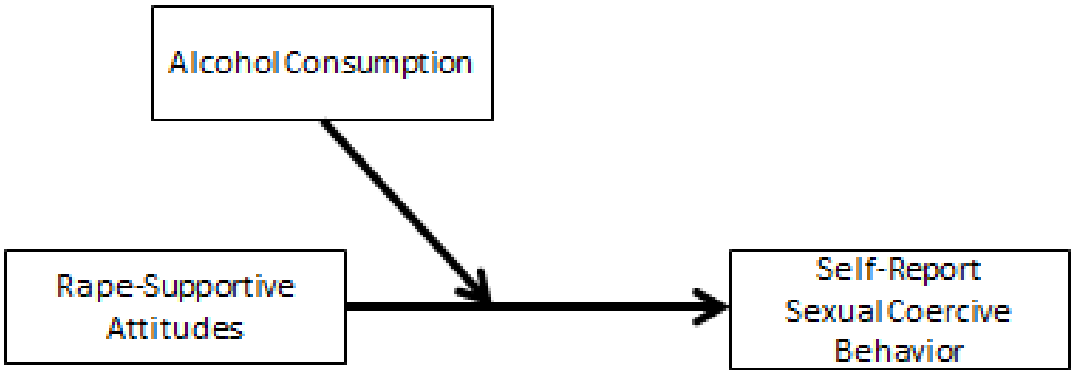
Two moderators that affect the rape-supportive attitude – SEU estimates – sexual coercive behavior relationships were also proposed. First, alcohol consumption tends to disinhibit decision processes, such that those who are predisposed or at a higher risk (i.e., those with higher rape-supportive attitudes) are more likely to perpetrate sexual coercive behaviors when alcohol consumption is high. Second, by utilizing de-biasing techniques, decision making is expected to improve, thereby abrogating the effects of rape-supportive attitudes and alcohol consumption on decisions (i.e., through SEU) and subsequent sexual coercive behaviors.

Specific Aim 1: Examine the Interaction between Rape-Supportive Attitudes and Alcohol Use in Predicting <u>Past</u> Sexual Coercive Behavior.

The purpose of this aim is to replicate previous findings and to serve as a theoretical springboard for the subsequent examination of the role of SEU decision processes in sexual aggression. Past sexual coercive behavior for this aim will be measured by self-reports. Prior research implicates rape-supportive attitudes as predictors of sexual coercive behaviors among college males (see Figure 1.8: rape-supportive attitudes → sexual coercive behavior path). Alcohol consumption is also

involved in almost half of all sexual assaults on college campuses, and research in the area suggests that alcohol consumption interacts with rape-supportive attitudes (see Figure 1.8: alcohol consumption as a moderator of the rape-supportive attitudes → sexual assault relationship pathway). From an I^3 theoretical perspective (Slotter & Finkel, 2011), alcohol functions as a disinhibiting factor. As such, college males with high alcohol consumption and high rape-supportive attitude scores are expected to be at a higher risk.

Figure 1.8. **Specific Aim 1 Conceptual Framework**



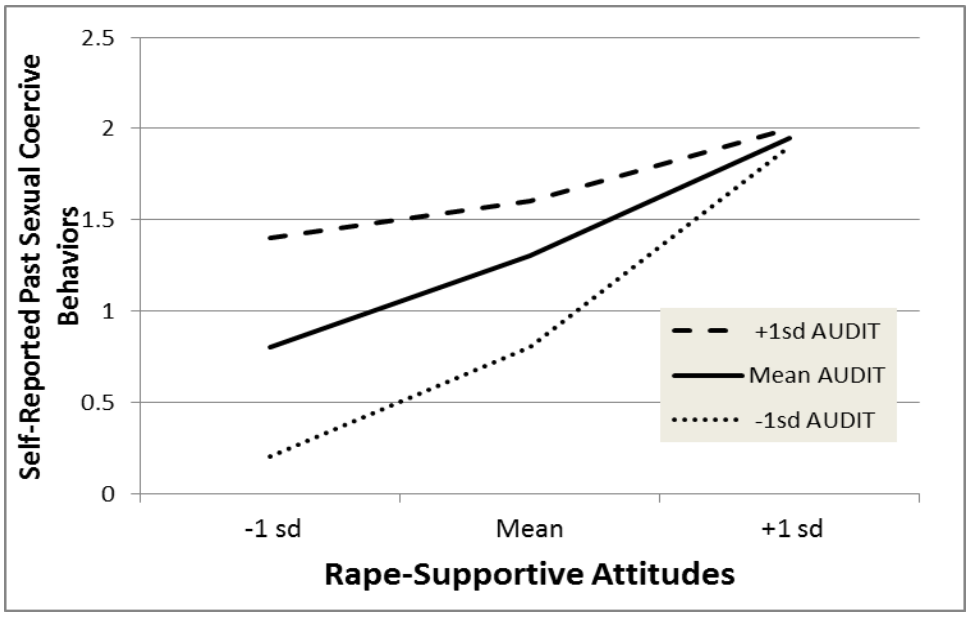
Specific hypotheses are as follows:

> ***Hypothesis 1a:*** A significant two-way interaction between rape-supportive attitudes and alcohol use in predicting past sexual assault is hypothesized. Due to an anticipated significant interaction effect, simple effects need to be delineated. These simple effects are outlined in Hypothesis 1b and 1c, and reflected in Figure 1.9.

Hypothesis 1b: Rape-supportive attitudes will be positively associated with past sexual coercive behaviors for all participants. In particular, those with high rape-supportive attitude scores will have the most reported past sexual coercive behaviors regardless of level of alcohol consumption.

Hypothesis 1c: The relationship (or the slope) between rape-supportive attitudes and past sexual coercive behaviors will be highest among those with low alcohol consumption compared to those with high alcohol consumption. As such, those with high alcohol consumption and low rape-supportive attitude scores will have more self-reported sexual coercive behaviors compared to those with low alcohol consumption and low rape-supportive attitude scores (see Figure 1.9).

Figure 1.9. **Hypothesized Interaction Between Alcohol Use Severity and Rape-Supportive Attitudes**

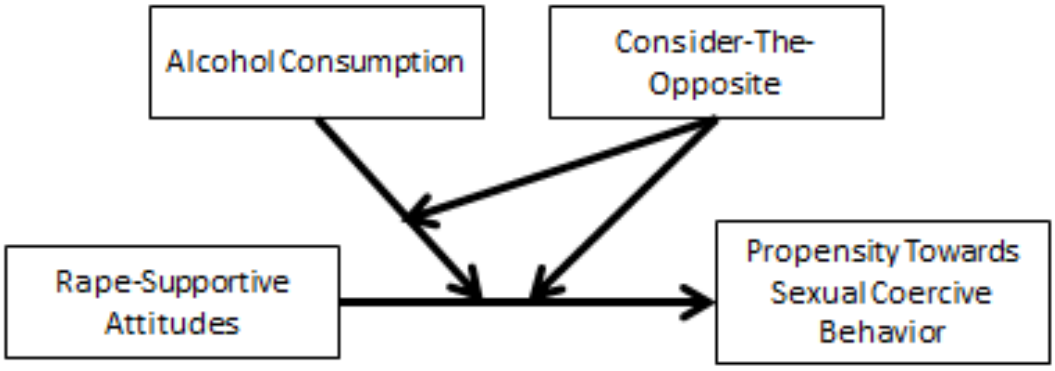


Note: AUDIT = Alcohol Use Disorders Identification Test; measurement for alcohol consumption

Specific Aim 2: Examine the Interaction Among Rape-Supportive Attitudes, Alcohol Use, and Consider-the-Opposite Intervention in Predicting the Propensity to Commit Sexually Coercive Behavior.

The previous aim focuses on the interaction of rape-supportive attitudes and heavy alcohol consumption in predicting past sexual coercive behavior. Specific Aim 2 extends the conceptual framework of Specific Aim 1 (see Figure 1.10). First, the current aim focuses on propensity to commit sexually coercive behavior, as measured by how long the participant will remain in a date-rape scenario (included in the vignette methodology, see Methods section). Second, the current aim posits that consider-the-opposite will mitigate the rape-supportive attitude and alcohol consumption effects on sexual coercive behavior. Overall, a significant three-way interaction effect is expected among rape-supportive attitudes, heavy alcohol consumption, and consider-the-opposite intervention. For the control group, a similar rape-supportive attitude and alcohol consumption interaction seen in Specific Aim 1 is expected. Due to the correction in the decision biases, those in the consider-the-opposite condition will have a lower propensity towards sexual coercive behavior regardless of rape-supportive attitude scores or alcohol consumption.

Figure 1.10. **Specific Aim 2 Conceptual Framework**



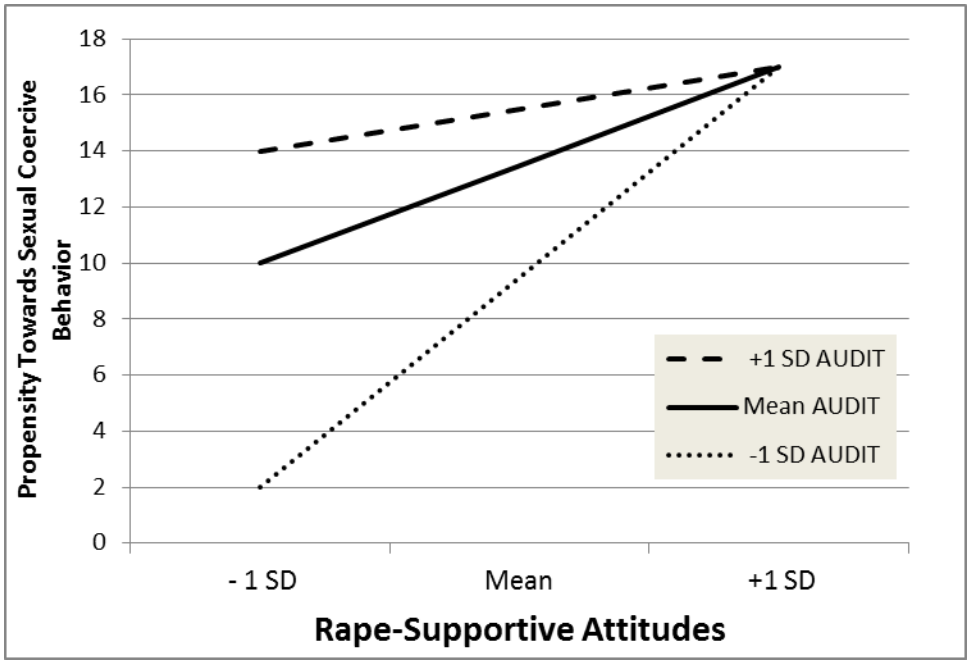
Specific hypotheses are explicated below:

Hypothesis 2a: A significant three-way interaction effect among consider-the-opposite condition, rape-supportive attitudes, and alcohol consumption is hypothesized. Due to the anticipated interaction effects, simple effects are delineated in Hypotheses 2b to 2c.

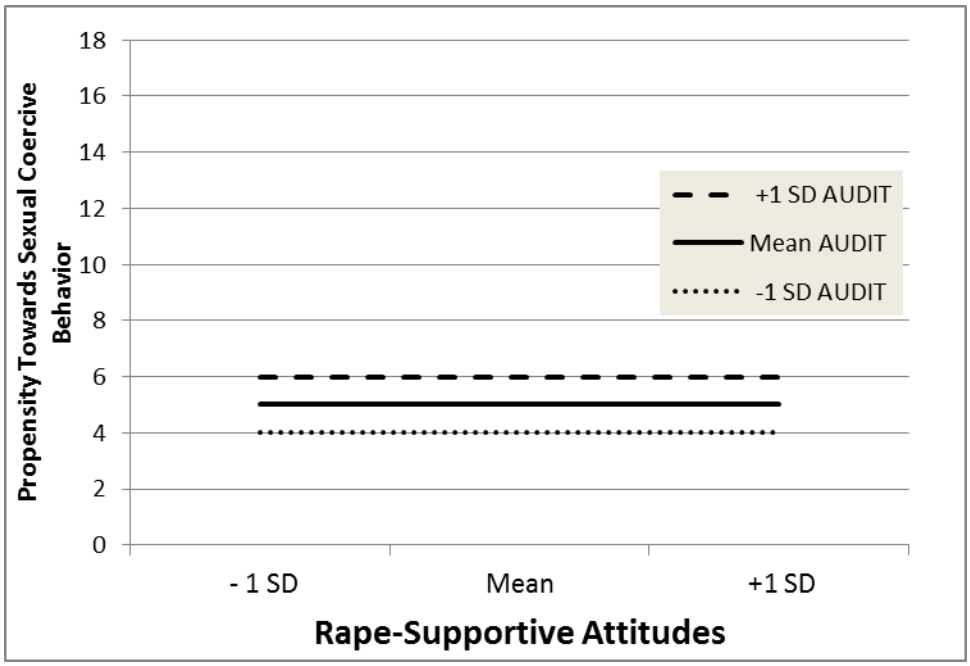
Hypothesis 2b: For those in the control group, a significant interaction effect is expected between rape-supportive attitudes and alcohol consumption in predicting propensity towards sexually coercive behaviors. Similar to Hypotheses 1b and 1c, rape-supportive attitudes will be positively associated with the propensity towards sexually coercive behaviors. In particular, those with high rape-supportive attitude scores will have the highest propensity towards sexual coercive behavior regardless of alcohol consumption. For those with lower scores in rape-supportive attitudes, higher alcohol consumption will be associated with higher propensity towards sexual coercive behavior (see Figure 1.11, Panel A).

Hypothesis 2c: For those in the consider-the-opposite group (treatment group), rape-supportive attitudes and alcohol consumption will not be associated with propensity towards sexual coercive behaviors (see Figure 1.11, Panel B). Furthermore, propensity towards sexual coercive behavior will remain low regardless of rape-supportive attitude scores or alcohol consumption.

Figure 1.11. **Hypothesized Three-Way Interaction Among Alcohol Use Severity, Rape-Supportive Attitudes, and Consider-the-Opposite Intervention.**



A. Control Group



B. Experimental Group

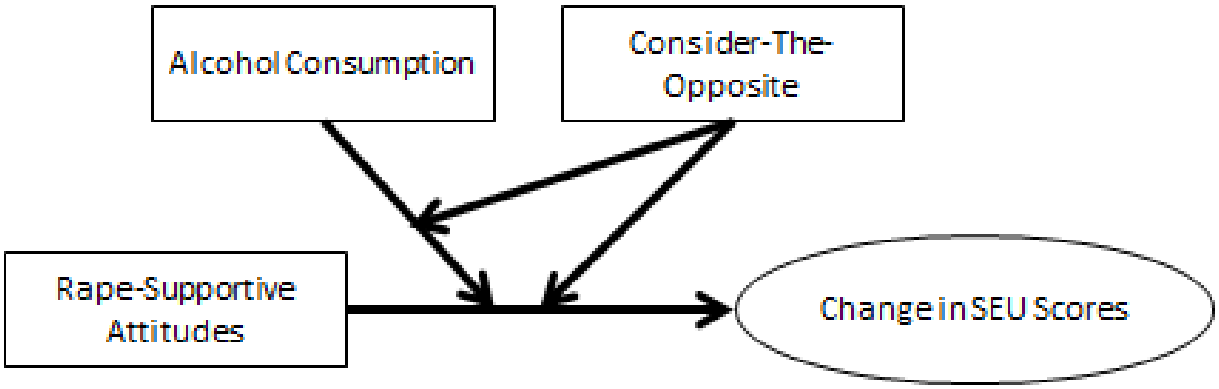
Note: AUDIT = Alcohol Use Disorders Identification Test; measurement for alcohol consumption

Specific Aim 3: Examine the Interaction Among Rape-Supportive Attitudes, Alcohol Use, and Consider-the-Opposite Intervention in Predicting SEU estimates in a Date-Rape Vignette Scenario.

Specific Aim 2 makes an assumption that the consider-the-opposite intervention reduces propensity towards sexual aggression by reducing the decision biases stemming from heavy alcohol consumption and rape-supportive attitudes. Specific Aim 3 demonstrates this by examining how consider-the-opposite intervention reduces SEU estimates in a date-rape vignette scenario. Specifically, this study posits that the consider-the-opposite intervention results in a reduction in SEU scores, whereas no change is expected for those in the control group. However, these changes in SEU are expected to be governed by the rape-supportive attitudes and alcohol consumption

interaction as exemplified in Specific Aim 1 and Specific Aim 2. Hence, a three-way interaction is expected. Specific hypotheses related to this three-way interaction are discussed in Hypotheses 3b and 3c. Figure 1.12, showing the three-way interaction on the change in SEU score, expands on the conceptual frameworks of Specific Aim 1 and Specific Aim 2. As will be discussed in the Methods section, the consider-the-opposite intervention will be implemented four times across the date-rape vignette scenario. Similar dynamics are expected across all four instances.

Figure 1.12. **Conceptual Framework for Specific Aim 3.**



Specific Hypotheses are as follows:

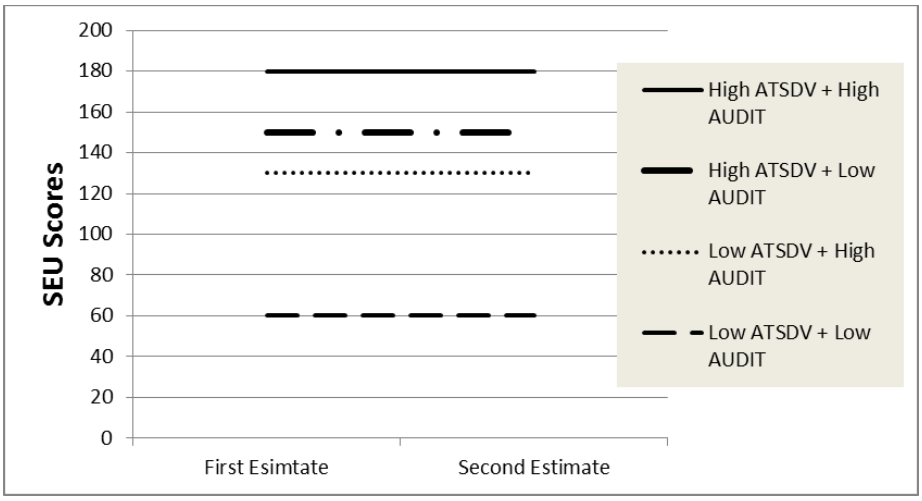
Hypothesis 3a: A significant three-way interaction effect among consider-the-opposite condition, rape-supportive attitudes, and alcohol consumption is hypothesized. Due to the anticipated interaction effects, simple effects are delineated in Hypotheses 3b to 3c.

Hypothesis 3b: Previous Hypotheses in Specific Aims 1 and 2 have proposed that those with high rape-supportive attitude scores and high alcohol consumption

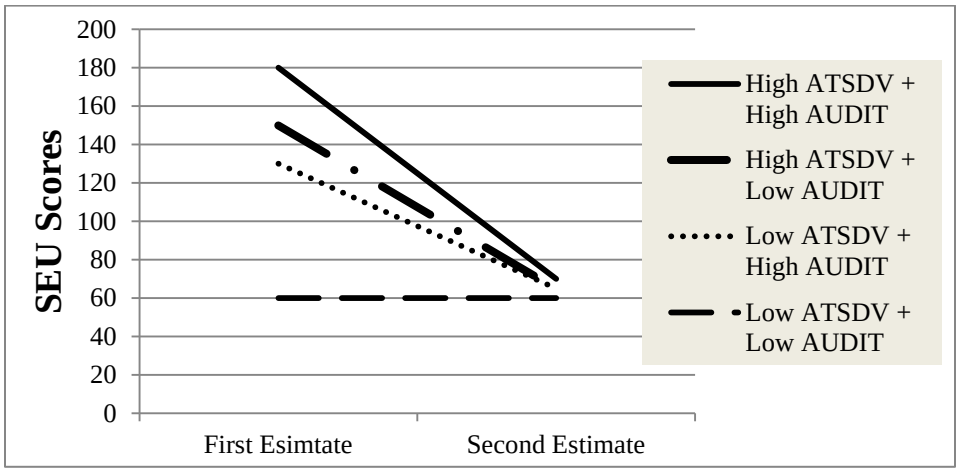
are the most at-risk, which is also the group expected to have the highest SEU scores. As such, the steepest decline in SEU is expected among those in the consider-the-opposite condition who have high rape-supportive attitude and high alcohol consumption compared to those with low rape-supportive attitudes and low alcohol consumption (see Figure 1.13, Panel A).

Hypothesis 3c: For those in the control group, those with high rape-supportive attitude scores and high alcohol consumption will have the highest SEU scores, whereas those with low rape-supportive attitude scores and low alcohol consumption will have the lowest SEU scores. However, no change in SEU scores is expected in the control group (see Figure 1.13, Panel B).

Figure 1.13. **Hypothesized Three-Way Interaction Among Alcohol Use Severity, Rape-Supportive Attitudes, and Consider-the-Opposite Intervention in Predicting Changes in SEU Estimates.**



A. Control Group



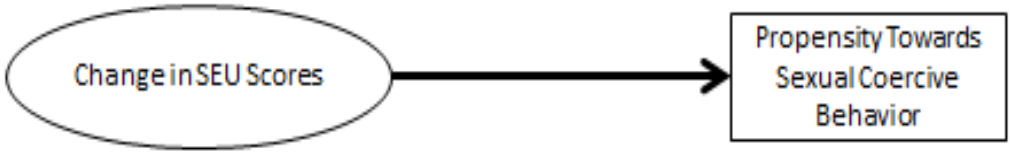
B. Experimental Group

Note: ATSDV = Attitude Towards Sexual Dating Violence; measurement for rape-supportive attitudes. AUDIT = Alcohol Use Disorders Identification Test; measurement for alcohol consumption

Specific Aim 4: Examine the Impact of SEU Estimates on Propensity Towards Sexual Coercive Behavior.

Specific Aim 2 posits that consider-the-opposite intervention leads to a lower propensity towards sexual coercive behaviors, subject to the interaction between rape-supportive attitudes and alcohol consumption. Specific Aim 3 proposed that consider-the-opposite results in a decrease in SEU scores, again subject to the interaction between rape-supportive attitudes and alcohol consumption. Specific Aim 4 proposes that the reduction in SEU scores throughout the four intervention points results in a lower propensity towards sexual coercive behavior. Figure 1.14 presents the conceptual framework for Specific Aim 4.

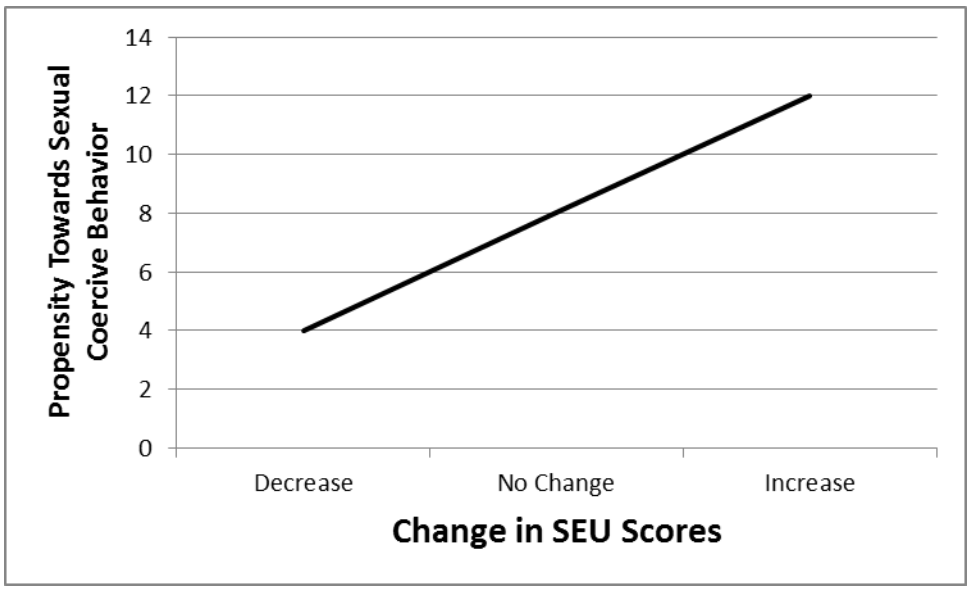
Figure 1.14. **Conceptual Framework for Specific Aim 4.**



Specific Hypothesis is as follows:

Hypothesis 4a: Decrease in SEU scores results in lower propensity towards sexual coercive behavior. Corollary of this statement is that increase in SEU scores results in higher propensity towards sexual coercive behavior (see Figure 1.15).

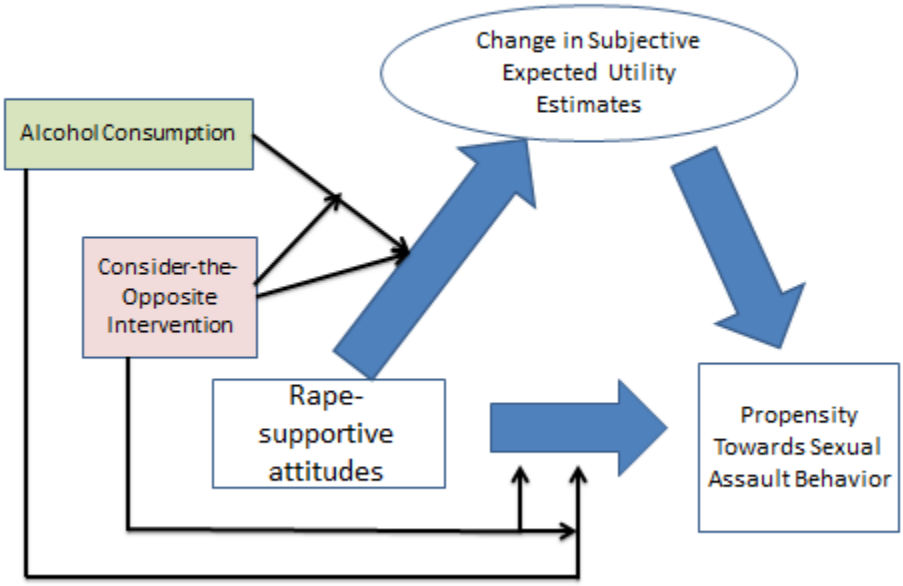
Figure 1.15. **Hypothesized Relationship Between Change in SEU Scores and Propensity Towards Sexual Coercive Behavior**



Specific Aim 5: Examine the Indirect Effect of Consider-The-Opposite Intervention on Propensity Towards Sexual Coercive Behavior Via Changes in SEU Scores

Specific Aim 2 proposed that, subject to a three-way interaction, rape-supportive attitudes, alcohol consumption, and consider-the-opposite intervention are associated with propensity towards sexual coercive behavior. Implicit in this aim is the assumption that the relative reduction in propensity in sexual coercive behavior was due to reduction in decision biases brought about by the consider-the-opposite intervention. Specific Aim 3 and Specific Aim 4 independently examines the foundations of this assumption. Specifically, Specific Aim 3 posited that the consider-the-opposite intervention led to a reduction in SEU estimates across all four intervention points. Specific Aim 4 then examined how a reduction in SEU estimates subsequently results in a reduction in propensity towards sexual coercive behaviors. Given this rationale, Specific Aims 2 to 4 can be combined into a more parsimonious conceptual model which will in turn serve as the overarching model for this study (see Figure 1.16).

Figure 1.16. **Conceptual Model For This Study**



Given the larger conceptual framework, additional Hypotheses are proposed:

Hypothesis 5a: Embedded in a larger path analytic framework, rape-supportive attitudes, alcohol consumption, consider-the-opposite condition, and all interaction effects will no longer be directly predictive of propensity towards sexual coercive behavior because the change in SEU scores will account for the variances in the propensity towards sexual coercive behaviors.

Hypothesis 5b: Specific Aims 2 to 5a combined posited that the consider-the-opposite condition reduces decision biases, thereby reducing SEU scores, which subsequently lowers propensity towards sexual coercive behaviors. As such, utilizing a path analytic model, treatment condition will have an indirect effect on propensity towards sexual coercive behavior via reductions in SEU scores.

Chapter 2: Method

Participants

Participants (N = 184) were recruited from Psychology classes in a large private (n = 65) and public (n = 119) Midwestern University using SONA, a web-based recruitment program. A short description of the research was provided in SONA and participants self-selected to participate. Participants needed to be at least 18 years old and able to consent independently in order to participate. Course credits were provided for participation in the research. Due to the male-to-female sexual coercive behavior focus of this study, nine participants who self-identified as gay were excluded in the subsequent analyses. Fourteen participants who failed the validity measures (see Measures) were also excluded. The final sample of male college students (N = 161; M_{age} = 19.84, sd = 3.02) were predominantly single (98%), White (71%), heterosexual (95%), and were in their first (39%) and second year (32%) of college (see Table 3.1 for the detailed demographics).

Date-Rape Vignette Stimuli

The date-rape vignette was created by adapting the instruments developed by Marx, Gross, and colleagues (Gross et al., 2001; Marx et al., 1999). Similar to other date-rape vignettes, the scenario used in the present example began with a man and a woman who have been dating for a month meets in a bar, followed by the woman inviting the man into her apartment, followed by flirtation and consensual kissing, which was followed by unwanted touching and petting, verbal coercion, physical coercion, and ended in rape. The original date-rape scenario was expanded by adding two events in which the male perpetrator apologized, as well as instances in which the female victim

attempted to repair the relationship by negotiating and suggesting alternatives to what the perpetrator wants (e.g., to kiss without petting). Table 2.1 provides a summary description of each of the 18 events presented in the vignette (labeled E01 to E18; see Appendix A for the instrument). In the scenario, both the man and the woman were drunk and have been dating for a month. Participants were asked to imagine themselves as the man in the scenario. At the end of each event, participants will be asked questions related to their SEU estimates and intent to leave at each event (see Measures).

Measures

Subjective Expected Utility Estimates.

After reading each event, participants were asked four questions corresponding to each of the four SEU components: 1) "What is the probability that Ashley wants to have sex with you?" (probability of utility: 0 = 0% – 10 = 100%); 2) "At this point, how important is it for you to have sex with Ashley?" (utility: 0 = not important – 10 = very important); 3) "If you continue, what do you think is the probability that Ashley will think you are being sexually aggressive?" (probability of cost: 0 = 0% – 10 = 100%); 4) "How important is it for you to avoid this?" (utility: 0 = not important – 10 = very important). Scores for the SEU estimate was computed as follows:

SEU = ((Utility*probability of Utility) – (Cost*probability of Cost)) + 100

SEU scores range between 0 to 200, with higher scores representing higher tendencies to overemphasize the utility and disregard the cost of the behavior.

Table 2.1. **Summary of the Date-Rape Vignette Scenario**

		P 1	P 2	P 3	P 4	P 5	P 6
E01	Inside the apartment, the woman invites the man to sit on the couch	Flirtation					
E02	Man asks if he could sit closer, woman agrees						
E03	Small talk about classes. Woman offers coffee.						
E04	Woman apologizes for being behaving awkwardly in the bar. Man tells the woman he enjoyed spending time with her.						
E05	Woman reciprocates. Consensual kissing.		Verbal Coercion				
E06	Man starts touching woman's breasts. Woman politely turns down man's advances.						
E07	Woman again refuses attempts to touch her breasts. Man apologizes and promises not to do it again. Resumption of consensual kissing.						
E08	Woman rebukes man for touching her buttocks. Man apologizes and woman accepts apology. Resumption of consensual kissing.						
E09	Man resumes touching woman inappropriately. Woman tells him she is not ready for this kind of intimacy. Man confronts her if she really likes him.			Reestablishing boundaries			
E10	Woman accedes to the man's advances, with the man's assurance that he will stop if the woman tells him to.						
E11	Resumption of consensual kissing.						
E12	Man reaches underneath woman's skirt. She rebukes him. Man threatens to end the relationship.				Verbal and Physical Coercion		
E13	Woman stops man from removing her underwear. Tells him she does not want sex. Man accuses the woman the she would not have let him go this far if she did not want to have sex.						

Table 6 continues

Table 2.1. **Continued.**

		P 1	P 2	P 3	P 4	P 5	P 6
E14	Man accuses woman of being a tease. Woman tries to repair the relationship. Asks the man to go back to kissing.					Reestablishing boundaries	Physical Coercion to Rape
E15	Man again reaches underneath woman's skirt and forcefully removes her underwear.						
E16	Man threatens woman with violence. Woman asks man to stop.						
E17	Woman fights off perpetrator.						
E18	Sexual intercourse ensues. Woman accuses man of rape afterwards.						

Note: E01 to E18 denotes the 18 events; P1 to P6 = thematic phases 1 to 6.

Propensity Towards Sexual Coercive Behaviors.

At each event in the date-rape vignette scenario, participants were asked the question "Would you stop the social interaction at this point?" (Yes =1; No = 0). Once the participant reports "Yes", the question was no longer asked but the participant continued with the task and continued answering the SEU estimates. The longer the participant stayed in the date rape vignette scenario, the higher the propensity to engage in sexual coercive behaviors (range of scores: 1 to 18). This manner of measuring and scoring likelihood to sexually assault is similar to other studies (e.g., Flowe at al., 2011; Gross et al., 2001; Messman-Moore & Brown, 2006).

Prior Sexual Coercive Behavior.

A revised 13-item version of the Sexual Experience Scale – Males (SES-M; Koss, Gidycz, & Wisniewski, 1987) was used in this study to operationalize past sexual coercive behavior. Items 1 ("Have you ever had sexual intercourse?") and 2 ("Have you

ever misinterpreted the level of sexual intimacy of a woman you desired?") was excluded in the analyses because they did not reflect sexual aggression as defined in this study. Other items of the SES-M describe various forms of sexual aggression, ranging from unwanted kissing to sexual intercourse without consent, and the means in which victimization was achieved, such as using false promises, threats and intimidation, and physical force. Another item was added pertaining to impaired consent due to intoxication, a tactic added in subsequent revisions (Testa, VanZile-Tansen, Livingston, & Koss, 2004). Participants were asked if they committed the sexual coercive behaviors outlined in each item (0 = No; 1 = Yes), and the sum of scores was utilized in the subsequent analyses. Internal consistency was reported to be .89 for male college students, and one-week test–retest mean item agreement was reported to be 93% (Koss & Gidycz, 1985). For the current sample, a Kuder-Richardson α of .59 could suggest poor reliability; however, this could also be due to poor variability among items. For instance, there were three items in which all participants reported "No", and only 14 participants endorsed any form of sexual coercive behavior (see Results section, Table 3.2).

Rape-Supportive Attitudes.

The 12-item Attitudes Towards Male Sexual Dating Violence (ATSDV; Price, Byers, & the Dating Violence Research Team, 1999) measures attitudes supportive of male sexual violence during a date, and is a subscale of a larger Attitude Towards Male Dating Violence Scale (Price et al., 1999). Sample items in the scale include "When men get really sexually excited, they cannot stop themselves from having sex" and "It is alright to pressure a girl to have sex if she has had sex in the past." Participants were asked to rate their agreement to each item using a Likert scale (1 = strongly disagree; 5

strongly agree). Sum of the scores were utilized in the subsequent analyses, and higher scores indicate more supportive attitudes about sexual aggression during dates. Reported alpha coefficient was .87 (Price et al., 1999), and alpha coefficient for the present sample was .90.

Alcohol Consumption.

Factor 1 (Consumption) of the 10-item Alcohol Use Disorders Identification Test (AUDIT-C; Babor, Higgins-Biddle, Saunders, & Monteiro, 2001; Saunders, Saunders, Babor, Dela Fuente, & Grant, 1993) was used to measure alcohol consumption. The AUDIT was originally designed to measure three domains: Items 1 (frequency of drinking), 2 (typical quantity), and 3 (frequency of heavy drinking) constitutes the consumption factor; items 4 (impaired control over drinking), 5 (increased salience over drinking), and 6 (morning drinking) measures dependence symptoms; and items 7 (guilt after drinking), 8 (blackouts), 9 (alcohol-related injuries), and 10 (other concerned about drinking) constitutes alcohol-related problems (Babor et al., 2001). Because this study is primarily focused on alcohol consumption rather than dependence symptoms or alcohol-related problems, only Factor 1 was utilized (i.e., sum of items 1 to 3). Participants reported their answer on a 0 to 4 scale, with higher scores indicating higher alcohol use. The AUDIT also has good item consistency of .75 to .97, and test-retest reliability of .70 to .89 (Reinert & Allen, 2007). For the Consumption Factor, reported alpha coefficient was .69 (Reinert & Allen, 2007). Alpha coefficient for the AUDIT Consumption Factor for this study's sample was .84. Lastly, computerized or web-based versions of the AUDIT performed as well as conventional paper-and-pen administration (Reinert & Allen, 2007).

Covariate Measures.

Three variables were included as controls in this study: social desirability, psychopathy, and impulsivity. Social desirability was measured using the 17-item Social Desirability Scale (SDS-17; Stöber, 2001). Psychometric evaluation of the SDS-17 indicated good convergent validity, particularly with the Eysenck Personality Questionnaire – Lie Scale (r = .60; Eysenck & Eysenck, 1991) and the Marlowe-Crowne Social Desirability Scale (r = .68; Crowne & Marlowe; 1960). Item 4 was dropped from the analysis, as recommended by Stöber (2001). Kuder-Richardson coefficient for the current sample was .59.

The 34 item Self-Report Psychopathy Scale (SRP-III; Mahmut, Menictas, Stevenson, & Homewood, 2011) consisted of four facets: callous affect (α = .65; current study α = .74), interpersonal manipulation (α = .72; current study α = .79), erratic lifestyle (α = .76; current study α = .79), and criminal tendencies (α = . 75; current study α = .82). Reported alpha coefficient for the entire scale was .86. For the current study, alpha coefficient of the total scale was .96. Sample items include "Rules are meant to be broken" and "I find it easy to manipulate people", and participants rated their agreement to each item using a 5-point Likert scale. The SRP-III has shown good convergent validity with other psychopathy measures and has been validated in a community sample. The sum of all the subscales was used in subsequent analyses.

Impulsivity was measured using the 59-item UPPS-P (Lynam, Smith, Cyders, Fischer, & Whiteside, 2007). The UPPS-P is composed of five factors: negative urgency (12 items, e.g., "Sometimes I do impulsive things that I later regret"), lack of premeditation (11 items, e.g., "I usually think carefully before doing anything"), lack of

perseverance (10 items, e.g., "I tend to give up easily"), sensation seeking (12 items, e.g., "I would enjoy driving fast"), and positive urgency (14 items, "I am surprised at the things I do while in a great mood"). Participants reported their agreement to each statement using a 4-point Likert scale ranging from Strongly Disagree to Strongly Agree. The sum of the five factors was utilized in the subsequent analyses, with higher scores reflecting higher impulsivity. Reported alpha coefficient for the UPPS-P ranged from .82 to .94 for each factor (Cyders, 2013). For the present study, alpha coefficient for the total measure was .91, .88 for negative urgency, .86 for lack of premeditation, .80 for lack of perseverance, .84 for sensation seeking, and .91 for positive urgency.

Other Measures.

Decision readiness and motivation to engage in the decision task is presumed to influence decision quality (Larrick, 2004; Soll et al., in press). As a rudimentary measure of motivation, participants were asked "Did you take the last task seriously?" (0 = not at all; 5 = very much so) at the end of the date-rape vignette procedure.

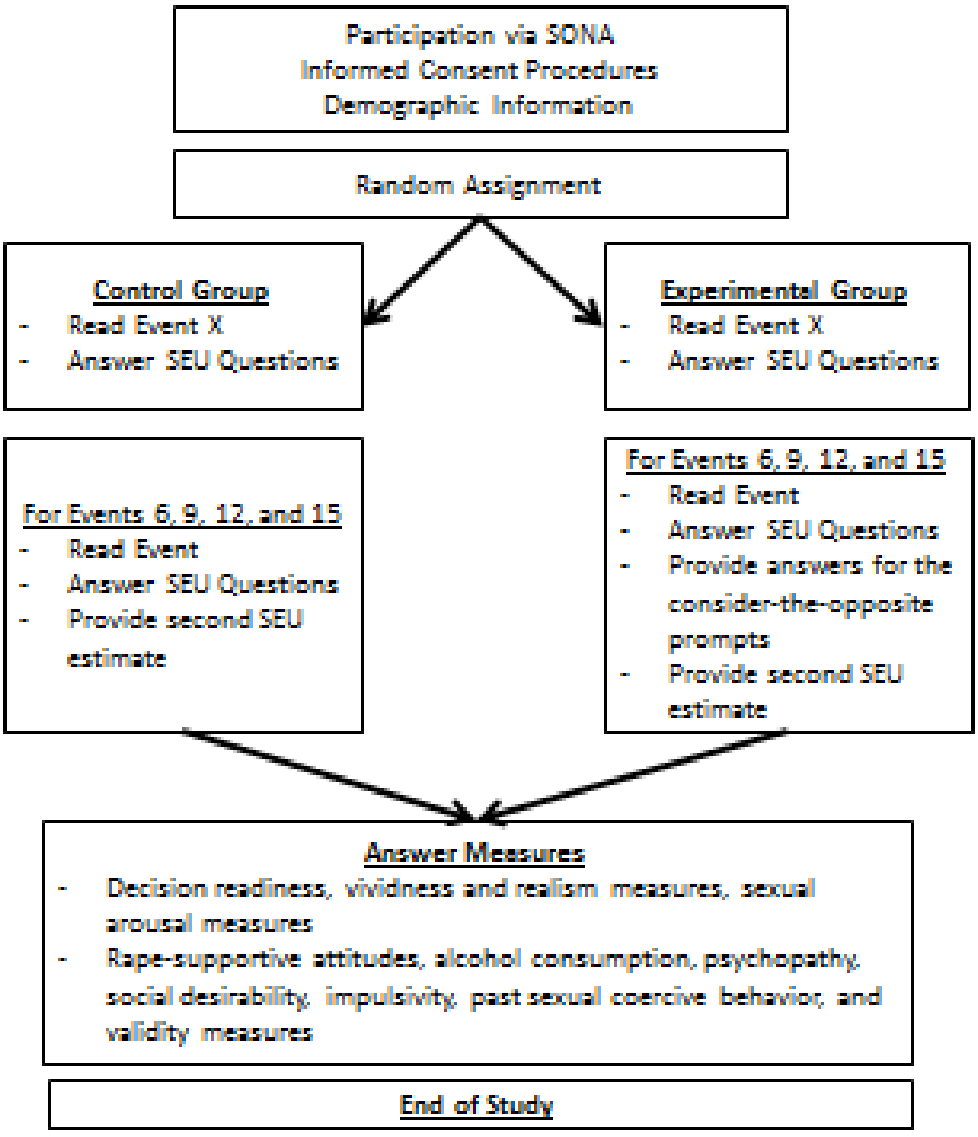
Prior studies (e.g., Bouffard, 2002) have included measures on sexual arousal and perceived realism of the story during a date-rape vignette task, suggesting that these variables could impact participants' response. Hence, participants were asked questions regarding 1) how realistic they found the story to be; 2) how vividly they could imagine themselves being in the story; 3) how sexually aroused they were when the characters in the story were flirting and engaging in consensual kissing; 4) how sexually aroused they were by the story generally; 5) how sexually aroused they would be if they were in that situation, and 6) how much pleasure they think the victim experienced (1 = low; 5 = high).

Randomly embedded in the questionnaires were two validity items designed to ascertain whether the participants were paying attention to the survey (e.g., "If you are paying attention to this survey, choose 'Often'"). Participants who failed to give correct answers twice to this two item validity measure were dropped from subsequent analyses.

Procedures

Figure 2.1 presents a graphical representation of the procedure in this study. All the measures and the date-rape vignette task were administered online using Qualtrics (http://www.qualtrics.com). After the online registration, signing the informed consent form, and reporting demographic variables, participants were randomly assigned to either the control group or the treatment group (consider-the-opposite intervention) and presented with the instructions for the date-rape vignette task. As previously mentioned, the date-rape narrative is broken down into 18 distinct phases wherein participants were presented with the SEU questions and whether or not they intend to continue. The consider-the-opposite intervention was implemented only at Events 6, 9, 12, and 15. These key events were chosen because these events contain first instances of unwanted sexual contact (Event 6), unwanted sexual contact with verbal coercion (Event 9), unwanted sexual contact with threats to end the relationship (Event 12), and physical coercion (Event 15). Depending on assignment, procedures for control or treatment condition was administered (see Control Group Procedures and Experimental Group Procedures), followed by the decision readiness, sexual arousal, and perceived realism and vividness questions. The measures ATSDV, AUDIT-C, SES-M, UPPS-P, SRP-III, and SDS-17 were randomly presented to the participants.

Figure 2.1. **Proposed Procedure for this Study.**



Control Group Procedure.

After providing the initial SEU estimates for Events 6, 9, 12, and 15, participants were provided with the following instructions (lifted from Herzog & Hertwig, 2013):

Imagine you are answering the same questions and giving your estimates for the first time. For each question, please give your best estimate.

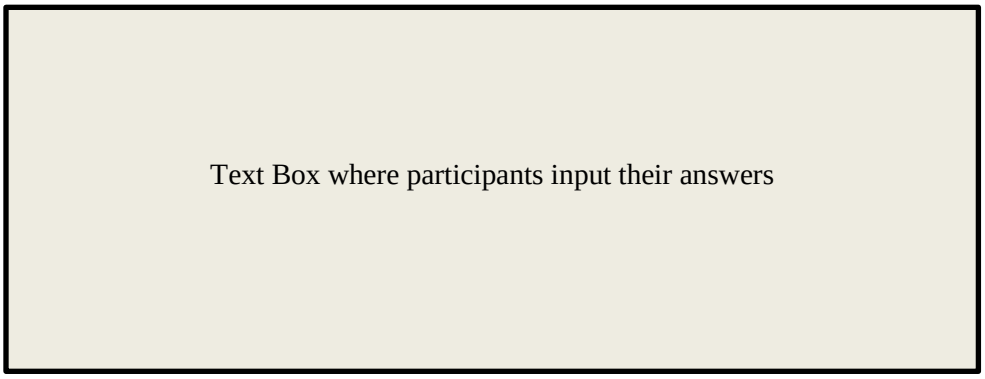
After answering the SEU questions for a second time, participants proceeded to the next event.

Experimental Group Procedure.

After providing the initial SEU estimates for Events 6, 9, 12, and 15, participants were provided with following instructions:

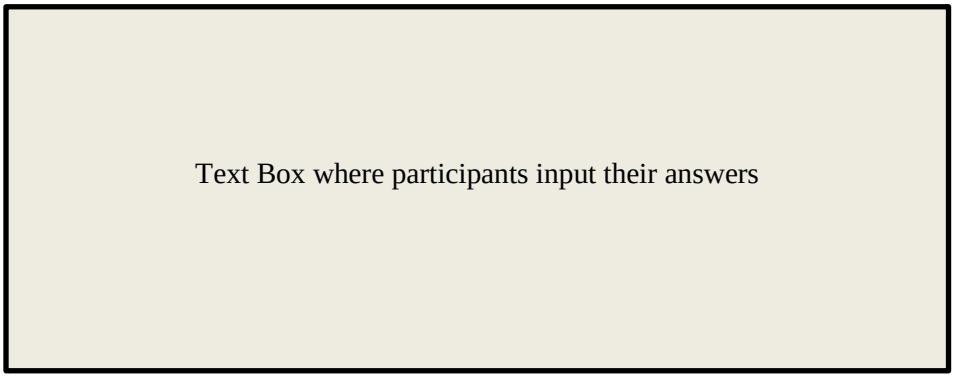
You said that there is a [initial probability of Utility estimates piped in]% probability that the woman in the scenario wants to have sex with you. On a scale of 0 to 100, you also said that the importance of having sex with the woman in the scenario was [initial Utility estimates piped in].

Given the context in the scenario, list in the text box below all the possible reasons why she would **NOT** want to have sex with you.



You said there is a [initial probability of Cost estimates piped in]% probability that the woman in the scenario will report you to the police for sexual assault. On a scale of 0 to 100, you also said that the importance of not being reported to the police for sexual assault was [initial Cost estimates piped in].

Given the context in the scenario, list in the text box below all the possible reasons why the woman may report you to the police?



After rethinking the situation, please answer the following questions again.

After answering the SEU questions for a second time, participants proceeded to the next event.

Data Analyses

Descriptive Statistics and Bivariate Analysis.

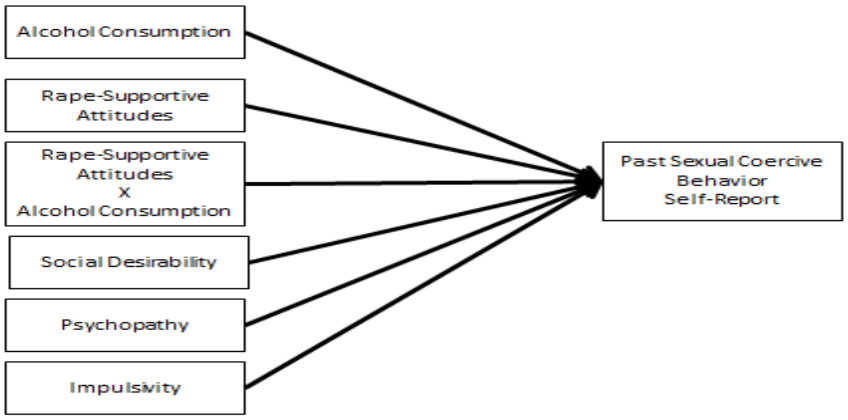
All descriptive and bivariate correlation analyses were performed using SPSS version 20. A *t*-test and chi-square analysis was performed when comparing the control and treatment condition for continuous measures and categorical variables. When examining the change in SEU scores at events 6, 9, 12 and 15, and assessing whether significant changes are observed in the control or treatment group, a 2 (first estimate vs. second estimate) x 2 (control vs. treatment group) mixed-design ANOVA was conducted.

Specific Aim 1.

All analyses for Specific Aims 1 to 5 were conducted within a multiple regression or path analytic framework using Mplus version 6.12. The maximum likelihood with robust standard errors (MLR) was used as the estimation procedure because it can

account for multivariate non-normality and missing data. Specific Aim 1 posits an interaction between rape-supportive attitudes and alcohol consumption in predicting past sexual coercive behaviors. To evaluate Hypotheses 1a to 1c, expecting a non-normal distribution with an extremely positively skewed distribution, all paths leading to SES-M will be analyzed using Poisson regression. Although Figure 1.8 is the conceptual framework for Specific Aim 1, Figure 2.2 presents the statistical framework wherein measures of rape-supportive attitudes, alcohol consumption, and their interaction effect, as well as control variables social-desirability, psychopathy, and impulsivity are included in the model as exogenous variables. Due to the expected significant rape-supportive attitudes by alcohol consumption interaction effect, specific comparisons of simple effect to evaluate each hypothesis will be conducted using the MODEL CONSTRAINT option in Mplus.

Figure 2.2. **Path Analytic Framework for Specific Aim 1**

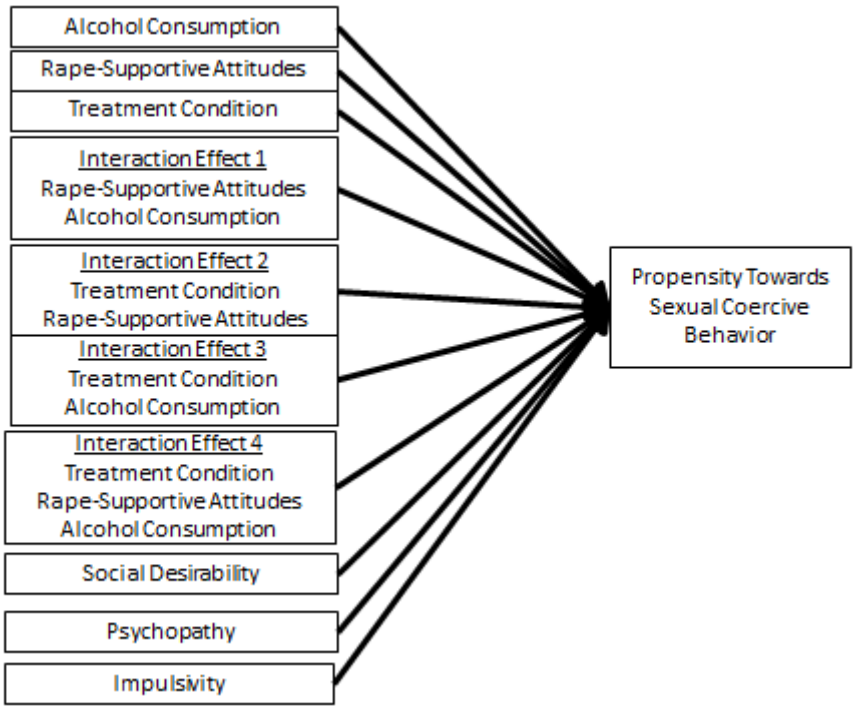


Note: Correlations among exogenous variables were omitted in the figure in order to simplify presentation. Correlations among exogenous variables were included in the analyses.

Specific Aim 2.

Hypotheses 2a to 2c posits a three-way interaction among treatment condition, rape-supportive attitudes, and alcohol consumption. Similar to Specific Aim 1, path analysis was performed to evaluate the hypotheses and specific comparisons of simple effects were tested using the MODEL CONSTRAINT option. Figure 1.10 was presented as the conceptual model of this aim, and Figure 2.3 represents the statistical model.

Figure 2.3. **Path Analytic Framework for Specific Aim 2**



Note: Correlations among exogenous variables were omitted in the figure in order to simplify presentation. Correlations among exogenous variables were included in the analyses.

Specific Aim 3.

The overarching goal of Specific Aim 3 is to examine the changes in SEU scores at events 6, 9, 12, and 15, and whether these changes were influenced by the consider-the-opposite intervention, rape-supportive attitudes, and alcohol consumption. To review, participants in the treatment group were asked to answer first SEU questions (first estimate), engage in the consider-the-opposite intervention, and provide another answer to the SEU questions (second estimate). Participants in the control group were asked to provide an initial estimate (first estimate) and another (second estimate) to the SEU questions. To operationalize this change in SEU, we calculated each participant's change score or ΔSEU, as exemplified in the equation:

$$\Delta SEU_i = SEU_{post\ i} - SEU_{pre\ i}$$

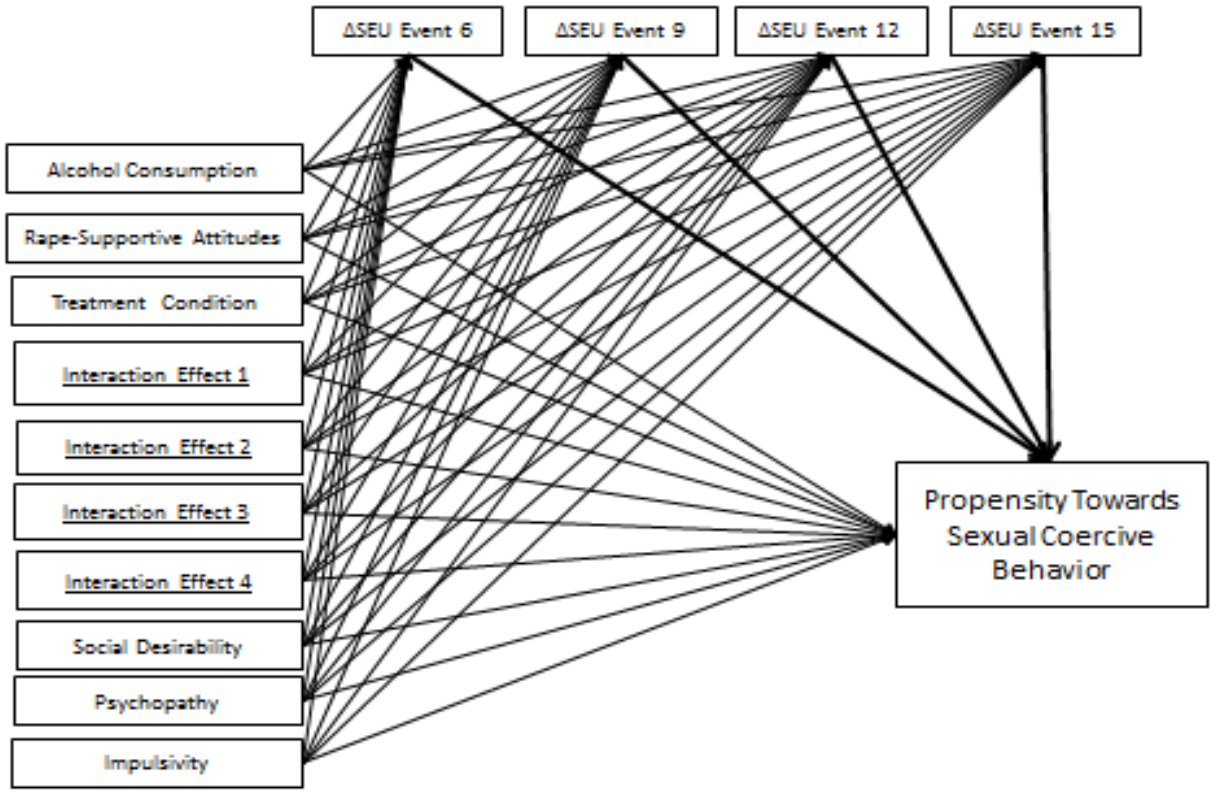
where SEU is the Subjective Expected Utility score, *i* indicates whether it was event 6, 9, 12, or 15, *pre* indicates initial SEU scores, and *post* indicates re-estimated SEU scores. ΔSEU yields negative to positive scores: a negative score indicates a decrease in SEU scores, positive indicates an increase, and a zero indicates no change.

Specific Aim 3 Hypotheses was embedded in a larger path analysis framework which includes Specific Aims 4 and 5 (see Figure 1.16 for the parsimonious Conceptual Framework for this study). Figure 2.4 presents the statistical framework of the much larger path analytic framework. Apart from parsimony, from a statistical perspective, another advantage of combining Specific Aims 3 to 5 is to avoid alpha inflation. Information needed to answer Specific Aim 3 is found in paths from predictor and control variables (exogenous variables) to ΔSEU Event 6 to ΔSEU Event 15. Due to the

anticipated significant interaction effects, simple effects were assessed using the MODEL CONSTRAINT option in Mplus.

Path analysis lends to an assessment of how the data fits the hypothesized path model. A good model fit was evaluated using the following criteria: comparative fit index (CFI ≥ .95), Tucker–Lewis index (TLI ≥ .95), root mean square error approximation (RMSEA ≤ .06), and the standardized root mean square residual (SRMR ≤ .08; Hu & Bentler, 1999).

Figure 2.4. **Path Analytic Framework that Combines Specific Aims 3 to 5.**



Note: Covariances among exogenous variables and among ΔSEU Event 6 to ΔSEU Event 15 variables were omitted.

Specific Aims 4 and 5.

Hypothesis 4a posits that reduction in SEU scores would result in a reduction in the propensity towards sexual coercive behavior. Hypothesis 5a on the other hand suggests that the changes in SEU scores accounts for the most variance in propensity towards sexual coercive behavior, such that when ΔSEU scores are regressed along with the predictor variables, rape-supportive attitudes, alcohol consumption, treatment condition, and all interaction effects will no longer be significant. Utilizing the much larger path analytic framework (Figure 2.4), information required to address Hypotheses 4a and 5a is found on paths towards propensity towards sexual coercive behavior.

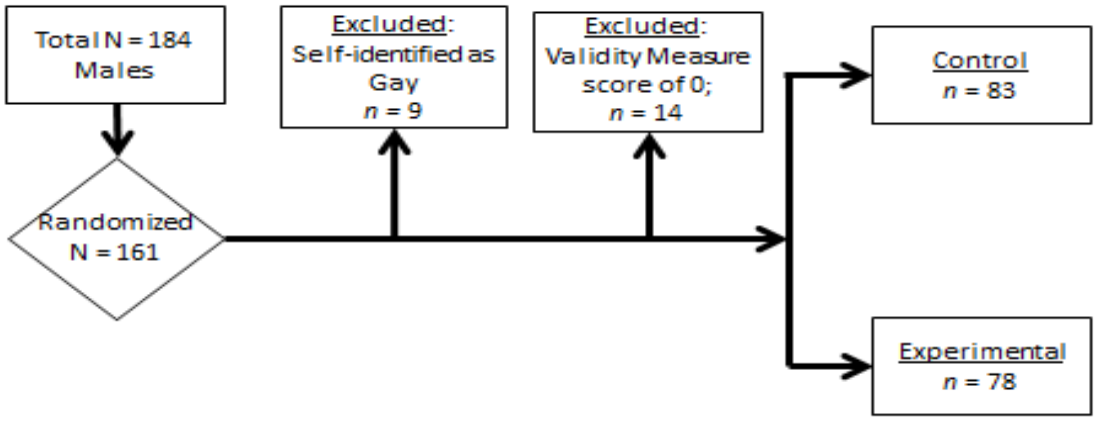
This study makes an assumption that the impact of the consider-the-opposite in reducing propensity towards sexual coercive behaviors lies in the reduction of decision biases as represented by a reduction in SEU. To evaluate this hypothesis (Hypothesis 5b), indirect effects from predictor variables to criterion variables were assessed by re-analyzing the path model using a bias-corrected bootstrap procedure (Bootstrap = 5,000) and the INDIRECT option in Mplus. An indirect effect is presumed to exist when 0 is not included in the 95% C.I.

Chapter 3: Results

Participant Demographics, Randomization and Validity Analyses

Figure 3.1 presents the randomization outcome for this study. Participant demographic variables are presented in Table 3.1, indicating that participants in our study are predominantly White, single, heterosexual males who are in their first- and second-year of college. Additional analyses also show that the treatment and control group did not significantly differ in these demographic variables. No significant differences were observed for decision readiness and motivation, perception of date-rape vignette scenario's vividness and realism, and perception of how much the woman in the scenario experienced pleasure. Sexual arousal questions in general did not differ between treatment conditions except for one item ("When James and Ashley were flirting and consensually kissing, how aroused were you by the story at that time?) wherein the control group had a significantly higher endorsement compared to those in the consider-the-opposite condition. Given that sexual arousal questions were asked after the date-rape vignette task and after the intervention (or lack of it for the control group), these differences could reflect more the impact of consider-the-opposite intervention rather than a sample difference.

Figure 3.1. **Randomization Procedure and Exclusion Statistics**



Self-Reported Sexual Coercive Behaviors

Fourteen participants (8.70%) of the total sample (n = 161) reported perpetrating at least one form of sexual coercive behavior throughout their lifetime. Separated by treatment condition, six (7.23%) college males from the control group and eight (10.26%) from the consider-the-opposite condition reported perpetrating at least one sexual coercive behavior within their lifetime, and this difference across conditions was not significant (χ^2 = 0.46, p = .50). For the control condition (n = 83), three (3.61%) reported only one type of sexual coercive behavior and three (3.61%) reported two types. For the treatment condition (n = 78), five (6.41%) reported perpetrating only one type of sexual coercive behavior, one (1.28%) perpetrated two types, one (1.28%) perpetrated three types, and one (1.28%) perpetrated four types of sexual coercive behavior. An examination of individual SES-M item endorsement (see Table 3.2) indicated that sexual contact through verbal pressure was the most predominant sexual coercive behavior reported.

Table 3.1. **Participant Demographic Statistics, Validity Measures, and Comparisons Across Treatment Conditions.**

	Total Sample (N = 161)				Control Group (N = 83)				Treatment Group (N = 78)							
	M	*sd*	*n*	%	*M*	*sd*	*n*	%	*M*	*sd*	*n*	%	t	*p*	χ^2	*p*
Age	19.84	3.02			19.67	1.89			20.01	3.89			– 0.71	.48		
Heterosexual			153	95%			79	95%			74	95%			0.01	.93
Ethnicity															7.47	.38
White			114	71%			63	76%			51	65%				
Asian American			14	9%			5	6%			9	12%				
Hispanic			10	6%			4	5%			6	8%				
Middle Eastern			7	4%			4	5%			3	4%				
African American			6	4%			3	4%			3	4%				
Pacific Islander			2	1%			1	1%			1	1%				
Native American			2	1%			2	2%			0	0%				
Other			6	4%			1	1%			5	6%				
Year in College															2.14	.54
Freshman			63	39%			31	37%			32	41%				
Sophomore			52	32%			31	37%			21	27%				
Junior			20	12%			9	11%			11	14%				
Senior			26	16%			12	14%			14	18%				

Table Continues

Table 3.1. Cont.

	Total Sample (N = 161)				Control Group (N = 83)				Treatment Group (N = 78)							
	M	*sd*	*n*	%	*M*	*sd*	*n*	%	*M*	*sd*	*n*	%	t	*p*	χ^2	*p*
Marital Status															2.16	.54
Single			157	98%			82	99%			75	96%				
Married			2	1%			1	1%			1	1%				
Widowed			1	1%			0	0%			1	1%				
Did you take the task seriously?	4.37	0.77			4.35	0.80			4.4	0.73			– 0.40	.69		
How realistic was the story?	4.01	1.10			3.95	1.08			4.08	1.13			– 0.72	.47		
How vividly can you imagine yourself being in the story?	2.65	1.41			2.77	1.38			2.53	1.44			1.10	.27		
How aroused were you when James and Ashley were flirting and consensually kissing?	2.03	1.13			2.22	1.18			1.83	1.04			2.19	.03		
In general, how aroused were you by the story?	1.65	0.92			1.66	0.96			1.64	0.88			0.12	.91		
How sexually aroused would you be if you were in that situation?	2.55	1.39			2.59	1.47			2.51	1.32			0.35	.73		
How much pleasure did you think the woman experienced?	1.47	0.64			1.52	0.69			1.41	0.59			1.06	.29		

Table 3.2. **SES-M Individual Item Endorsement Descriptive Statistics.**

	Total (n =161)		Control (n = 83)		Treatment (n =78)	
	n	%	*n*	%	*n*	%
Have you ever . . .						
. . . fondled, kissed, or touched a woman sexually when she didn't want to because you overwhelmed her with continual arguments and pressure?	12	7.45%	5	6.02%	7	8.97%
. . . fondled, kissed, or touched a woman sexually when she didn't want to because you used your position of authority (being a boss, teacher, supervisor, counselor) to make her?	2	1.24%	1	1.20%	1	1.28%
. . . fondled, kissed, or touched a woman sexually when she didn't want to because you threatened or used some degree of physical force (twisting her arm, holding her down, etc.) to make her?	1	0.62%	0	0.00%	1	1.28%
. . . had sexual intercourse with a woman when she didn't want to because you overwhelmed her continual arguments and pressure?	4	2.48%	2	2.41%	2	2.56%
. . . had sexual intercourse with a woman when she didn't want to because you used your position of authority (being a boss, teacher, supervisor, counselor) to make her?	0	0.00%	0	0.00%	0	0.00%
. . . attempted to insert your penis (but intercourse did not occur) when she didn't want him to by threatening or using some degree of force (twisting her arm, holding her down, etc.)?	0	0.00%	0	0.00%	0	0.00%

Table Continues

Table 3.2. **Continued**

	Total (n =161)		Control (n = 83)		Treatment (n =78)	
	n	%	*n*	%	*n*	%
Have you ever . . .						
. . . ever attempted to insert your penis (but intercourse did not occur) when she didn't want him to by getting her intoxicated on alcohol or drugs without her knowledge or consent?	0	0.00%	0	0.00%	0	0.00%
. . . had sexual intercourse with a woman when she didn't want to because you made her intoxicated by giving her alcohol or drugs without her knowledge or consent?	1	0.62%	1	1.20%	0	0.00%
. . . been in a situation in which you had sexual intercourse with a woman that was incapacitated due to alcohol or drugs (that is, passed out or unaware of what was happening) and was not able to prevent unwanted sexual intercourse from taking place?	1	0.62%	0	0.00%	1	1.28%
. . . had sexual intercourse with a woman when she didn't want to because you threatened or used some degree of physical force (twisting her arm, holding her down, etc.) to make her?	1	0.62%	0	0.00%	1	1.28%
. . . had sex acts (anal or oral intercourse or penetration by objects other than the penis) with a woman when she didn't want to because you threatened or used some degree of physical force (twisting her arm, holding her down, etc.) to make her?	1	0.62%	0	0.00%	1	1.28%

Descriptive Statistics and Bivariate Analyses of Control, Predictor, and Criterion Variables

Table 3.3 presents the descriptive statistics for the control and predictor variables, and measures of sexual coercive behaviors for the combined sample, and for the control and the treatment group. Group comparison analysis using *t*-test indicate no significant differences between the control and treatment group in alcohol consumption, rape-supportive attitudes, impulsivity, psychopathy, social desirability, and measures of sexual coercive behaviors.

Table 3.3. **Descriptive Statistics for Covariate and Predictor Variables, and Measures of Sexual Coercive Behaviors**

	Total Sample (n = 161)		Control Group (n = 83)		Treatment Group (n = 78)			
	M	*sd*	*M*	*sd*	*M*	*sd*	*t*	*p*
Alcohol Consumption	3.98	3.37	4.20	3.27	3.75	3.47	0.83	.41
Rape-Supportive Attitudes	16.92	5.73	16.87	5.88	16.99	5.59	– 0.13	.90
Psychopathy	50.70	15.23	52.07	15.13	49.23	15.31	1.18	.24
Impulsivity	133.13	20.66	132.45	21.77	133.83	19.55	– 0.42	.67
Social Desirability	9.54	2.84	9.39	2.63	9.69	3.04	– 0.67	.50
Self-Reported Sexual Coercive Behavior	0.14	0.53	0.11	0.41	0.18	0.64	– 0.84	.40
Propensity towards Sexual Coercive Behavior	5.62	3.10	6.01	3.50	5.21	2.56	1.66	.10

Table 3.4 presents the bivariate correlations among the treatment condition, predictor and control variables, and the measures for sexual coercive behaviors. Although significant bivariate associations were observed among alcohol use, rape-supportive attitudes, psychopathy, and measures of sexual coercive behaviors, treatment condition was only associated with propensity towards sexual coercive behavior.

Table 3.4. **Bivariate Correlations for Treatment Condition, Covariate and Predictor Variables, and Measures of Sexual Coercive Behaviors.**

		1	2	3	4	5	6	7
1	Treatment Condition = 1	---						
2	Alcohol Consumption	–.07	---					
3	Rape-Supportive Attitudes	.01	.14	---				
4	Psychopathy	–.09	.30**	.38**	---			
5	Impulsivity	.03	.32**	.30**	.32**	---		
6	Social Desirability	.05	–.06	–.21**	–.34**	–.16	---	
7	Self-Reported Sexual Coercive Behavior	.07	.24**	.38**	.36**	.22**	–.07	---
8	Propensity towards Sexual Coercive Behavior	–.13*	.19**	.19*	.17*	.13	–.11	.03

* $p < .05$ (1-tailed); ** $p < .01$ (1-tailed).

Descriptive Statistics and Bivariate Analyses for SEU Scores

The date-rape vignette task presents participants with a story between Ashley and James (participants were instructed to envision themselves as James) which began with innocuous flirting and consensual kissing, escalated when James engaged in verbal

coercion and threats, physical coercion, and culminated in forced sexual intercourse. The story was broken down into 18 distinct events wherein participants were asked SEU questions at the end of each event. SEU questions pertained to the utility of having sexual intercourse with Ashley and its probability of happening, and the cost of Ashley interpreting James's behavior as sexual coercion and the probability of it happening. When computed, SEU scores ranges from 0 to 200, with higher scores suggesting an emphasis on the utility and lower scores indicating emphasis on the costs.

This study examines whether consider-the-opposite intervention would be effective in reducing SEU scores. The intervention was implemented at Event 6, Event 9, Event 12, and Event 15. These key events were chosen because these events contain first instances of unwanted sexual contact (Event 6), unwanted sexual contact with verbal coercion (Event 9), unwanted sexual contact with threats to end the relationship (Event 12), and physical coercion (Event 15). Participants in the control group were asked to provide their SEU estimates (SEU 06a, SEU 09a, SEU 12a, and SEU 15a), and were asked to provide their answers for a second time as if they were answering the question for the first time (SEU 06b, SEU 09b, SEU 12b, and SEU 15b). For the treatment condition, the consider-the-opposite intervention was implemented in between the first estimate and the second estimate.

Table 3.5 presents the SEU descriptive statistics for each event for the combined sample, and for the control and the treatment group. Patterns of scores were similar to those studies that utilized similar date-rape vignette stimuli (Tuliao et al., 2015). Specifically, when the couple in the story was flirting and consensually kissing (Phase 1), SEU scores increased (see Figure 3.2a). Whenever the male character in the scenario

engages in sexually coercive behavior (Phase 2, Phase 4, and Phase 6), SEU scores tend to decrease. When the male apologizes (and the woman accepts; Phase 3) or when the women re-establishes her boundaries (Phase 5), SEU scores tend to increase, but not at the same level found in Phase 1. No significant differences in SEU scores were observed between the control and treatment group across all events. Figure 3.2b on the other hand presents the percentage of participants who opted to stay in the date-rape scenario as events progressed. Although no significant differences were observed in the propensity towards sexual coercive behavior measure (see Table 3.3), the survival plot indicates that more participants in the control group opted to stay beyond event 9.

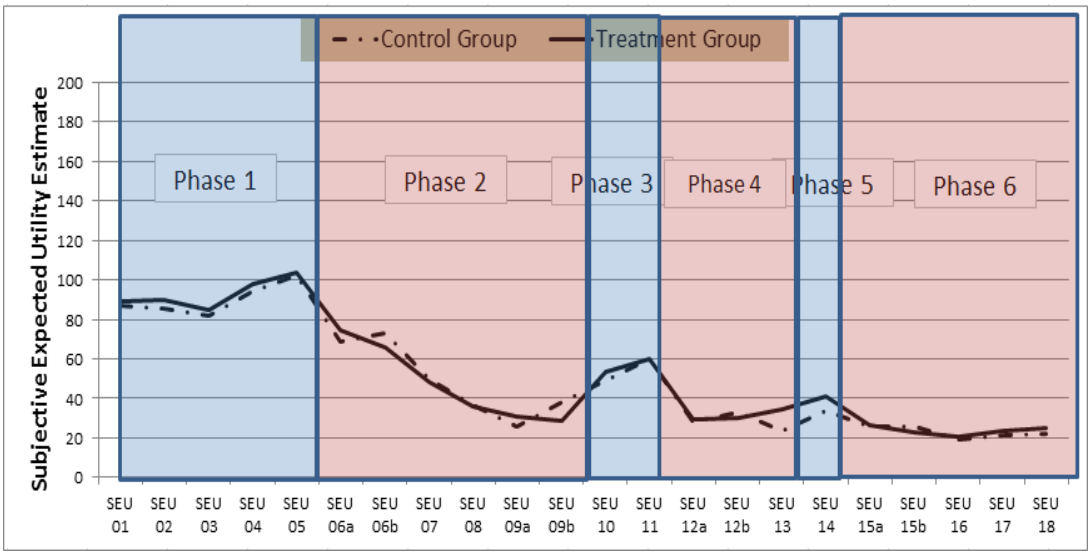
Table 3.6 presents the bivariate correlation among SEU scores at each event, the predictor and covariate variables, and measures of sexual coercive behavior for the total sample. Results indicate rape-supportive attitudes were significantly and positively associated with SEU scores for majority of the events in the date-rape vignette. Alcohol consumption on the other hand was not significantly associated with any of SEU scores. For the covariates, psychopathy and impulsivity was associated with SEU scores only at certain points, whereas lower social desirability was associated with higher SEU scores towards the end of the date-rape scenario. Higher SEU scores were associated with propensity towards sexual coercive behaviors, but only for event 1 to event 8. SEU scores at event 4 to 6 were positively associated with past reports of sexual coercive behaviors.

Table 3.5. **SEU Descriptive Statistics for the Total Sample (*n* = 161), Control (*n* = 83) and Treatment (*n* = 83) Groups.**

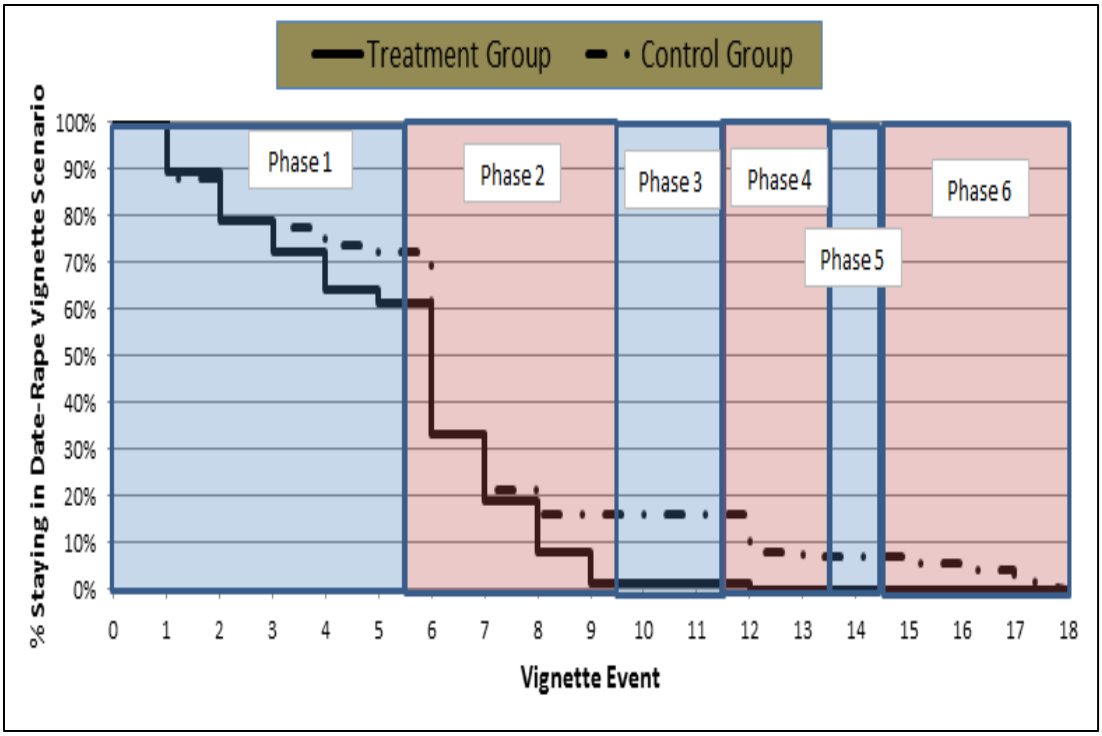
	Total Sample		Control Group		Treatment Group			
	M	*sd*	*M*	*sd*	*M*	*sd*	*t*	*p*
SEU 01	87.98	29.47	87.16	27.89	88.86	31.22	– 0.37	.72
SEU 02	87.58	32.17	85.24	31.75	90.08	32.62	– 0.95	.34
SEU 03	83.14	30.84	81.59	27.10	84.79	34.48	– 0.66	.51
SEU 04	95.80	39.45	93.96	37.20	97.76	41.86	– 0.61	.54
SEU 05	103.07	43.50	102.35	39.98	103.83	47.21	– 0.22	.83
SEU 06a	71.57	50.91	68.66	49.04	74.65	52.96	– 0.75	.46
SEU 06b	69.56	41.80	72.88	40.30	66.03	43.33	1.04	.30
SEU 07	49.06	39.68	49.43	41.20	48.67	38.25	0.12	.90
SEU 08	36.30	37.01	36.41	39.21	36.18	34.77	0.04	.97
SEU 09a	28.29	33.22	26.00	32.41	30.72	34.10	– 0.90	.37
SEU 09b	33.67	36.61	38.35	39.36	28.69	32.95	1.69	.09
SEU 10	51.21	42.13	49.02	40.66	53.54	43.79	– 0.68	.50
SEU 11	59.78	45.00	59.86	42.81	59.69	47.50	0.02	.98
SEU 12a	28.79	36.07	27.98	36.20	29.65	36.14	– 0.29	.77
SEU 12b	31.77	37.90	33.10	40.62	30.36	34.98	0.46	.65
SEU 13	28.83	38.60	23.61	35.59	34.38	41.06	– 1.78	.08
SEU 14	37.32	39.95	33.64	36.97	41.23	42.79	– 1.21	.23
SEU 15a	26.16	37.53	25.81	38.63	26.53	36.57	– 0.12	.90
SEU 15b	24.41	35.76	26.06	38.04	22.65	33.30	0.60	.55
SEU 16	20.05	37.20	19.30	39.20	20.85	35.17	– 0.26	.79
SEU 17	22.37	38.52	21.19	39.00	23.62	38.21	– 0.40	.69
SEU 18	23.44	41.39	21.83	41.92	25.15	41.02	– 0.51	.61

Note: SEU = Subjective Expected Utility scores. SEU 01 to SEU 18 = Subjective Expected Utility scores across the date-rape vignette task. SEU 06a, SEU 09a, SEU 12a, and SEU 15a = SEU scores initial estimate at events 6, 9, 12 and 15, respectively. SEU 06b, SEU 09b, SEU 12b, and SEU 15b = SEU scores subsequent estimates, i.e., asking the control group to provide another answer and asking the treatment group to provide another answer after the consider-the-opposite intervention.

Figure 3.2. **SEU Scores Across Event 1 to Event 18**



A. SEU Scores Among Control and Treatment Group



B. Survival Plot Among Control and Treatment Group

Table 3.6. **Bivariate Correlations Among SEU Scores Across Events 1 to 18, Control and Predictor Variables, and Measures of Sexual Coercive Behavior**

	Alcohol Consumption	Rape-Supportive Attitudes	Psychopathy	Social Desirability	Impulsivity	Propensity Towards Sexual Coercive Behavior	Past Reports of Sexual Coercive Behavior
	r	*r*	*r*	*r*	*r*	*r*	*r*
SEU 01	.08	.22**	.07	–.04	.03	.35**	.13
SEU 02	–.01	.20*	.10	–.02	.09	.34**	.10
SEU 03	.03	.22**	.04	–.06	.17*	.35**	.07
SEU 04	.01	.31**	.14	–.12	.07	.22**	.17*
SEU 05	.01	.30**	.19*	–.11	.05	.14	.18*
SEU 06a	.06	.35**	.20*	–.14	.12	.19*	.17*
SEU 06b	.14	.31**	.16*	–.17*	.18*	.38**	.12
SEU 07	.03	.25**	.09	–.08	.25**	.22**	.11
SEU 08	.03	.23**	.07	–.10	.29**	.23**	.07
SEU 09a	–.08	.21**	.09	–.06	.25**	.18*	.06
SEU 09b	–.05	.26**	.10	–.11	.10	.13	.07
SEU 10	–.01	.29**	.19*	–.08	.26**	.07	.15
SEU 11	–.07	.29**	.20*	–.13	.25**	.07	.15
SEU 12a	–.03	.27**	.09	–.07	.16*	.10	.07
SEU 12b	–.07	.36**	.13	–.21**	.07	.08	.13
SEU 13	–.07	.20*	.15	–.22**	.21**	.02	.14

Table Continues

.

Table 3.6. *Cont.*

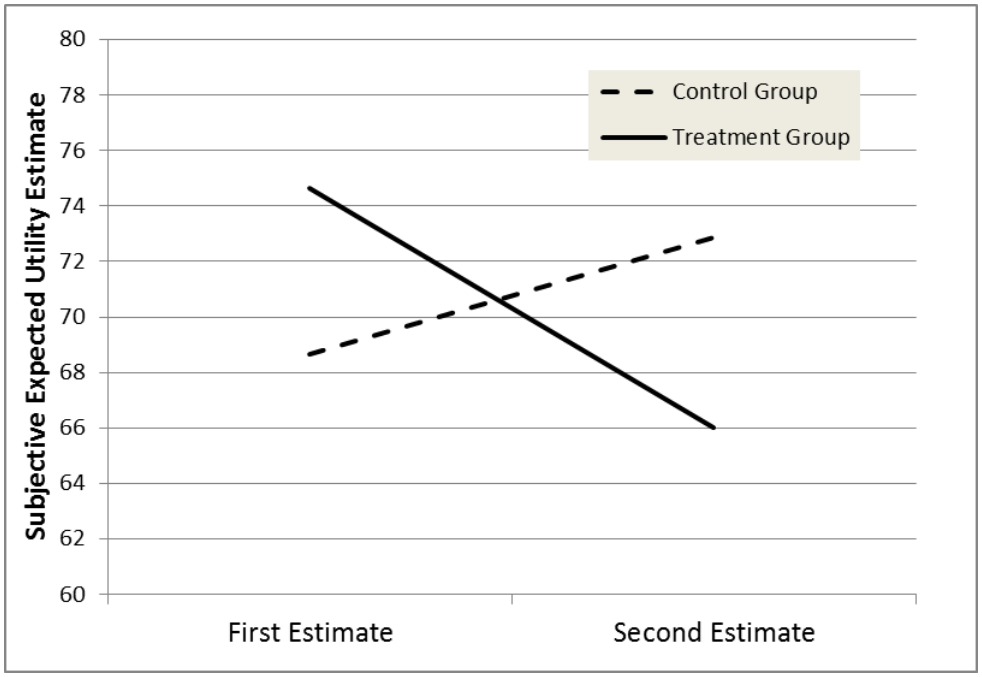
	Alcohol Consumption	Rape-Supportive Attitudes	Psychopathy	Social Desirability	Impulsivity	Propensity Towards Sexual Coercive Behavior	Past Reports of Sexual Coercive Behavior
	r	*r*	*r*	*r*	*r*	*r*	*r*
SEU 14	–.03	.18*	.10	–.17*	.22**	–.01	.14
SEU 15a	–.04	.20*	.08	–.16*	.14	–.02	.05
SEU 15b	–.10	.29**	.12	–.30**	.08	–.05	.15
SEU 16	–.10	.13	.03	–.25**	.08	–.09	.12
SEU 17	–.11	.11	.08	–.23**	.06	–.07	.12
SEU 18	–.11	.02	.10	–.18*	.08	–.06	.03

* $p < .05$ (2-tailed); ** $p < .01$ (2-tailed).

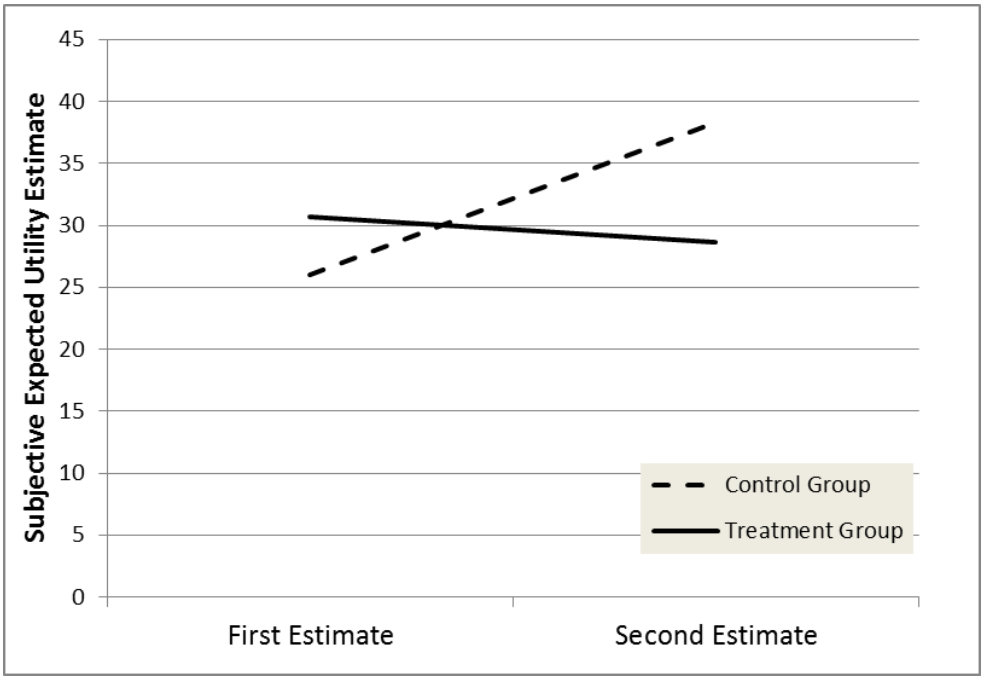
Note: SEU = Subjective Expected Utility scores. SEU 01 to SEU 18 = Subjective Expected Utility scores across the date-rape vignette task. SEU 06a, SEU 09a, SEU 12a, and SEU 15a = SEU scores initial estimate at events 6, 9, 12 and 15, respectively. SEU 06b, SEU 09b, SEU 12b, and SEU 15b = SEU scores subsequent estimates, i.e., asking the control group to provide another answer and asking the treatment group to provide another answer after the consider-the-opposite intervention

One particular interest in this study is whether SEU scores decrease, and whether the change is a function of the consider-the-opposite intervention. A 2 x 2 mixed-design ANOVA was performed with the pre- and post-estimates as repeated or within subjects factor and treatment condition as the between-subjects factor. This ANOVA procedure was performed for Events 6, 9, 12, and 15 separately. For event 6, results indicate a significant SEU x treatment condition change, F (1, 159) = 4.72, p = .03, partial η^2 = .03. No main effects were observed, F (1, 159) = 0.56, p = .46, partial η^2 < .01. An examination of simple effects indicate that the SEU reduction in the consider-the-opposite condition was significant (F (1, 159) = 4.13, p = .04, partial η^2 = .03), such was not the case for the control condition (F (1, 159) = 1.05, p = .31, partial η^2 = .01; see Figure 3.3, Panel A). For event 9, there was both a significant main effect (F (1, 159) = 5.50, p = .02, partial η^2 = .03) and interaction effect (F (1, 159) = 10.65, p < .01, partial η^2 = .06). Simple effects analyses indicate that while SEU scores did not significantly change for the treatment condition (F (1, 159) = 0.41, p = .52, partial η^2 < .01), it did significantly increase for the control group (F (1, 159) = 16.23, p < .01, partial η^2 = .09; see Figure 3.3 Panel B). No significant main (F (1, 159) = 1.70, p = .19, partial η^2 = .01) or interaction effects (F (1, 159) = 0.98, p = .32, partial η^2 = .01) were observed at event 12. At event 15, no significant main (F (1, 159) = 0.45, p = .50, partial η^2 < .01) or interaction effects (F (1, 159) = 0.59, p = .45, partial η^2 < .019) were observed as well.

Figure 3.3. **2 x 2 Mixed-Design ANOVA Results**.



A. Event 06



B. Event 09

Specific Aim 1: Examine the Interaction between Rape-Supportive Attitudes and Alcohol Use in Predicting *Past* Sexual Coercive Behavior.

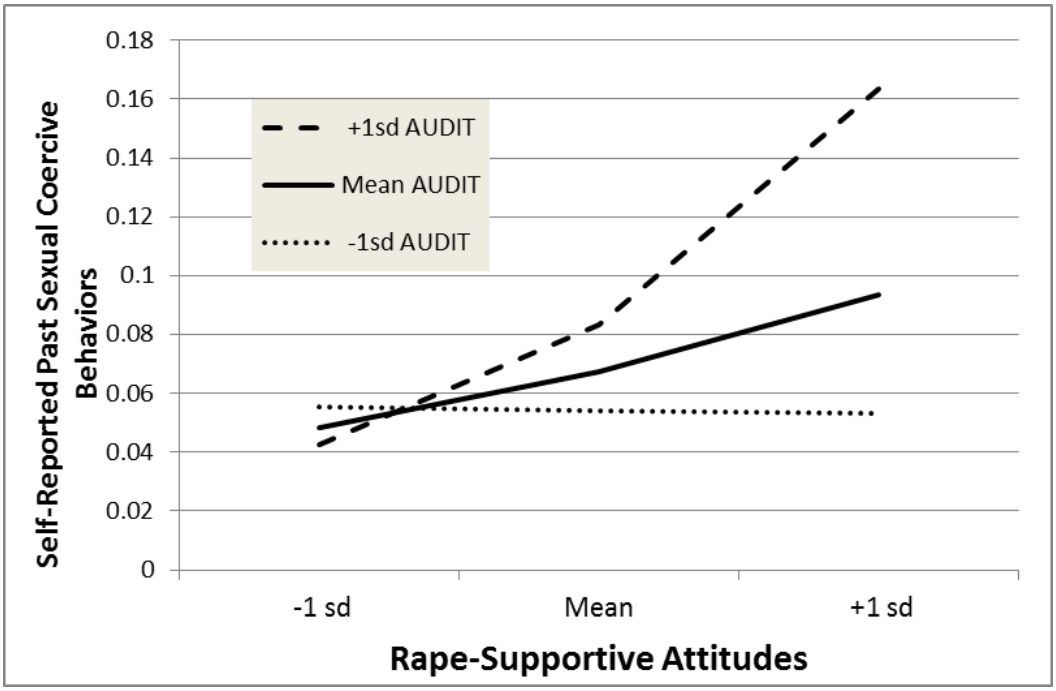
The purpose of aim 1 was to replicate previous research suggesting an interaction between rape-supportive attitudes and alcohol consumption in predicting past sexual coercive behavior. In addition to the significant interaction effect, simple effects hypotheses predicted that rape-supportive attitudes will significantly predict past sexual coercive behaviors only among those with low to average alcohol consumption. Because of the non-normally distributed and count nature of self-reported sexual coercive behavior, Poisson regression was utilized with rape-supportive attitudes, alcohol consumption, and their interaction effects entered as predictors.

Results indicated that the rape-supportive attitudes and alcohol consumption interaction effect was significant (see Table 3.7), supporting Hypothesis 1a. However, Hypothesis 1b was only partially supported, in that rape-supportive attitudes was significantly and positively associated with self-reported sexual coercive behavior only among those with high alcohol consumption (b = 0.116, SE = 0.053, p = .029), but not among those with average (b = 0.056, SE = 0.055, p = .302) and low (b = – 0.003, SE = 0.068, p = .963). The opposite of Hypothesis 1c was observed, in that the rape-supportive attitude slope of those with high alcohol consumption was significantly steeper compared to those mean (slope difference = 0.060, SE = 0.027, p = .030) and low alcohol consumption (slope difference = 0.119, SE = 0.055, p = .030). Furthermore, those with high rape-supportive attitudes and high alcohol consumption had the highest self-reported sexual coercive behaviors (see Figure 3.4).

Table 3.7. **Summary of Effects for Specific Aim 1**

	b	*SE*	*p*	IRR
Social Desirability	0.002	0.079	.98	1.002
Psychopathy	0.031	0.017	.07	1.031
Impulsivity	0.009	0.018	.64	1.009
Rape-Supportive Attitudes	–0.015	0.072	.84	0.985
Alcohol Consumption	–0.242	0.218	.27	0.785
Rape-Supportive Attitudes x Alcohol Consumption	0.018	0.008	.03	1.018

Figure 3.4. **Interaction Between Alcohol Use Severity and Rape-Supportive Attitudes**



Note: AUDIT = Alcohol Use Disorders Identification Test; measurement for alcohol consumption. Estimates are calculated controlling for all other variables at the following mean scores: social desirability = 9.54, psychopathy = 50.70, impulsivity = 132.99, rape-supportive attitudes = 17.04, and alcohol consumption = 4.00.

Specific Aim 2: Examine the Interaction Among Rape-Supportive Attitudes, Alcohol Use, and Consider-the-Opposite Intervention in Predicting the *Propensity* to Commit Sexually Coercive Behavior.

Specific Aim 2 posited that consider-the-opposite will be beneficial in reducing propensity to engage in sexually coercive behavior, at least as measured in the date-rape vignette task. A significant three-way interaction was predicted. For the treatment group, it was hypothesized that both rape-supportive attitudes and alcohol consumption will not be associated with the propensity towards sexually coercive behavior. For the control group, higher propensity towards sexual coercive behavior was expected among those with high rape-supportive attitude scores. Among those with low rape-supportive attitude scores, high alcohol consumption scores will be associated with a much higher propensity towards sexual coercive behavior.

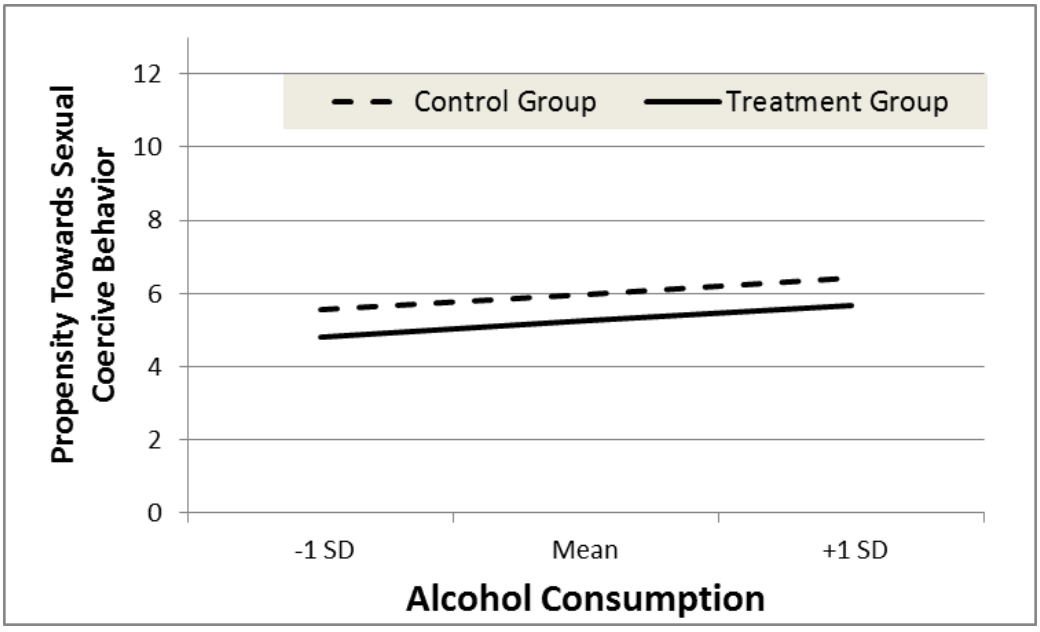
Multiple regression analysis was performed with the covariates, rape-supportive attitudes, alcohol consumption, treatment condition, and all possible two-way and three-way interaction effects simultaneously entered into the model. Results indicated that the three-way interaction effect was not significant ($b = 0.007$, $SE = 0.033$, $p = .841$, $\beta = .131$) and was subsequently dropped from the model. The model was reanalyzed without the three-way interaction effect, and results indicated no interaction between rape-supportive attitude and alcohol consumption ($b = -0.005$, $SE = 0.014$, $p = .696$, $\beta = -.122$), treatment condition and rape-supportive attitude ($b = -0.104$, $SE = 0.102$, $p = .310$, $\beta = -.314$), and treatment condition and alcohol consumption ($b = -0.065$, $SE = 0.129$, $p = .313$, $\beta = -.064$). After dropping all interaction effects from the model, the results indicated that only alcohol consumption was significantly and positively associated with

propensity towards sexual coercive behaviors (see Table 3.8 and Figure 3.5). Hypotheses 2a to 2c therefore were not supported because of the non-significant interaction effects and that only alcohol consumption main effect was significant.

Table 3.8. **Summary of Effects for Specific Aim 2**

	b	*SE*	*p*	β
Social Desirability	– 0.054	0.087	.53	– .050
Psychopathy	0.004	0.020	.86	.017
Impulsivity	0.003	0.013	.80	.023
Treatment Condition = 1	– 0.748	0.463	.11	– .121
Rape-Supportive Attitudes	0.097	0.057	.09	.181
Alcohol Consumption	0.130	0.065	.04	.141

Figure 3.5. **Relationship Between Alcohol Consumption and Propensity Towards Sexual Coercive Behavior.**



Note: Difference between Control and Treatment Group is not significant. Graph shows expected scores when all other variables are set at their mean scores: social desirability = 9.54, psychopathy = 50.70, impulsivity = 132.99, rape-supportive attitudes = 17.04.

Specific Aim 3: Examine the Interaction Among Rape-Supportive Attitudes, Alcohol Use, and Consider-the-Opposite Intervention in Predicting SEU estimates in a Date-Rape Vignette Scenario.

This study examined whether consider-the-opposite intervention was effective in reducing SEU scores at Event 6, Event 9, Event 12, and Event 15. To review, participants in the control group were asked to provide their SEU estimates (SEU 06a, SEU 09a, SEU 12a, and SEU 15a), and were asked to provide their answers for a second time as if they were answering the question for the first time (SEU 06b, SEU 09b, SEU 12b, and SEU 15b). For the treatment condition, the consider-the-opposite intervention was implemented in between the first estimate and the second estimate. One way to represent these changes to make it amenable to a path analytic model is to subtract the second SEU estimate with the first SEU estimate (e.g., SEU 06b – SEU 06a), which in the subsequent section will be represented by ΔSEU score. The ΔSEU score yields negative to positive scores, with negative scores indicating a decrease in SEU scores from the first to second SEU estimate, positive scores indicating an increase, and a 0 indicating no change.

The mean ΔSEU score for event 6 is –2.01 (*sd* = 37.80), which suggests that, without accounting for the treatment condition, predictor and control variables, participants' SEU scores decrease by an average of –2.01. The mean ΔSEU scores for events 9, 12, and 15 are 5.39 (*sd* = 28.67), 2.98 (*sd* = 28.23), and –1.75 (*sd* = 34.01), respectively. Table 3.9 presents the correlations among ΔSEU scores for Events 6, 9, 12, and 15, predictor and control variables, and measures of sexual coercive behaviors. Results indicated that being in the consider-the-opposite condition is associated with a

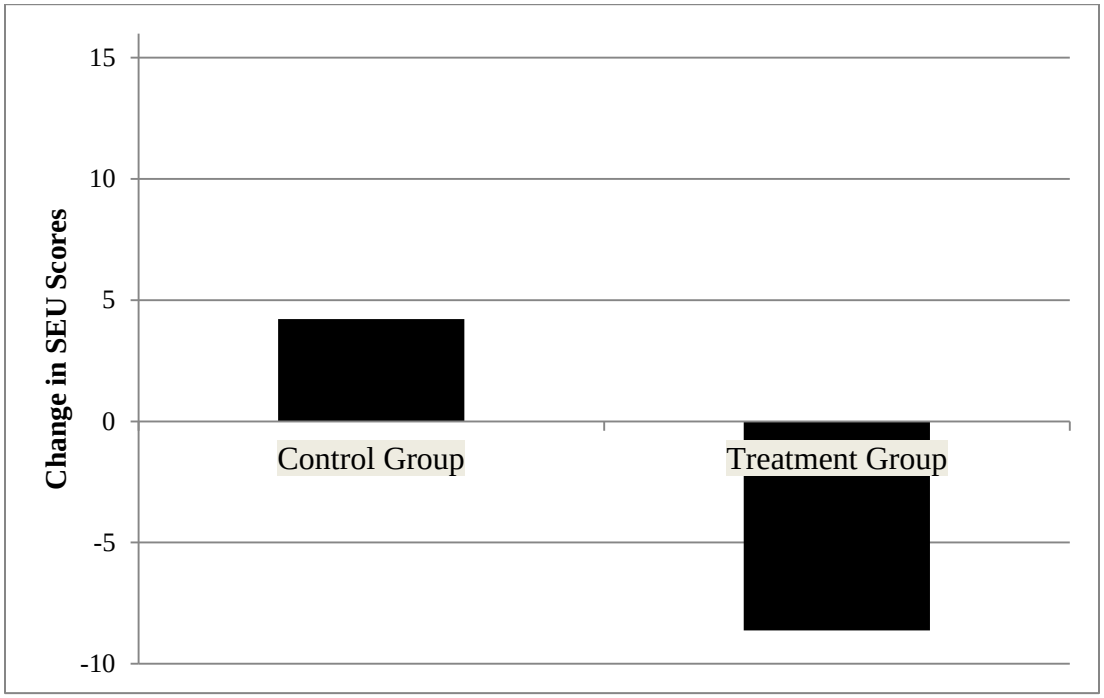
larger decrease in SEU scores for Events 6 and 9 compared to the control group. Figure 3.6 presents a graphical representation of the mean ΔSEU score for Events 6 and 9 for the control and treatment group. These results and graphs are analogous to the 2 x 2 mixed-design ANOVA previously discussed and also represents the change in SEU scores between the control and treatment group (see Descriptive Statistics, Table 3.5).

Table 3.9. **Bivariate Correlations among ΔSEU Scores, Control and Predictor Variables, and Measures of Sexual Coercive Behaviors**

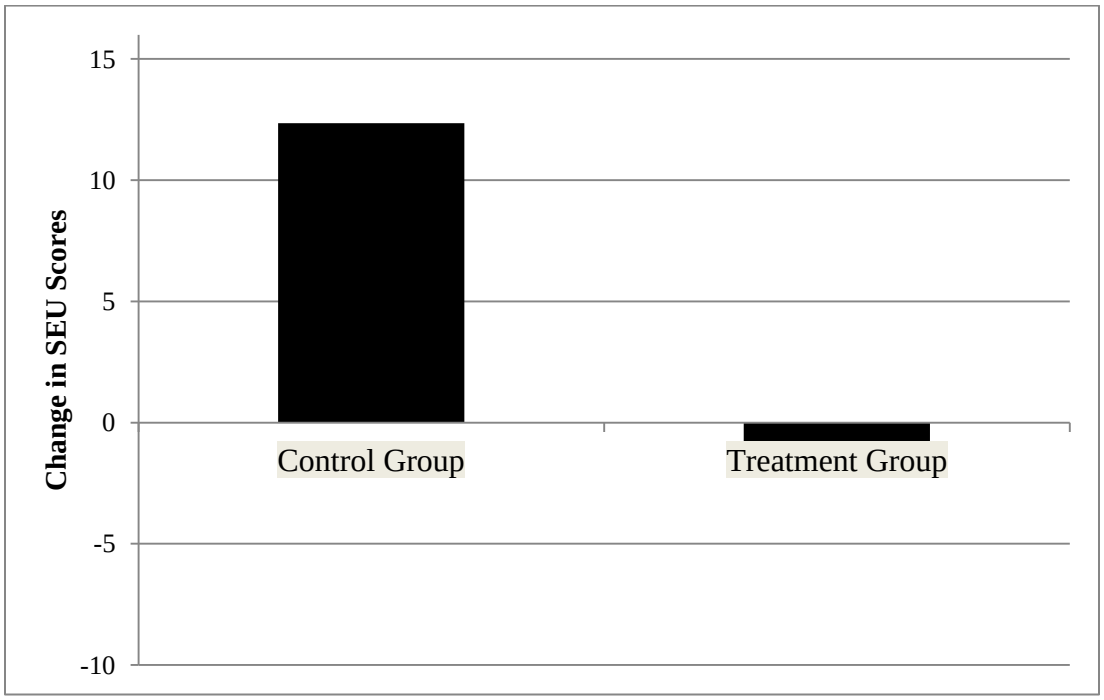
	ΔSEU Event 6	ΔSEU Event 9	ΔSEU Event 12	ΔSEU Event 15
	r	*r*	*r*	*r*
ΔSEU Event 6 Score	---			
ΔSEU Event 9 Score	.17*	---		
ΔSEU Event 12 Score	.04	.57**	---	
ΔSEU Event 15 Score	– .03	.43**	.52**	---
Social Desirability	– .01	– .07	– .19*	– .14
Psychopathy	– .10	.03	.06	.04
Impulsivity	.04	– .16*	– .11	– .07
Treatment Condition = 1	– .17*	– .25**	– .08	– .06
Rape Supportive Attitudes	– .13	.10	.13	.08
Alcohol Consumption	.08	.02	– .05	– .07
Propensity Towards Sexual Coercive Behavior	.16*	– .04	– .03	– .03
Past Sexual Coercive Behavior	– .16*	– .04	.03	.07

* $p < .05$ (2-tailed), ** $p < .01$ (2-tailed).

Figure 3.6. **ΔSEU Scores for the Control and Treatment Group for Event 6 (A) and Event 9 (B)**



(A) Event 6



(B) Event 9

Analyses for Specific Aim 3 to Specific Aim 5 were aggregated into one parsimonious path analysis model (see Figure 2.4). The path analysis model, as initially analyzed, was just-identified so model fit indices were unavailable. Results of the initial path model indicated that all three-way interaction effects were not significant and were eventually dropped from the model (i.e., all three-way interaction paths were constrained to 0). All possible two-way interaction paths were subsequently examined, and results indicate that only the treatment condition x rape-supportive attitudes interaction effect predicting ΔSEU score at Event 9 was significant. All other two-way interaction effects were non-significant and paths involving these interaction terms were subsequently constrained to 0. After making the modifications, model fit indices suggest that the path model achieved the requisites of a good model fit ($\chi^2 = 24.52$, $df = 19$, $p = .17$; CFI = .96; TLI = .87; SRMR = .02; RMSEA = .04, 90% C.I. = .00 to .09, $p_{\text{close fit}} = .57$). Table 3.10 presents the standardized and unstandardized coefficients for all the paths in the model.

For Specific Aim 3, of particular interest are the paths involving criterion variables ΔSEU Event 6 to ΔSEU Event 15. A three-way interaction hypothesis was proposed across Events 6, 9, 12, and 15. In brief, it was expected that a decrease in SEU scores will be observed for the treatment condition, and that the change is going to be more pronounced for participants with high rape-supportive attitudes and high alcohol consumption scores. On the other hand, no changes were hypothesized for the control group.

Table 3.10. **Summary of the Path Analysis**

	b	*SE*	*p*	β
Criterion Variable: ΔSEU Event 6				
Intercept	16.604	38.941	.670	
Social Desirability	– 0.650	1.599	.685	– .049
Psychopathy	– 0.337	0.185	.068	– .136
Impulsivity	0.148	0.219	.500	.081
Treatment Condition = 1	– 13.279	5.558	.017	– .176
Rape-supportive Attitudes	– 0.760	0.388	.050	– .116
Alcohol Consumption	1.101	0.957	.250	.098
Interaction Effect 1		Constrained to 0		
Interaction Effect 2		Constrained to 0		
Interaction Effect 3		Constrained to 0		
Interaction Effect 4		Constrained to 0		
R^2 = .068				
Criterion Variable: ΔSEU Event 9				
Intercept	39.393	18.366	.032	
Social Desirability	– 0.737	0.899	.413	– .073
Psychopathy	– 0.029	0.139	.833	– .016
Impulsivity	– 0.319	0.114	.005	– .230
Treatment Condition = 1	5.999	9.458	.526	.105
Rape-supportive Attitudes	1.258	0.431	.003	.253
Alcohol Consumption	0.541	0.771	.483	.063
Interaction Effect 1		Constrained to 0		
Interaction Effect 2	– 1.159	0.507	.022	– .378
Interaction Effect 3		Constrained to 0		
Interaction Effect 4		Constrained to 0		
R^2 = .125				
Criterion Variable: ΔSEU Event 12				
Intercept	42.860	21.930	.051	
Social Desirability	– 1.871	1.041	.072	– .187
Psychopathy	– 0.028	0.163	.863	– .015
Impulsivity	– 0.234	0.148	.115	– .171
Treatment Condition = 1	– 3.724	4.319	.389	– .066
Rape-supportive Attitudes	0.750	0.424	.077	.153
Alcohol Consumption	– 0.121	0.714	.866	– .014
Interaction Effect 1		Constrained to 0		
Interaction Effect 2		Constrained to 0		

Table Continues

Table 3.10. **Continued**

	b	*SE*	*p*	β
Interaction Effect 3		Constrained to 0		
Interaction Effect 4		Constrained to 0		
R^2 = .079				
Criterion Variable: ΔSEU Event 15				
Intercept	31.664	19.347	.102	
Social Desirability	– 1.616	0.997	.105	– .134
Psychopathy	0.018	0.217	.934	.008
Impulsivity	– 0.181	0.143	.204	– .110
Treatment Condition = 1	– 3.603	5.482	.511	– .053
Rape-supportive Attitudes	0.538	0.601	.371	.091
Alcohol Consumption	– 0.558	0.852	.513	– .055
Interaction Effect 1		Constrained to 0		
Interaction Effect 2		Constrained to 0		
Interaction Effect 3		Constrained to 0		
Interaction Effect 4		Constrained to 0		
R^2 = .042				
Criterion Variable: Propensity Towards Sexual Coercive Behavior				
Intercept				
Social Desirability	– 0.053	0.084	.531	–.048
Psychopathy	0.008	0.019	.684	.039
Impulsivity	– 0.003	0.013	.834	–.019
Treatment Condition = 1	– 0.740	0.483	.125	–.120
Rape-supportive Attitudes	0.118	0.055	.033	.220
Alcohol Consumption	0.123	0.064	.055	.134
ΔSEU Event 6	0.014	0.005	.007	.177
ΔSEU Event 9	– 0.013	0.009	.149	–.121
ΔSEU Event 12	– 0.002	0.010	.883	–.014
ΔSEU Event 15	0.001	0.008	.912	.010
Interaction Effect 1		Constrained to 0		
Interaction Effect 2		Constrained to 0		
Interaction Effect 3		Constrained to 0		
Interaction Effect 4		Constrained to 0		
R^2 = .132				

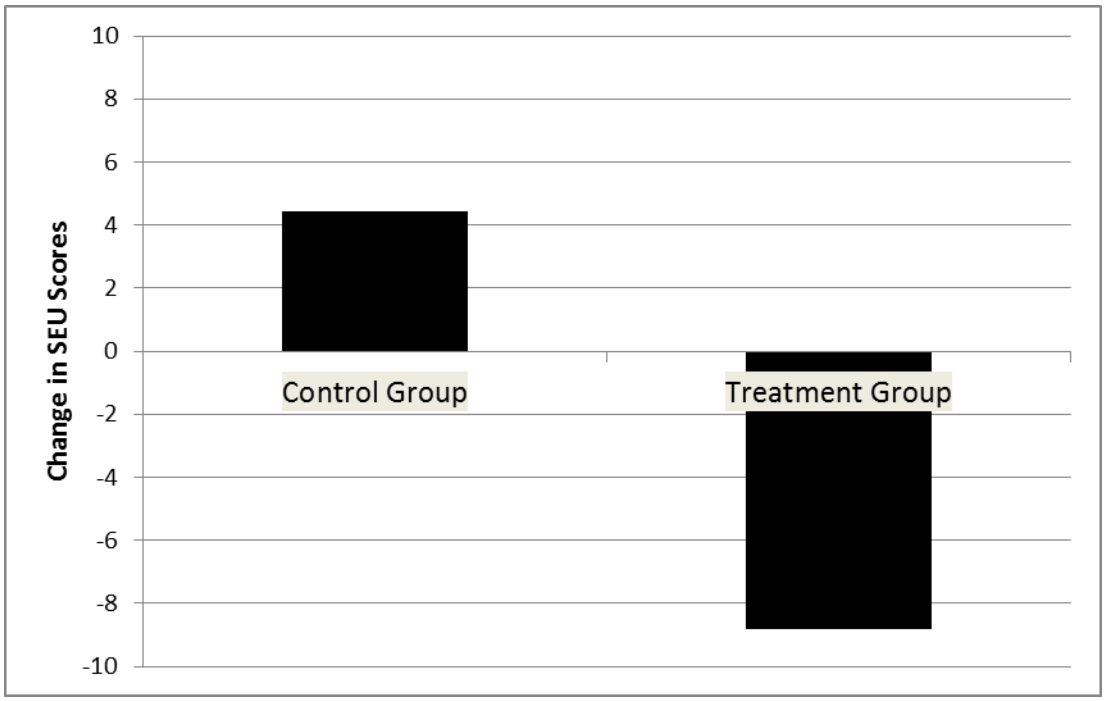
Note: Interaction Effect 1 = rape-supportive attitudes x alcohol consumption. Interaction Effect 2 = rape-supportive attitudes x treatment condition. Interaction Effect 3 = alcohol consumption x treatment condition. Interaction effect 4 = rape-supportive attitudes x alcohol consumption x treatment condition.

Event 6 is characterized by the first instance of unwanted sexual contact. For Event 6, no interactions were observed; therefore Hypotheses 3a to 3c were not supported. However, results indicate that the treatment condition variable was significant, suggesting that the difference in SEU scores between control and treatment group was –13.279 controlling for all other variables at 0. In other words, when the scores from all the other predictor variables are set to 0, the difference in SEU scores between the consider-the-opposite group and the control group is –13.279. If all other variables are set to their mean, SEU scores for the control group increases by 4.455 from first estimate to the second estimate, whereas the treatment group's SEU scores decreases by –8.823 (see Figure 3.7).

Event 9 is characterized by unwanted sexual contact with verbal coercion. As Table 3.10 indicates, the hypothesized three-way interaction was not supported. As for hypothesized two-way interactions, only rape-supportive attitudes x treatment condition interaction effect was significant. Figure 3.8 is a graphical representation of this interaction. Results indicate that the ΔSEU scores at event 9 for individuals in the treatment condition with low (m = –2.25), average (m = –1.68), and high rape-supportive attitudes (m = –1.11) was consistently low, suggesting that SEU score from first estimate to second estimate did not substantially change. For the control group however, higher rape-supportive attitudes were associated with higher ΔSEU scores, suggesting an increase in SEU scores from first estimate to second estimate. The mean ΔSEU scores for participants in the control group with low, average, and high rape-supportive attitude scores were 4.86, 12.07, and 19.28 respectively. Moreover, calculating for the simple effects using the MODEL CONSTRAINT option indicated that the difference in ΔSEU

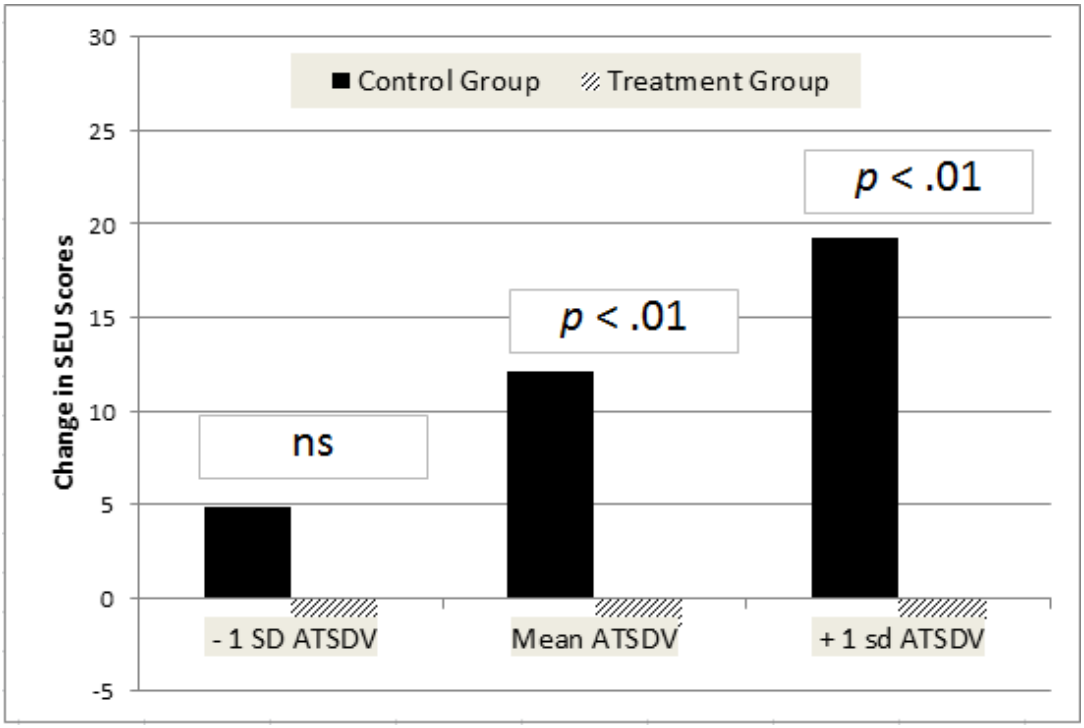
scores between control and treatment condition was apparent only for those with average (b = 13.75, SE = 4.11, $p < .01$) and high (b = 20.39, SE = 5.10, $p < .01$) rape-supportive attitude scores, but not for participants with low scores (b = 7.11, SE = 4.96, p = .15; see Figure 3.8).

Figure 3.7. **SEU Score Changes at Event 6 Between the Control Group and Experimental Group.**



Note: Mean ΔSEU for the Control and Experimental Group was estimated controlling for all other variables at the following mean scores: social desirability = 9.54, psychopathy = 50.70, impulsivity = 132.99, rape-supportive attitudes = 17.04, and alcohol consumption = 4.00.

Figure 3.8. **Change in SEU Scores at Event 9 Between Treatment and Control Group Across Different Levels of Rape-Supportive Attitudes.**



Note: Mean ΔSEU for the Control and Experimental Group was estimated controlling for all other variables at the following mean scores: social desirability = 9.54, psychopathy = 50.70, impulsivity = 132.99, rape-supportive attitudes = 17.04, and alcohol consumption = 4.00. NS = not significant at the $p < .05$.

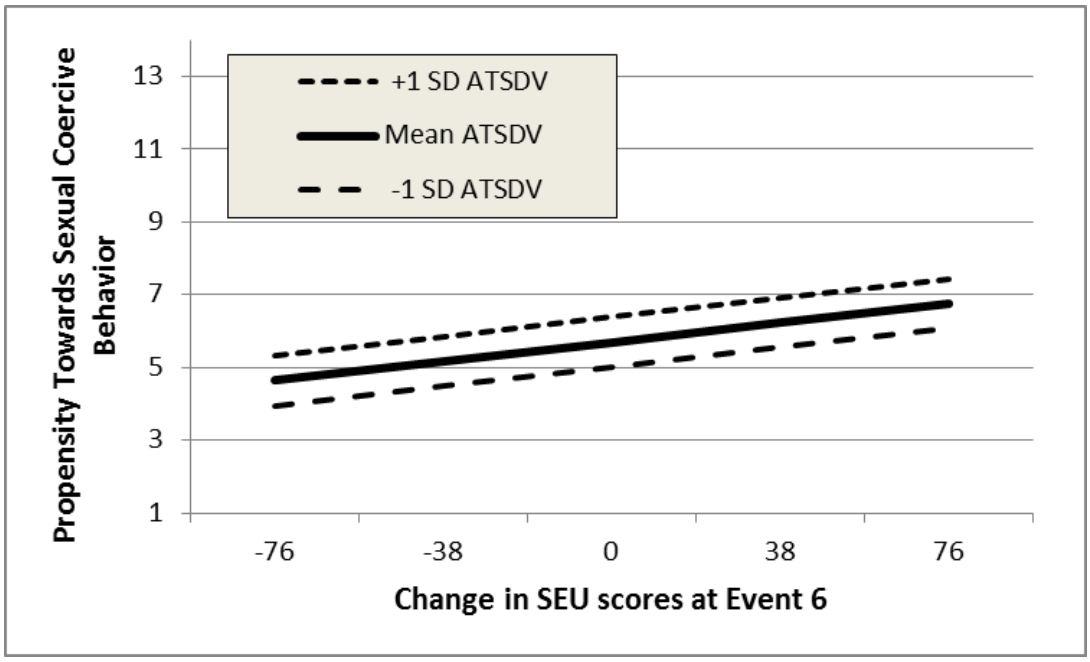
Event 12 is characterized by the presence of verbal threats and physical coercion. Event 15 on the other hand involved physical coercion. For both Events 12 and 15, all interaction effects, predictor, and control variables were not significantly associated with ΔSEU scores. Hence, Hypotheses 3a to 3c for Events 12 and 15 were not supported.

Specific Aim 4: Examine the Impact of SEU Estimates on Propensity Towards Sexual Coercive Behavior.

Specific Aim 4 posited that decreases in SEU scores result in lower propensity towards sexual coercive behavior as measured by the date-rape vignette task. Hypothesis 4a was only partially supported, with bivariate correlations (see Table 3.9) indicating that ΔSEU scores were significantly and positively associated with propensity towards sexual coercive behavior only at Event 6 intervention. The same pattern of relationship emerges even if ΔSEU scores were embedded in a larger path analytic model (see Table 3.10). When including all predictor and control variables in a larger path analytic model, Hypothesis 5a posited that rape-supportive attitudes, alcohol consumption, treatment condition, and all interaction effects will not be predictive because variations in propensity towards sexual coercive behaviors has already been accounted for by the changes in SEU score. Hypothesis 5a was not supported given that rape-supportive attitudes main effects were still significantly and positively associated with propensity towards sexual coercive behavior.

Figure 3.9 best represents the relationships previously outlined. As Figure 3.9 shows, a decrease in ΔSEU Event 6 score from first to second estimate (or a negative score) is associated with a much lower propensity towards sexual coercive behavior, whereas an increase (or positive score) results in higher propensity. In addition, higher rape-supportive attitude scores were associated with a tendency to leave the date-rape scenario much later (i.e., higher propensity towards sexual coercive behavior).

Figure 3.9. **Relationship Between Propensity Towards Sexual Coercive Behavior and Change in SEU Scores at Event 6 Across Different Levels of Rape-Supportive Attitudes**



Note: ATSDV = Attitudes towards Sexual Dating Violence Scale, measurement for rape-supportive attitudes. Estimates are calculated controlling for all other variables at the following mean scores: social desirability = 9.54, psychopathy = 50.70, impulsivity = 132.99, rape-supportive attitudes = 17.04, and alcohol consumption = 4.00.

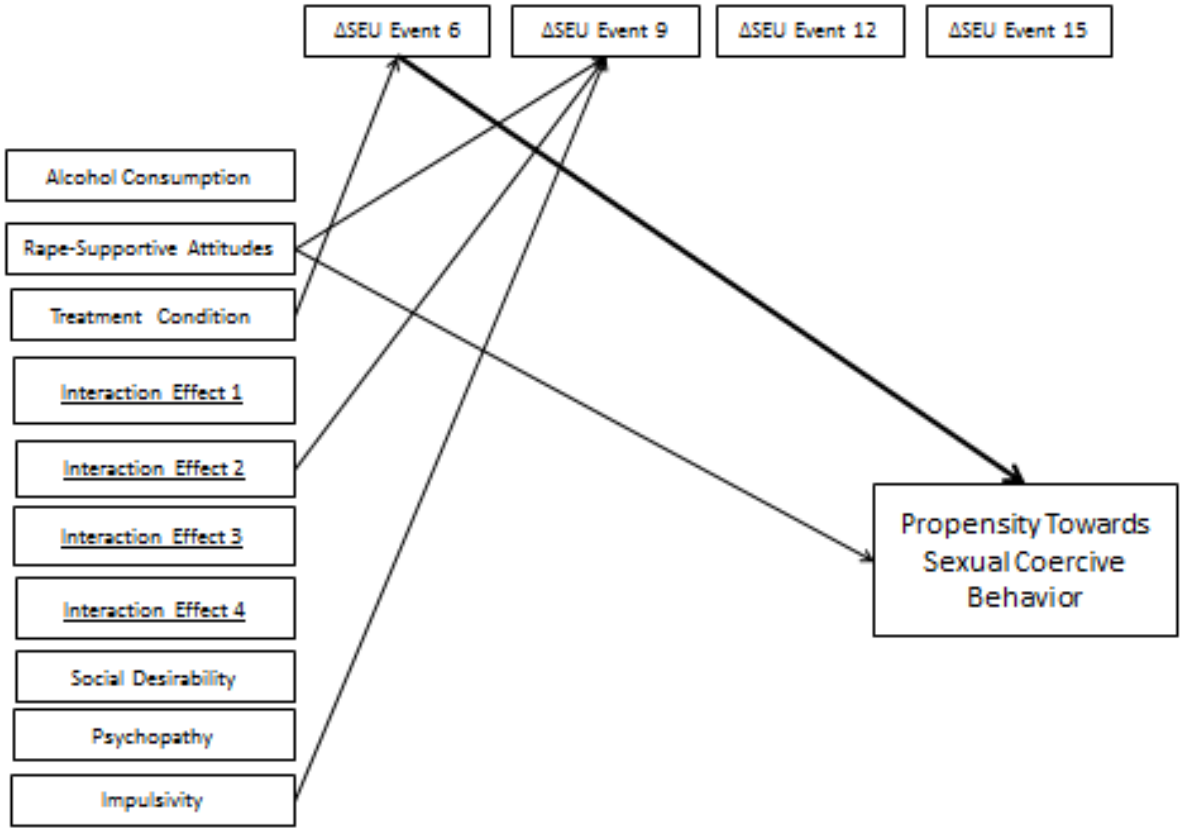
Specific Aim 5: Examine the Indirect Effect of Consider-The-Opposite Intervention on Propensity Towards Sexual Coercive Behavior Via Changes in SEU Scores

Specific Aim 5 strove to combine Specific Aims 2 to 4 in a more parsimonious path analytic mode (see Figure 1.16 and Figure 2.4). Aggregating Specific Aims 2 to 4, the argument for this study was that the consider-the-opposite intervention, subject to the interaction between rape-supportive attitudes and alcohol consumption, reduces the propensity towards sexual coercive behavior by reducing decision bias, as measured by the SEU. Due to the relative importance of decision making as measured by the SEU,

Hypothesis 5a posited that all other predictor variables and their interaction effects will no longer be predictive of propensity towards sexual coercive behavior when regressed alongside with ΔSEU scores. Hypothesis 5a has been addressed in the previous section.

Contributing to the rationale of Specific Aim 5, it was also hypothesized that the consider-the-opposite intervention will impact propensity towards sexual coercive behavior via the changes in ΔSEU scores. Hypothesis 5b was examined by re-analyzing the path model using a bias-corrected bootstrap procedure (Bootstrap = 5,000) and the INDIRECT option in Mplus to calculate the indirect effect from treatment condition to propensity towards sexual coercive behavior. An indirect effect is presumed to exist when 0 is not included in the 95% C.I. Significant associations were only present between treatment condition and ΔSEU scores at Event 6, and ΔSEU scores at Event 6 and propensity towards sexual coercive behavior. Hence, indirect effects were only assessed for paths involving Event 6. Results indicate that the indirect effect was – 0.192, with 95% C.I. between – 0.503 to – 0.035, thereby indicating that the consider-the-opposite reduces the propensity towards sexual coercive behavior by reducing the SEU scores, but only at Event 6. Figure 3.10 presents that final path analytic framework incorporating the results of the study, with non-significant paths omitted.

Figure 3.10. **Path Analytic Framework for this Study with Non-significant Paths (*p* > .05) Omitted**



Summary of the Results

Five specific aims were outlined in this study. Specific Aim 1 endeavored to replicate previous research suggesting the synergistic effects of rape-supportive attitudes and alcohol consumption in predicting past sexual coercive behaviors. The predicted interaction (Hypothesis 1a) was found; however simple effects hypotheses (Hypotheses 1b and 1c) were only partially supported (see also Figure 1.9 versus Figure 3.4). Hypothesis 1b posited that high rape-supportive attitude was a necessary and sufficient precondition for perpetrating sexual coercive behaviors, regardless of alcohol

consumption. This hypothesis was only partially supported, in that those with high rape-supportive attitudes have the highest reported past sexual coercive behavior, but only among those with high alcohol consumption. For individuals with lower rape-supportive attitude, those with higher alcohol consumption were expected to have a higher self-reported sexual coercive behavior compared to those with low alcohol consumption (Hypothesis 1c). Hypothesis 1c was anchored on the assumption that males who consume large amounts of alcohol have a residual detrimental effect to their decision making capacities, thereby making them more prone to commit sexual coercive behavior. This hypothesis was not supported as results indicated that those with low rape-supportive attitudes had the lowest self-reports of sexual coercive behavior, regardless of alcohol consumption (see Figure 3.4).

Specific Aim 2 examined the three-way interaction of rape-supportive attitude, alcohol consumption, and consider-the-opposite in predicting propensity towards sexual coercive behavior (Hypothesis 2a). The simple effects hypotheses (Hypotheses 2b and 2c) were based on the assumption that the pattern of relationships among rape-supportive attitudes, alcohol consumption, and propensity towards sexual coercive behavior varied between the control group and the consider-the-opposite group. Specifically, Hypothesis 2b posited that the pattern of relationships will be similar to those found in Specific Aim 1 hypotheses: a) those with high rape-supportive attitudes will have the highest propensity towards sexual coercive behavior regardless of alcohol consumption, and b) those with low rape-supportive attitudes but with high alcohol consumption will have a higher propensity towards sexual coercive behavior compared to those with low alcohol consumption. This hypothesis was based on the logic that, because no correction in

decision processes was made, similar effects were expected between those in the control group and the results of Specific Aim 1. Because of the impact of the consider-the-opposite intervention, Hypothesis 2c predicted that rape-supportive attitudes and alcohol will not predict propensity towards sexual coercive behavior. Specific Aim 2 results indicated no significant three- or two-way interaction among variables of interest, and only main effect of alcohol predicted propensity towards sexual coercive behavior. Hence, Hypotheses 1a to 1c was not supported.

Specific Aims 3 posited that consider-the-opposite reduces SEU scores, subject to the complicated interaction between rape-supportive attitude and alcohol consumption (Hypothesis 3a three-way interaction). Specific Aim 3 posited that those who have high rape-supportive attitude scores and high alcohol consumption will have the highest reduction in SEU scores after correcting for their decision biases through the consider-the-opposite intervention (Hypothesis 3b). For those in the control group, no reduction was expected (Hypothesis 3c). Across Events 6, 9, 12, and 15, the three-way interaction hypothesis (Hypothesis 3a) was not supported. Hypothesis 3b and 3c was only partially hypothesis in that any impact of consider-the-opposite was observed only at Events 6 and 9, and the two-way interaction proposed (i.e., differential impact of the intervention across different levels of rape-supportive attitude and alcohol consumption) was only apparent at Event 9. For Event 6, only consider-the-opposite main effect significantly predicted decrease in SEU scores, such that reduction in SEU scores was observed for the treatment group but not the control group. Stated differently, consider-the-opposite was effective in reducing SEU regardless of rape-supportive attitude, alcohol consumption, and other control variables.

Specific Aims 4 and 5 hypothesized that reduction in SEU scores leads to a reduction in propensity towards sexual coercion, and that consider-the-opposite impacts sexual coercive behavior through its influence on SEU score reduction. Specific Aim 4 Hypothesis posited that a reduction in SEU scores at the four intervention events will predict lower propensity towards sexual coercive behavior. Hypothesis 4 was only partially supported in that larger reductions in SEU scores resulted in lower propensity towards sexual coercive behavior, but only at Event 6 (see Figure 3.9). On the other hand, Specific Aim 5 suggested that the reduction in SEU scores is a sufficient predictor (i.e., other variables will no longer be associated with the criterion variable; Hypothesis 5a), and that consider-the-opposite's impact on propensity towards sexual coercive behavior is primarily seen through its impact on the reduction in SEU scores (Hypothesis 5b). Hypothesis 5a was not supported, in that rape-supportive attitudes predicted propensity towards sexual coercive behavior despite controlling for other variables and change in SEU scores. Hypothesis 5b was only partially supported, in that the indirect effect of consider-the-opposite on propensity towards sexual coercive behavior was manifested only through Event 6.

Chapter 4: Discussion

Decision Making in a Date-Rape Scenario

The first overarching goal for this study was to examine how decisions are made within a date-rape scenario, and how rape-supportive attitudes and alcohol consumption impacts potential decision biases. To review, the SEU is comprised of four components: the perceived utility or goodness of engaging in a behavior, the subjective probability estimation of the utility occurring, the perceived costs or disadvantages of engaging in a behavior, and the subjective probability estimation of the cost occurring. It was hypothesized that these estimates guides decisions to engage in a behavior, in this case, sexual coercive behavior. Across multiple analyses, rape-supportive attitudes were the only consistent predictor of SEU scores. Hence, this section will focus on the role of rape-supportive attitudes in decision making, whereas alcohol consumption will be discussed later in the Discussion section.

One prominent result of this study suggested that decisions changed depending on the social context. The results of this study, along with others (Tuliao et al., 2014, 2015; see also Figure 1.3), indicated that participants made and changed their estimations and their decisions (as operationalized by the SEU scores) depending on the events, the context, and the information available. In particular, when the perpetrator is engaging in coercive behaviors and the victim is resisting (e.g., Phase 2, Phase 4, and Phase 6), SEU scores decreased, further suggesting a decrease in weight given to the utility and in the perceived probability of the utility of the behavior occurring, and an increase in the cost and in the perceived probability of the cost of the behavior occurring. The opposite is true when the couple engages in consensual flirting and kissing (e.g., Phase 1) or when

the perpetrator apologizes or stops his behavior, or when the victim attempts to re-establish her boundaries (e.g., Phase 3 and Phase 5; see also Figure 3.2 and Table 3.5).

These results can be interpreted from different theoretical perspectives. From an information processing lens (Heusmann, 1998), the first stage of the perpetration of aggressive behavior is encoding and interpretation of environmental cues. The I^3 theory (Slotter & Finkel, 2011) suggests that an aggressive event is initiated by instigating factors, i.e., factors in the environment that activate aggressive impulses. From a Rational Choice perspective, the information available in the environment is actively incorporated into criminal decision making processes (e.g., Beauregard et al., 2010). Overall, what the results and these theoretical frameworks emphasize is that social environmental cues do matter in making decisions. One interesting finding though in the study is that the participants seem to carry over the information the occurred in the earlier parts of the event into their decision processes much later in the story. For instance, in all events that include consensual kissing (Event 5, 7, 11, and 14), SEU scores at the latter part of the story preceded by several coercive behaviors (Event 14 m = 37.32, sd = 39.95) were significantly lower compared to the first consensual kissing event (Event 5 m = 103.07, sd = 103.07, sd = 43.50) or consensual kissing after the first incidence of unwanted sexual contact (Event 7 m = 49.06, sd = 41.80; Repeated Measures ANOVA F (3, 480) = 128.32, $p < .01$, partial $\eta^2 = .45$, all pairwise comparisons using LSD significant at $p < .01$).

Results of bivariate correlations indicated that rape-supportive attitudes were significantly and positively associated with SEU scores from Event 1 to Event 15 (see Table 3.6). In other words, male college students who endorsed higher rape-supportive

attitudes tend to have significantly higher SEU scores at the start of the date-rape scenario, and the high scores tend to persist throughout the story. Attitudes have traditionally been defined as an amalgamation of cognitive (beliefs, evaluations and expectations), emotional, and behavioral components about an object that is stored in a person's memory structure (Fazio & Olsen, 2007). Prior research also suggested that the object-appraisal function of attitudes are utilized when interpreting ambiguous stimuli (Fiske & Taylor, 2013) and, by resorting to a quick-and-dirty evaluation strategy rather than a more thorough but effortful one, makes decision making quicker and easier (Blascovich, Ernst, Tomaka, Kelsey, Salomon, & Fazio, 1993; Fazio et al., 1992). Utilizing an information processing model, the results could indicate that participants resort to preexisting knowledge structure, expectations, and memory to guide interpretation of social cues and subsequent decision making (Fiske & Taylor, 2013; Nisbett & Ross, 1980; Ward, 2000), as operationalized by the SEU. These results could also shed light as to how rape-supportive attitudes influences sexual coercive behavior, i.e., through its influence on decision making.

Examining the Effect of Consider-The-Opposite

The second overarching goal for this study was to examine how de-biasing strategies, specifically consider-the-opposite, can reduce decision biases associated with sexual coercive behaviors. Because the intervention was only implemented at four events in the date-rape scenario, the impact of consider-the-opposite in the SEU scores at Event 6, Event 9, Event 12, and Event 15 will be discussed in succession.

Change in SEU Scores at Event 6

The previous section explicated how rape-supportive attitudes are associated with SEU scores. Results of Specific Aim 3 indicated that reduction in SEU scores was observed for the consider-the-opposite group, but only at Event 6. Stated differently, consider-the-opposite was effective in reducing SEU regardless of rape-supportive attitude, alcohol consumption, and other control variables. This result is consistent with other analyses in this study (see Figure 3.3 Panel A and Figure 3.6 Panel A).

Given that consider-the-opposite effects were only observed at Event 6 and Event 9, it is essential to consider the contexts in which these effects took place. Event 6 is characterized by the first instance of unwanted sexual contact, with the man touching the woman's breasts and eventually being rejected. Prior to Event 6, all interaction were consensual, with both parties engaging in flirtation and consensual kissing. It can be argued that Event 6 is characterized by ambiguity, in that the attempted sexual contact was not blatantly coercive and preceded by behaviors that signal acceptable romantic interaction. The results of Event 6 should be interpreted within this context of ambiguity, taking into account all the information already presented to the participants.

To fully understand how consider-the-opposite impacted the change in SEU scores, it is important to first discuss how rape-supportive attitudes are related to SEU scores. Event 6 is ambiguous, in that it can be interpreted as the woman declining all future sexual advances, as the woman wanting to continue the romantic interaction but postponing sexual behaviors much later in the scenario, or as the woman simply playing "hard to get." As previously discussed, rape-supportive attitudes were associated with higher SEU scores at almost all events of the date-rape scenario (see Table 3.6). Given

Event 6's ambiguity, the information processing model suggests that individuals tend to rely on memory, preexisting knowledge structure, expectations, and attitudes to guide the interpretation of social cues and social decision making (Blascovich et al., 1993; Fazio et al., 1992; Fiske & Taylor, 2013; Nisbett & Ross, 1980; Ward, 2000). As such, individuals with high rape-supportive attitudes could have relied on their beliefs and expectations to interpret the ambiguous event (e.g., the woman is merely playing "hard to get"), thereby overemphasizing the utility and underemphasizing the cost of their behavior. Hence, there is reason to believe that heuristically driven decision processes are being utilized instead of a more effortful but probably more accurate one (Over, 2004; Keren & Teigen, 2004). In general, the consider-the-opposite intervention simply instructs individuals to ask oneself "What are other reasons that my initial judgment might be wrong?" (Larrick, 2004). Requiring the treatment group participants to think of evidence contrary could have resulted in a shift away from a quick-and-dirty, attitude-driven estimation strategy, particularly in ambiguous contexts.

Change in SEU Scores at Event 9.

Event 9 is characterized by the man's unwanted sexual contact, by being rebuked by the woman, and by verbal coercion. Prior to Event 9, multiple events of refusal of the man's sexual advances was present, as well as resumption of consensual kissing. As such, the woman in the story has had multiple instances where she establishes her boundaries, i.e., the type of sexual behavior she permits. Across these events of being rebuked and reestablishing boundaries, a decline in SEU scores were observed starting from the initial incident of unwanted sexual contact (Event 6; see Figure 3.2). With all the information available and all the incidents that occurred from Event 6 to Event 9, the

participants in the story could be accurately interpreting that the woman in the story is not interested in sexual intercourse. As such, the SEU scores reflect low utility (both importance of and probability of having sexual intercourse) and higher cost estimates.

For Event 9, results indicated that SEU scores increased from first estimation to second estimation for the control group (see Figure 3.3 Panel B and Figure 3.6 Panel B). For the treatment group, this increase was not observed. The results for Specific Aim 3 at Event 9 reflected a similar pattern, subject to an interaction with rape-supportive attitudes. Specifically, for the control group, SEU scores increased from the first to second estimate, but only among those with mean and above average rape-supportive attitudes. No SEU increase was observed for the consider-the-opposite group.

The increase in SEU scores for the control group at Event 9 was not anticipated. To make sense of this result, it is first essential to emphasize that the descriptive statistics of the SEU scores at Event 9a (first estimation) seems to be showing floor effects, and are about the same level as events that contain more coercive behaviors (see Table 3.5). Lifting from the information processing model utilized in Event 6, it is possible that control group participants with average and high rape supportive attitude reverted to heuristically-driven reasoning and ignored the events that occurred earlier. On the other hand, consider-the-opposite intervention prevented those in the treatment group, especially those with high rape-supportive attitudes, from resorting to a quick-and-dirty decision making process.

Change in SEU Scores at Event 12 and 15.

Events 12 and 15 are composed of incidents involving more blatantly sexual coercive behaviors, and are preceded by events suggesting an escalation of aggressive

behavior. For Events 12 and 15, neither interaction effects nor main effects were significantly associated with change in SEU scores. Furthermore, results of the 2 x 2 mixed ANOVA indicate that SEU scores did not change from first estimate to second estimate for both control and treatment groups. Examining descriptive statistics (see Table 3.5 and Figure 3.2) also suggests that the SEU scores at Event 12 (average change in SEU scores = 2.98, *sd* = 28.23) and 15 (average change in SEU scores = – 1.75, *sd* = 34.01) are showing floor effects. Taking these information into account, one statistical interpretation that can be derived is that no change in SEU scores was observed because the scores were already at the minimum. Hence, with little variability in the criterion variable (i.e., no noticeable changes from the first SEU estimate to the second SEU estimate), it is understandable why predictor and control variables were non-significant. At a conceptual level, the results could suggest that, when the stimuli are unambiguous, college males can adequately make appropriate estimations, leading to low SEU scores. Hence, consider-the-opposite is no longer effective as SEU scores are already at the minimum.

Examining the Consider-The-Opposite's Impact on Propensity Towards Sexual Coercive Behavior

Taking the results of Event 6, 9, 12 and 15 together indicates that consider-the-opposite intervention is effective only at certain contexts, specifically those that are marked by ambiguity and by verbal coercion. Added to these, results of the bivariate correlations show that SEU scores at Phase 1 and 2 (which contains Events 1 to 9) was positively associated with propensity towards sexual coercive behavior. To review, Phases 1 and 2 is composed of scenarios that involve flirtation, consensual kissing, initial

unwanted sexual contact, and negotiation among parties. As severity of sexual coercive behaviors increase and become more blatant, as in Events 12 and 15, male college students are better in reading the situation, resulting in floor effects and the overall lack of effectiveness of the consider-the-opposite intervention. From a prevention perspective, these results are important given that the goal is to prevent males from escalating to more severe sexual coercive behavior. Correcting decision biases at the earlier and more ambiguous stages helps reduce further escalation. The results of Specific Aims 4 and 5 further emphasize this point.

Results of Specific Aim 4 indicated that change in SEU scores at Event 6 was predictive of propensity towards sexual coercive behavior. Specifically, larger reduction in SEU scores at Event 6 results in participants leaving the date-rape scenario two events earlier (see Figure 3.9). Results of Hypothesis 5b also suggested that the indirect effect of consider-the-opposite on propensity towards sexual coercive behavior was manifested through Event 6. In addition, bivariate correlations indicated that higher SEU scores at Events 1 to 9 were associated with higher propensity towards sexual coercive behavior (see Table 3.6). Taking these results together highlights the importance of decisions made during the early and ambiguous events in predicting sexual coercive behavior. In addition, consider-the-opposite intervention was effective in reducing propensity towards sexual coercive by improving decision making during these ambiguous or less coercive events.

The results of Specific Aims 4 and 5 parallels other research that suggest that the frequency of misperception of women's cues (e.g., misinterpreting friendliness for sexual interest) was associated with sexual coercive behaviors (Abbey, McAuslan, Zawacki,

Clinton, & Buck , 2001) and could potentially mediate the rape-supportive attitude – sexual coercive behavior relationship (Abbey et al., 2011; Landoy, Tuliao, McChargue, & Klanecky, 2015). Although SEU estimations are higher across the scenario among those with high rape-supportive attitudes, the results of this study suggest that decisions or estimations made at more ambiguous contexts guide behaviors more than those events that are more blatant. The accurate, realistic, or cautious interpretation of ambiguous behavior, stimuli, or contexts is important as it could lead to an escalation of sexually coercive behaviors. For instance, a college male who interprets the woman's behavior at Event 6 as merely "playing hard-to-get" rather than as declining all future sexual contact could further engage in verbal coercion and unsolicited sexual contact. Eventual rejection or rebuke could trigger an "I was led on" schema which could trigger further sexual violence if the schema includes such beliefs (e.g., "I am justified to rape if I've been led on"; e.g., Langton, 2007; Polaschek & Gannon, 2004; Ward, 2000). Again, these schema, beliefs, and attitudes are distal factors but exert their influence on decision making, as suggested in the positive association between rape-supportive attitudes and SEU scores. Consider-the-opposite therefore corrects these heuristically-derived SEU estimations during these ambiguous events by requiring the participants to consider initially ignored information or evidence to the contrary.

Examining the Effects of Alcohol Consumption

Based on a robust literature suggesting alcohol's link to sexual coercive behaviors (Abbey, Wegner, Woerner, Pegram, & Pierce, 2014; Crane, Godleski, Przybyla, Schlauch, & Testa, 2015), one major assertion in this study was that the propensity to consume alcohol impairs decision making, which subsequently increases the likelihood

of sexual coercive behavior perpetration. However, results on alcohol consumption in this study were inconsistent. First, bivariate correlations indicated that alcohol consumption was associated with self-reports of past sexual coercive behaviors and propensity towards sexual coercive behaviors (see Table 3.4), but not with SEU scores (see Table 3.6). Second, Specific Aim 1 results indicated a synergistic effects between the two focal predictor variables, such that those with high alcohol consumption and high rape-supportive attitudes reported the highest incidence of past sexual coercive behavior perpetration. Third, Specific Aim 2 results showed that alcohol consumption was associated with increased propensity towards sexual coercive behavior (see Table 3.8), however this effect disappeared when change in SEU scores was included in the model (Specific Aims 3 to 5; also see Table 3.9). Aggregating the results suggest that alcohol consumption was associated with sexual coercive behavior, but not with decisions associated with sexual coercive behavior. At this point, it is important to reiterate that alcohol consumption was operationalized using a retrospective self-report measure of consumption rather than an alcohol administration task where participants are typically provided with an alcoholic beverage prior to an experimental task (e.g., Davis, Schraufnagel, Jacques-Tiura, Norris, George, & Kiekel, 2012).

Abbey's (2002) review can help reconcile the inconsistent findings regarding alcohol consumption and sexual coercive behaviors in this study. According to Abbey (2002), alcohol's role on sexual coercive behavior can be categorized into psychological and pharmacological components. At the psychological level, men tend to have expectations regarding alcohol and sexual behavior. Expectations that one will be more powerful, more sexual, and more aggressive tend to be self-fulfilling, independent of the

pharmacological effects of alcohol, which leads to sexual coercive behaviors (e.g., George & Norris, 1991; Tuliao & McChargue, 2014). Abbey (2002) also suggested that men strongly equate drinking with a woman and having sex with her, and that the mere presence of alcohol in a heterosocial dating context leads a man to assume that a woman would want to have sex. At the pharmacological level, alcohol tends to impair higher order cognitive processes, leading to a narrower perceptual field and lowered ability to attend to multiple social cues (Alcohol Myopia Theory; Steele & Josephs, 1990), and subsequently decision making problems.

Appreciating the pharmacological and psychological effects of alcohol can help reconcile the discrepancies about alcohol consumption, SEU scores, and sexual coercion in this study. Specific Aim 1 examined *past* sexual coercive behavior and found a synergistic interaction between rape-supportive attitude and alcohol consumption (measured retrospectively). Past perpetration of sexual coercive behaviors could have been influenced by alcohol at the psychological level. Specifically, individuals with high alcohol consumption could also share sex- and aggression-related alcohol outcome expectancies, which reflected higher incidence of sexually coercive behaviors.

The significant main effect of alcohol consumption predicting propensity towards sexual coercive behavior in Specific Aim 2 can also be explained by alcohol outcome expectancies. In the date-rape scenario, the perpetrator and the victim were both inebriated. Given that decision making was not yet accounted for in Specific Aim 2, alcohol consumption's main effect could reflect the participants' expectancies regarding alcohol and sexual behaviors. If this assertion is true, it can be expected that those who do not drink alcohol will not have an alcohol and sexual behavior expectancy suggested

by Abbey (2002), and will leave the date-rape story earlier (measurement for propensity toward sexual coercive behavior). On the other hand, those who drink alcohol may expect or believe that, because both characters in the date-rape story have been drinking, being more coercive (and leaving later in the date-rape scenario) is permissible. To test this hypothesis, non-drinkers (n = 42) and drinkers (n = 116) propensity towards sexual coercive behavior were compared using a t-test. Results indicate that non-drinkers (m = 4.62, sd = 2.59) left the date-rape scenario earlier compared to drinkers (m = 6.03, sd = 3.17, t = – 2.58, p = .01). Hence, there is reason to believe that the main effect of alcohol in Specific Aim 2 could have been driven by expectancies associated with the psychological component of alcohol.

At the pharmacological level, the synergistic effects observed in Specific Aim 1 (past sexual coercive behaviors) are more consistent with the I^3 theory (Slotter & Finkel, 2011), which suggests that aggressive behavior is a result of a confluence of *instigating*, *impelling*, and *(dis)inhibiting* factors. Instigating factors or triggers are social contexts or events (e.g., sexual rejection) that trigger the cognitive, affective, and behaviors associations that prime aggression. The likelihood that an aggression-invoking event results in an aggressive behavior depends on the impelling factors, which could be social norms or personal beliefs or values (e.g., rape-supportive attitudes) that magnify the experience of aggressive impulse. Inhibiting or disinhibiting factors are variables that determine whether aggressive impulses can be dampened or suppressed (e.g., alcohol intoxication). Consistent with the I^3 theory, the results of Specific Aim 1suggests that impelling (rape-supportive attitudes) and disinhibiting (alcohol intoxication) factors need to be present in an instigating context in order to increase likelihood of aggressive

behavior. How alcohol consumption becomes a disinhibiting agent is better accounted for by the Alcohol Myopia Theory (Steele & Josephs, 1990), which suggests that alcohol's pharmacological effects limits higher order cognitive functioning.

Because participants were not inebriated at the time of the task, the pharmacological effect of alcohol on decision making was not apparent. This explains the lack of bivariate correlation between alcohol consumption and SEU scores observed and the lack of association between alcohol consumption and change in SEU scores. Furthermore, when decision processes were included in the larger parsimonious model, the alcohol consumption main effect seen in Specific Aim 2 disappeared. This could further suggest that decision processes exerted a greater impact on propensity towards sexual coercive behavior in the absence of alcohol's pharmacological effect.

Implications

Given that college women experience higher rates of sexual assault compared to the general population (National Institute of Justice & Centers for Disease Control and Prevention, 1998), the results of this study have important implications for reducing the incidence of male-to-female sexual violence in college campuses. Sexual assault prevention programs in higher education settings tend to address rape-supportive attitudes (see Anderson & Whitson, 2005; Breitenbecher, 2000; Brecklin & Forde, 2001; Flores & Hartlaub, 1998; Lonsway, 1996; Morrison, Hardison, Mathew, & O'Neil, 2004; Yeater & O'Donohue, 1999). Results of this study indicate that decisions made at ambiguous scenarios play a role in subsequent sexual coercive behavior. Prevention programs can implement adjunct interventions that teach strategies that improve decision quality especially during dating or heterosocial interactions (e.g., fraternity parties). Although

this study only examined consider-the-opposite (which can be incorporated as an intervention), other de-biasing interventions do exist that could also prove to be beneficial (Larrick, 2004). These decision interventions could be motivational in nature (e.g., by increasing motivation to arrive at an accurate estimate and holding individuals accountable for their decisions), cognitive (training in the proper utilization of decision rules and problem representations, and educating about decision biases), or technological strategies (utilization of technological tools that improve decisions such as the use of mobile phone applications; Larrick, 2004).

One way to improve existing rape-prevention interventions in higher education setting is through adding alcohol-related components. The results of this study suggest that both psychological and pharmacological components of alcohol increase the risk of perpetration of sexual coercive behaviors, particularly among college males with elevated rape-supportive attitudes. For the psychological component, prevention programs can include interventions that correct expectancies associated with alcohol and sexual behaviors. For the pharmacological component, interventions can include protective behavioral strategies (e.g., Arterberry, Smith, Martens, Cadigan, & Murphy, 2014) that provide concrete coping strategies that college students can utilize even prior to drinking to prevent subsequent sexual coercive behaviors. These interventions can include educational components similar to those already implemented in brief alcohol interventions for college students (e.g.., Alcohol Skills Training Program; Kivlahan, Marlatt, Fromme, Coppel, & Williams, 1990).

Finally, sexual assault prevention interventions can be more effective by targeting males who are at the highest risk of perpetration. Results of Specific Aim 1 indicated

that college males who have elevated rape-supportive attitudes and who have high alcohol consumption have reported that highest number of self-reported sexual coercive behavior perpetration.

Limitations and Future Directions

The results of this study inform the literature on sexual coercive behaviors, particularly by examining the role of decision making and how decision biases can be attenuated. However, the results need to be tempered in light of the limitations. One area that can be improved in future research is the measure of propensity towards sexual coercive behavior. Although the measurement used in this study was lifted from other research (e.g., Flowe at al., 2011; Gross et al., 2001; Messman-Moore & Brown, 2006), it is still far from actually predicting future perpetration. This limitation is made more salient given the lack of association between measures of past self-reports of perpetration and propensity towards sexual coercive behavior (r = .03, see Table 3.4). Future research can alleviate this issue by conducting a prospective study to further understand how decision biases at baseline predict future behavior.

The prevalence of sexual coercive behaviors of the sample of this study also needs to be accounted for when interpreting subsequent analyses. The prevalence of sexual coercive behaviors reported by this study's samples was much lower compared to other studies. Using the SES-M, only 7% of the current sample reported engaging in any form of forced sexual contact, 2% engaged in sexual intercourse through verbal coercion, and 1% had sexual intercourse when the victim was too intoxicated to provide adequate consent. On the other hand, other studies report between 33% (Abbey, McAuslan, Zawacki, Clinton, & Buck, 2001; Loh, Gidycz, Lobo, & 2005) to 58% (Parkhill &

Abbey, 2008; Zawacki, Abbey, Buck, McAuslan, & Clinton-Sherrod, 2003) of male college students report perpetrating at least one form of sexual coercive behavior using a similar instrument

Although this study specifically examined male college students, the population choice limits the generalizability of the findings of the role of decision bias on sexual coercive behaviors, particularly towards community and forensic samples. The prevalence of sexual coercive behavior reported by this study's participants are much lower compared to those found in a community sample, which suggested that 10% reported forced sexual contact, 22% engaged in sexual intercourse through verbal coercion, and 7% engaged in sexual intercourse where the victim was impaired (Abbey, Jacques-Tiura, & LeBreton, 2011). Higher educational levels could have also mitigated the prevalence of and factors associated with sexual coercive behaviors. For instance, the prevalence of intimate partner sexual violence were much higher among those with no high school diploma or high school only graduates compared to those who were college educated (Smith, Thronton, DeVellis, Earp, & Coker , 2002). Future research can expand this study by examining decision processes related to sexual coercive behaviors among males in a community and forensic samples.

The current sample had a mean score of 5.62 in the propensity towards sexual coercive behavior and 80% reported wanting to leave by Event 7, suggesting that majority had opted to leave even before physical coercion has taken place. Furthermore, the sexual coercive behavior reported in this study comprised mostly of unwanted sexual contact, and almost no coerced sexual intercourse. Hence, the low endorsement of sexual coercive behaviors could have influenced the unsupported hypotheses in this study. The

generalizability of this study is also suspect given the range of sexual coercive behaviors endorsed, so results of this study are better interpreted as pertaining to less severe or less coercive behaviors (e.g., unwanted sexual contact) rather than to more severe ones which include physical coercion.

As previously mentioned, alcohol can influence sexual coercive behaviors either through its psychological effects or pharmacological effects. The current study measured alcohol primarily through self-reported consumption. Unfortunately, the psychological component of alcohol (e.g., alcohol outcome expectancies) were not measured and evaluated in this study. In addition, all participants were not inebriated during the date-rape task, which could account for the lack of relationship between alcohol and SEU. To address these limitations, future research should replicate this study by incorporating measures related to alcohol expectancies and/or conducting an alcohol administration study.

The low prevalence of participants with problematic drinking behavior could have also impacted the results that involve alcohol consumption. Examining the full AUDIT score, 73% of the current sample scored 8 and lower for the full AUDIT, suggesting that majority were not considered having problematic drinking (Babor et al., 2001; Saunders et al., 1993). Some of the hypotheses in this study were anchored on the assumption that heavy alcohol use has a residual impact on decision making, which subsequently impacts sexual coercive behavior. Hence, not having a sufficient number of participants with problematic drinking could explain the lack of effects found for alcohol consumption. Replicating this study with a larger number of individuals with problematic drinking pattern should be conducted.

Research conducted in the past decades has implicated the role of emotions in decision making (Lerner, Li, Valdesolo, & Kassam, 2015). Unfortunately, the role of emotion in SEU-based decision making was not examined in this study. This limitation is made more salient given other research suggesting that emotions and sexual arousal was associated with decision making and sexual coercive behaviors (Ariely & Loewenstein, 2006; Bouffard, 2002). Future research can examine how sexual arousal and emotions exacerbate decision biases found in this study.

Another challenge to the generalizability of this study is the percentage of Caucasians (71%) compared to other ethnicities who participated in this study. Some research indicates that the pattern of sexual assault and the relationships among predictors of sexual coercive behavior seems to be similar across ethnicities (e.g., Caucasian and African American community samples, Abbey, Parkhill, BeShears, Clinton-Sherrrod, & Zawacki, 2006), whereas others indicate that Caucasians (57%) account for a higher prevalence of sexual assault perpetration compared to other ethnicities combined (Planty, Langton, Krebs, Berzofsky, & Smiley-McDonald, 2016). As such, there is a need to extend this study to minority population and examine how decision making processes vary across different ethnicities.

The online or web-based nature of this study could have affected the participants' responses and induce unforeseen error. Although participants were instructed to complete the study alone, this cannot be ascertained. In addition, it was also unclear whether participants were only accomplishing the online survey or if they were distracted by other activities such as watching television. Decision readiness and motivation to engage in a decision task are variables that influence decision quality (Larrick, 2004; Soll

et al., in press). Participants did endorse high scores in the rudimentary measure of decision readiness (i.e., "Did you take the task seriously?"; *m* = 4.37 out of 5.00, *sd* = 0.77), it is possible that these answers reflect demand characteristics. Future research can improve on the current study by employing a traditional laboratory study wherein participants are in a room without other sources of distraction or other people involved who could influence the responses.

Conclusion

Women in higher education have a higher prevalence of experiencing sexual assault perpetrated by college men. As such, there is a need to address this issue, particularly by understanding the risk factors of sexual coercive behaviors and by proposing novel avenues of intervention that has not been examined before. The current study proposes that decision making is a crucial, proximal variable that can help understand how distal factors such as rape-supportive attitudes and alcohol consumption impact sexual coercive behaviors. This study examined the role of rape-supportive attitudes, alcohol consumption, and decision biases in sexual coercive behavior among college males. Although alcohol did not factor much in the results of this study, it was proposed that both psychological and pharmacological components of alcohol consumption can still very well impact decision making. The results of this study indicated that rape-supportive attitudes influenced decision making, particularly in ambiguous events. Specifically, college males with high rape-supportive attitudes resorted to their misogynistic beliefs when interpreting heterosocial interactions that can be interpreted in different ways, thereby leading to subjective estimations that overemphasize the utility and probability of having sexual intercourse with a woman and

underemphasizing the potential cost of engaging in coercive behaviors. Consider-the-opposite intervention attenuates this decision bias by requiring individuals to consider other information that they did not initially account for. Consider-the-opposite therefore reduces the propensity towards sexual coercive behavior by improving decision quality, especially among college students who are at most risk.

References

Abbey, A., Jacques-Tiura, A.J., & LeBreton, J.M. (2011). Risk factors for sexual aggression in young men: An expansion of the confluence model. *Aggressive Behavior, 37,* 450 – 464.

Abbey, A., McAuslan, P., Zawacki, T., Clinton, A.M., & Buck, P.O. (2001). Attitudinal, experiential, and situational predictors of sexual assault perpetration. *Journal of Interpersonal Violence, 16* (8), 784 – 807.

Abbey, A., Wegner, R., Woerner, J., Pegram, S.E., & Pierce, J. (2014). Review of survey and experimental research that examines the relationship between alcohol consumption and men's sexual aggression perpetration. *Trauma, Violence, and Abuse, 15* (4), 265 – 282.

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50* (2), 179-211.

Allen, J.P., Litten, R.Z., Fertig, J.B., & Babor, T. (1997). A review of research on the Alcohol Use Disorders Identification Test (AUDIT). *Alcoholism: Clinical and Experimental Research, 21* (4), 613 – 619.

Anderson, L.A., & Whitson, S.C. (2005). Sexual assault education programs: a meta-analytic examination of their effectiveness. *Psychology of Women Quarterly, 29,* 374 – 388.

Ariely, D., & Loewenstein, G. (2006). The heat of the moment: The effect of sexual arousal on sexual decision making. *Journal of Behavioral Decision Making, 19*(2), 87-98.

Arkes, H. R. (1991). Costs and benefits of judgment errors: Implications for debiasing. *Psychological Bulletin, 110*, 486-498.

Arterberry, B.J., Smith, A.E., Martens, M.P., Cadigan, J.M., & Murphy, J.G. (2014). Protective behavioral strategies, social norms, and alcohol-related outcomes. *Alcohol Research and Theory*, *22* (4), 279 – 285.

Ashby, F. G., & Townsend, J. T. (1986). Varieties of perceptual independence. *Psychological Review, 93*, 154 – 179.

Babor, T.F., Higgins-Biddle, J.C., Saunders, J.B., & Monteiro, M.G. (2001). *The Alcohol Use Disorders Identification Test: Guidelines for Use in Primary Care* (2nd Ed). Geneva, Switzerland: World Health Organization, Department of Mental Health and Substance Dependence.

Bachman, R., Paternoster, R., & Ward, S. (1992). The rationality of sexual offending: Testing a deterrence/rational choice conception of sexual assault. *Law and Society Review, 26* (2), 343 – 372.

Bargh, J. A., Raymond, P., Pryor, J. B., & Strack, F. (1995). Attractiveness of the underling: An automatic power→ sex association and its consequences for sexual harassment and aggression. *Journal of Personality and Social Psychology, 68* (5), 768 – 781.

Baron, J. (2004). Normative models of judgment and decision making. In D. J. Koehler & N. Harvey (Eds.), *Blackwell handbook of judgement and decision making* (pp. 110–132). Oxford, UK: Blackwell.

Beauregard, E., Leclerc, B., & Lussier, P. (2012). Decision making in the crime commission process: Comparing rapists, child molesters, and victim-crossover sex offenders. *Criminal Justice and Behavior 39* (10), 1275 – 1295.

Beauregard, E., Proulx, J., Rossmo, D.K., Leclerc, B., & Allaire, J.-F. (2007). Script analysis of the hunting process of serial sex offenders. *Criminal Justice and Behavior, 34* (8), 1069 – 1084.

Beauregard, E., Rebocho, M.F., & Rossmo, D.K. (2010). Target selection patterns in rape. *Journal of Investigative Psychology and Offender Profiling, 7*, 137 – 152.

Beauregard, E., Rossmo, D.K., Proulx, J. (2007). A descriptive model of the hunting process of serial sex offenders: A rational choice perspective. *Journal of Family Violence, 22*, 449 – 463.

Bechara, A., Dolan, S., Denburg, N., Hindes, A., Anderson, S.W., & Nathan, P.E. (2001). Decision-making deficits, linked to a dysfunctional ventromedial prefrontal cortex, revealed in alcohol and stimulant abusers. *Neuropsychologia, 39* (4), 376 – 389.

Becker, G.S. (1968). Crime and punishment: An economic approach. *Journal of Political Economy, 76*, 169 – 217.

Blascovich, J., Ernst, J.M., Tomaka, J., Kelsey, R.M., Salomon, K.L., & Fazio, R.H. (1993). Attitude accessibility as a moderator of autonomic reactivity during decision making. *Journal of Personality and Social Psychology, 64*, 165 – 176.

Beech, A.R., & Ward, T. (2004). The integration of etiology and risk in sexual offenders: A theoretical framework. *Aggression and Violent Behavior, 10*, 31 – 63.

Beech, A.R., Ward, T., & Fisher, D. (2006). The identification of sexual and violent motivations in men who assault women: Implications for treatment. *Journal of Interpersonal Violence, 21,* 1635 – 1653.

Bohner, G., & Dickel, N. (2011). Attitudes and attitude change. *Annual Review of Psychology, 62,* 391 – 417.

Bouffard, J. (2002). The influence of emotion on rational decision making in sexual aggression. *Journal of Criminal Justice, 30,* 121 – 134.

Bouffard, J. (2011). "In the heat of the moment": Mediating versus moderating relationships between sexual arousal and perceived sanctions. *Journal of Crime and Justice, 34* (1), 24 – 44.

Bouffard, L.A., & Bouffard, J. (2010). Understanding men's perceptions of risks and rewards in a date rape scenario. *International Journal of Offender Therapy and Comparative Criminology, 55* (4), 626 – 645.

Brecklin, L.R., & Forde, D.R. (2001). A meta-analysis of rape education programs. *Violence and Victims, 16* (3), 303 – 321.

Breitenbecher, K. H. (2000). Sexual assault on college campuses: Is an ounce of prevention enough? *Applied and Preventive Psychology, 9,* 23 – 52.

Cornish, D. B., & Clarke, R. V. (1986). Introduction. In D. B. Cornish & R. V. Clarke (Eds.), The reasoning criminal: Rational choice perspectives on offending. New York: Springer-Verlag.

Cornish, D.B., & Clarke, R.V. (2002). Analyzing organized crimes. In A.R. Piquero & S.G. Tibbetts (Eds.), *Rational Choice and Criminal Behavior: Recent Research and Future Challenges* (pp. 41 – 63). New York: Routledge.

Crane, C.A., Godleski, S.A., Przybyla, S.M., Schlauch, R.C., & Testa, M. (2015). The proximal effects of acute alcohol consumption on male-to-female aggression: A meta-analytic review of the experimental literature. *Trauma, Violence, and Abuse, 17* (5), 520 – 531.

Crowne, D. P., & Marlowe, D. (1960). A new scale of social desirability independent of psychopathology. *Journal of Consulting Psychology, 24*, 349-354.

Cyders, M.A. (2013). Impulsivity and the sexes: Measurement and structural invariance of the UPPS-P impulsive behavior scale. *Assessment 20* (1), 86 – 97.

Davis, K.C., Schraufnagel, T.J., Jacques-Tiura, A.J., Norris, J., George, W.H., & Kiekel, P,A. (2012). Childhood sexual abuse and acute alcohol effects on men's sexual aggression intentions. *Psychology of Violence*. *2*, 179–193

Eysenck, H. J., & Eysenck, S. B. G. (1991). *Manual of the Eysenck Personality Scales (EPS Adult)*. London: Hodder and Stoughton.

Farris, C., Viken, R. J., Treat, T. A., & McFall, R. M. (2006). Heterosocial perceptual organization: Application of the Choice Model to sexual coercion. *Psychological Science, 17* (10), 869-875.

Fazio, R.H., Blascovich, J., & Driscoll, D.M. (1992). On the functional value of attitudes: The influence of accessible attitudes upon the ease and quality of decision making. *Personality and Social Psychology Bulletin, 18,* 388 – 401.

Fazio, R.H., & Olsen, M.A. (2007). Attitudes: Foundations, functions, and consequences. In M.A. Hogg & J. Cooper (Eds.) *The Sage Handbook of Social Psychology: Concise Student Edition.* Thousand Oaks, CA: Sage Publications Inc.

Fischhoff, B. (1975). Hindsight is not equal to foresight: The effect of outcome knowledge on judgment under uncertainty. *Journal of Experimental Psychology: Human Perception and Performance, 1,* 288 – 299.

Fischhoff, B. (1982). Debiasing. In D. Kahneman, P. Slovic & A. Tversky (Eds.), *Judgment under uncertainty: Heuristics and biases*. New York: Cambridge University Press.

Fisher, D., & Beech, A.R. (2007). The implicit theories of rapists and sexual murderers. In T,A, Gannon, T. Ward, A.R. Beech, & D. Fisher (Eds.), *Aggressive Offenders' Cognition* (pp. 31 – 52). Sussex, UK: John Wiley & Sons.

Fiske, S. T., & Taylor, S. E. (2013). *Social cognition: From brains to culture*. Sage.

Flores, S.A. & Hartlaub, M.G. (1998). Reducing rape-myth acceptance in male college students: A meta-analysis of intervention studies. *Journal of College Student Development, 39,* 438 - 448.

Galinsky, A.D., & Mussweiler, T. (2001). First offers as anchors: The role of perspective-taking and negotiator focus. *Journal of Personality and Social Psychology, 81* (4), 657 – 669.

George, W. H., & Norris, J. (1991). Alcohol, disinhibition, sexual arousal, and deviant sexual behavior. *Alcohol Research and Health, 15*(2), 133 – 138.

Giancola, P.R., & Moss, H.B. (1998). Executive cognitive functioning in alcohol use disorders. *Recent Developments in Alcoholism, 14,* 227 – 251.

Gigerenzer, G. (2004). Fast and frugal heuristics: The tools of bounded rationality. In D. J. Koehler & N. Harvey (Eds.), *Blackwell handbook of judgement and decision making* (pp. 110–132). Oxford, UK: Blackwell.

Glasman, L.R., Albarracin, D. (2006). Forming attitudes that predict future behavior: a meta-analysis of the attitude-behavior relation. *Psychological Bulletin, 132,* 778 – 822.

Goldstein, R.Z., & Volkow, N.D. (2002). Drug addiction and its underlying neurobiological basis: Neuroimaging evidence for involvement of the frontal cortex. *American Journal of Psychiatry, 159* (10), 1642 – 1652.

Gordts, S., Uzleblo, K., Neumann, C., Van den Bussche, E., & Rossi, G. (2015). Validity of the self-report psychopathy scales (SRP-III Full and short versions) in a community sample. *Assessment 24* (3), 308 – 325.

Goudriaan, A.E., Grekin, E.R., & Sher, K.J. (2007). Decision making and binge drinking: A longitudinal study. *Alcoholism: Clinical and Experimental Research, 31* (6), 928 – 938.

Green, D. M., & Swets, J. A. (1966). *Signal detection theory and psychophysics*. New York: Wiley.

Greenwald, A.G., Poehlman, T.A., Uhlmann, E.L., & Banaji, M.R. (2009). Understanding and using the Implicit Association Test: III. Meta-analysis of predictive validity. *Journal of Personality and Social Psychology, 97,* 17 – 41.

Herzog, S.M., Hertwig, R. (2009). The wisdom of many in one mind: Improving individual judgments with dialectical bootstrapping. *Psychological Science, 20* (2), 231 – 237.

Herzog, S.M., Hertwig, R. (2013). Think twice and then: Combining or choosing in dialectical bootstrapping? *Journal of Experimental Psychology: Learning, Memory, and Cognition, 40* (1), 218 – 232.

Heusmann, L.R. (1998). The role of social information processing and cognitive schema in the acquisition and maintenance of habitual aggressive behavior. In R.G. Green & E. Donnerstein (Eds.) *Human Aggression: Theories, Research, and Implications for Social Policy* (pp. 73 – 109). New York, NY: Academic Press.

Hoch, S.J. (1985). Counterfactual reasoning and accuracy in predicting personal events. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 11,* 719 – 731.

Koss, M.P., & Gidycz, C.A. (1985). Sexual Experiences Survey: reliability and validity. *Journal of Consulting and Clinical Psychology, 53,* 422 – 423.

Keren, G., & Teigen, K.H. (2004). Yet another look at the heuristics and biases approach. In D. J. Koehler & N. Harvey (Eds.), *Blackwell handbook of judgement and decision making* (pp. 89–109). Oxford, UK: Blackwell.

Kivlahan, D. R., Marlatt, G. A., Fromme, K., Coppel, D. B., & Williams, E. (1990). Secondary prevention with college drinkers: Evaluation of an alcohol skills training program. *Journal of Consulting and Clinical Psychology, 58*(6), 805-810.

Koss, M.P., Gidycz, C.A., & Wisniewski, N. (1986). The scope of rape: Incidence and prevalence of sexual aggression and victimization in a national sample of higher education students. *Journal of Consulting and Clinical Psychology, 55,* 162 – 170.

Landoy, B.V.N., Tuliao, A.P., McChargue, D.E., & Klanecky, A.K. (2015, August). Revisiting the Confluence Model of sexual aggression: Comparisons between U.S. and the Philippines. Paper presented at the 11th Biennial Conference of the Asian Association of Social Psychology and the 52nd Annual Convention of the

Psychological Association of the Philippines Joint Convention, Cebu City, Philippines.

Langton, C.M. (2007). Rape-related cognition: Current research. In T,A, Gannon, T. Ward, A.R. Beech, & D. Fisher (Eds.), *Aggressive Offenders' Cognition* (pp. 91 – 116). Sussex, UK: John Wiley & Sons.

Larrick, R. (2004). Debiasing. In D. J. Koehler & N. Harvey (Eds.), *Blackwell handbook of judgement and decision making* (pp. 316–337). Oxford, UK: Blackwell.

Leibold, J. M., & McConnell, A.R. (2004). Women, sex, hostility, power, and suspicion: Sexually aggressive men's cognitive associations. *Journal of Experimental Social Psychology, 40,* 256 – 263.

Lerner, J. S., Li, Y., Valdesolo, P., & Kassam, K. S. (2015). Emotion and decision making. *Annual Review of Psychology, 66,* 799-823.

Lonsway, K.A. (1996). Preventing acquaintance rape through education: What do we know? *Psychology of Women Quarterly, 20,* 229 - 265.

Lord, C.G., Lepper, M.R., & Preston, E. (1984). Considering the opposite: A corrective strategy for social judgment. *Journal of Personality and Social Psychology, 47,* 1231–1243.

Lord, C.G., Ross, L., & Lepper, M.R. (1979). Biased assimilation and attitude polarization: The effects of prior theories on subsequently considered evidence. *Journal of Personality and Social Psychology, 37,* 2098 – 2109.

Losel, F., & Schmucker, M. (2005). The effectiveness of treatment for sexual offenders: A comprehensive meta-analysis. *Journal of Experimental Criminology, 1,* 117 – 146.

Macrae, C. N., Bodenhausen, G. V., Milne, A. B., & Jetten, J. (1994). Out of mind but back in sight: Stereotypes on the rebound. *Journal of Personality and Social Psychology, 67*(5), 808-817.

Malamuth, N.M, Heavey, C.L., & Linz, D. (1996). The Confluence Model of Sexual Aggression: Combining hostile masculinity and impersonal sex. *Journal of Offender Rehabilitation, 23* (3 – 4), 13 – 37.

Mann, R.E., Shingler, J. (2006). Schema-driven cognition in sexual offenders: Theory, assessment and treatment. In W.L. Marshall, Y.M. Fernandez, L.E. Marshall, and G.A. Sherran (Eds) *Sexual Offender Treatment: Controversial Issues* (pp. 173 – 186). West Sussex, England: Wiley and Sons.

McDonel, E.C., & McFall, R.M. (1991). Construct validity of two heterosocial perception skill assessment for assessing rape proclivity. *Violence and Victims, 6,* 17 – 30.

McFall, R.M. (1982). A review and reformulation of the concept of social skills. *Behavioral Assessment, 4,* 1 – 33.

McFall, R.M. (1990). The enhancement of social skills: An information-processing analysis. In W.L. Marshall & D.R. Laws (Eds.), *Handbook of sexual assault: Issues, theories, and treatment of the offender* (pp. 311 – 330). New York: Plenum Press.

Mehlkop, G., & Graeff, P. (2010). Modelling a rational choice theory of criminal action: Subjective expected utilities, norms, and interactions. *Rationality and Society, 22* (2), 189 – 222.

Morrison, S., Hardison, J., Mathew, A., & O'Neil, J. (2004). *An evidence-based review of sexual assault preventive intervention programs.* Washington, DC: National Institute of Justice (NCJ #207262).

Mouilso, E.R., Calhoun, K.S., & Rosenbloom, T.G. (2013). Impulsivity and sexual assault in college men. *Violence and Victims, 28* (3), 429 – 442.

Over, D. (2004). Rationality and the Normative/Descriptive distinction. In D. J. Koehler & N. Harvey (Eds.), *Blackwell handbook of judgement and decision making* (pp. 3–18). Oxford, UK: Blackwell.

Planty, M., Langton, L., Krebs, C., Berzofsky, M., Smiley-McDonald, H. (2016). Female victims of sexual violence, 1994 – 2010. Special Report: Bureau of Justice Statistics, Office of Justice Programs, U.S. Department of Justice. https://www.bjs.gov/content/pub/pdf/fvsv9410.pdf

Neafsey, E.J., & Collins, M.A. (2011). Moderate alcohol consumption and cognitive risk. *Neuropsychiatric Disease and Treatment, 7,* 465 – 484.

von Neumann, J., & Morgenstern, O. (1947). *Theory of Games and Economic Behavior* (2nd ed.). Princeton: Princeton University Press.

Neville, H. A., & Heppner, M. J. (2002). Prevention and treatment of violence against women: An examination of sexual assault. In C. L. Juntunen & D. Atkinson (Eds.), *Counseling across the lifespan: Prevention and treatment* (pp. 261–277). Thousand Oaks, CA: Sage.

Parsons, O.A., Nixon, S.J. (1998). Cognitive functioning in sober social drinkers: A review of the research since 1986. *Journal of Studies on Alcohol, 59* (2), 180 – 190.

Payne, J.W. (1973). Alternative approaches to decision making under risk. *Psychological Bulletin, 80,* 439 – 453.

Payne, J. W., & Bettman, J. R. (2004). Walking with the scarecrow: The information-processing approach to decision research. In D. J. Koehler & N. Harvey (Eds.), *Blackwell handbook of judgement and decision making* (pp. 110–132). Oxford, UK: Blackwell.

Polaschek, D.L.L., & Gannon, T.A. (2004). The implicit theories of rapists: What convicted offenders tell us. *Sexual Abuse: A Journal of Research and Treatment, 16* (4), 299 – 314.

Reinert, D.F., & Allen, J.P. (2007). The Alcohol Use Disorders Identification Test: An update of research findings. *Alcoholism: Clinical and Experimental Research, 31* (2), 185 – 199.

Ross, L., Lepper, M.R., & Hubbard, M. (1975). Perseverance in self-perception and social perception: Biased attributional processes in the debriefing paradigm. *Journal of Personality and Social Psychology, 32*, 880 – 892.

Rudman, L. A., & Mescher, K. (2012). Of animals and objects: Men's implicit dehumanization of women and likelihood of sexual aggression. *Personality and Social Psychology Bulletin*, *38*(6), 734-746.

Rydell, R.J., & McConnell, A.R. (2006). Understanding implicit and explicit attitude change: A systems of reasoning analysis. *Journal of Personality and Social Psychology, 91* (6), 995 – 1008.

Saunders, J.B., Aasland, O.G., Babor, T.F., De La Fuente, J.R., & Grant, M. (1993). Development of the Alcohol UseDisorders Identification Test (AUDIT): WHO Collaborative project on early detection of persons with harmful alcohol consumption – II. *Addiction, 88,* 791 – 804.

Savage, L. J. (1954). *The Foundations of Statistics*. New York: Wiley

Smith, P.H., Thronton, G., DeVellis, R., Earp, E., & Coker A. (2002). Prevalence and distinctiveness of battering, physical assault and sexual assault in a population-based sample. *Violence Against Women, 8* (10), 1209-1232.

Snyder, M., & Swann, W.B. (1978). Behavioral confirmation in social interaction: From social perception to social reality. *Journal of Experimental Social Psychology, 14,* 148 – 162.

Soll, J. B., Milkman, K. L., & Payne, J. W. (in press). A user's guide to debiasing. In G. Wu & G. Keren (Eds.), *Handbook of judgment and decision making*. New York: Wiley.

State v. Rossbach, 650 N.W.2d 242 (Neb. 2002).

Stöber, J. (2001). The Social Desirability Scale-17 (SDS-17): Convergent validity, discriminant validity, and relationship with age. *European Journal of Psychological Assessment, 17*, 222-232.

Testa, M., VanZile-Tansen, C., Livingston, J., & Koss, M.P. (2004). Assessing women's experiences of sexual aggression using the Sexual Experiences Survey: Evidence for validity and implications for research. *Psychology of Women Quarterly, 28,* 256 – 265.

Treat, T.A., McFall, R.M., Viken, R.J., & Kruschke, J.K. (2001). Cognitive science methods to assess the role of social information processing in sexually coercive behavior. *Psychological Assessment, 13* (4), 549 – 565.

Tuliao, A.P., Klanecky, A., & McChargue, D.E. (2015). Information acquisition in sexual aggression. *Unpublished Manuscript.*

Tuliao, A.P., Landoy, B.V.N., Klanecky, A., & McChargue, D.E. (August 2015). Decision making in sexual aggression. Paper presented at the 11th Biennial Conference of the Asian Association of Social Psychology and 52nd Annual Convention of the Psychological Association of the Philippines Joint Convention, Cebu City, Philippines.

Tuliao, A.P., Landoy, B.V.N., & McChargue, D.E. (in press). Factor structure and invariance test of the Alcohol Use Disorder Identification Test (AUDIT): Comparison and further validation in a U.S. and Philippines college sample. *Journal of Ethnicity in Substance Abuse.*

Tuliao, A.P., & McChargue, D.E. (2014). Problematic alcohol use and sexual assault among male college students: The moderating and mediating roles of alcohol outcome expectancies. *American Journal on Addictions, 23* (4), 321 – 328

Ward, T. (2000). Sexual offenders' cognitive distortions as implicit theories. *Aggression and Violent Behavior, 5,* 491 – 507.

Ward, T. & Keenan, T. (1999). Child molesters' implicit theories. *Journal of Interpersonal Violence, 14,* 821 – 838.

Wilson, T.D., Houston, C., Etling, K.M., & Brekke, N. (1996). A new look at anchoring effects: Basic anchoring and its antecedents. *Journal of Experimental Psychology: General, 4*, 387 – 402.

Yeater, E.A., & O'Donohue, W. (1999). Sexual assault prevention programs: Current issues, future directions, and the potential efficacy of interventions with women. *Clinical Psychology Review, 19* (7), 739 – 771.

Zurbriggen, E.L. (2000). Social motives and cognitive power-sex associations: Predictors of aggressive sexual behavior. *Journal of Personality and Social Psychology, 78* (3), 559 – 581.

APPENDIX A: DATE-RAPE VIGNETTE

Directions: The following is a chronological description of a social experience or scenario that is not uncommon for college students. For the purposes of this exercise, imagine you are the person of your gender in the scenario. As the scenario develops, you will be asked to indicate the probability of the occurrence of some events. You will also be asked when you would leave the situation.

James and Ashley are exclusively dating, and have gone out six times in the past month. After a long, stressful week, James invited Ashley and some of his friends to go to a club near her place on Friday night. Before picking up Ashley, James was invited by some of his friends to go drinking in a bar near Ashley's apartment. After leaving his friends and feeling buzzed, James then decided to pick up Ashley and go to a club to go dancing.

James and Ashley talked for quite some time and flirted with each other throughout the night. When James and Ashley danced, they also danced close to each other.

While Ashley and James were enjoying each other's company, they lost track of how much they were drinking, with Ashley drinking around 6 bottles of beer, and James drinking approximately 10 bottles of beer.

Around 1 A.M., Ashley was drunk and she decided to go home, but their friends decided to stay and continue partying. Because Ashley's friends were worried about her safety, and they didn't want her to walk home alone, they asked James to walk her home. James, thinking that Ashley's apartment was not too far from the club, and walking her home would give them more time to talk, agreed to take her home. Walking home, James and Ashley talked, joked with each other, laughed, and they held hands.

Upon reaching the apartment, in order to be polite, Ashley invited James to her home for some coffee. This is what happened inside the apartment.

[PRESS → TO CONTINUE]

Ashley: Please excuse my apartment, it's a real mess right now.

James: No, that's alright. I don't mind.

Ashley: Would you like to sit down on the couch?

James: Sure!

(James and Ashley sat on the couch).

[PRESS → TO CONTINUE]

[INSERT VIGNETTE QUESTIONS FOR TREATMENT OR CONTROL GROUP]

James: You're sitting too far away from me, would it be okay if I move closer to you.

Ashley: Sure.

(Moves closer)

James: Now, this is much better.

[PRESS → TO CONTINUE]

[INSERT VIGNETTE QUESTIONS FOR TREATMENT OR CONTROL GROUP]

James: So, you have Saturday classes?

Ashley: Yeah, but I'm way too drunk right now, I'm pretty sure I'll have a hangover tomorrow. I might skip classes tomorrow. Hey, do you want some coffee?

James: No, thanks. But can I hang out here a bit? I need to sober up before I walk home.

Ashley: Sure, no problem. I need to sober up too before I go to bed.

[PRESS → TO CONTINUE]

[INSERT VIGNETTE QUESTIONS FOR TREATMENT OR CONTROL GROUP]

James: I don't know about you, but I really enjoyed hanging out in that club. What do you think?

Ashley: Yeah, I thought it was okay, but I know of another one that's better. I'll take you there the next time. Hey, I hope I didn't embarrass myself, I'm only like this when I'm drunk. Well . . . you've seen me like this when we went to bars before, right?

James: That's true, but it's still entertaining. Besides, the best part of that was being with you.

Ashley: Thanks. I enjoy being with you too.

(James leans over and they start kissing)

[PRESS → TO CONTINUE]

[INSERT VIGNETTE QUESTIONS FOR TREATMENT OR CONTROL GROUP]

Ashley: I'm really having a good time with you James.

(They lean over and start kissing)

Ashley: Did anybody ever tell you that you're a great kisser.

James: You're so beautiful. When I'm close to you like this, it drives me wild!

Ashley: Thanks. (Ashley says shyly and kisses James again.)

[PRESS → TO CONTINUE]

[INSERT VIGNETTE QUESTIONS FOR TREATMENT OR CONTROL GROUP]

(As James starts kissing her, he starts touching her breasts)

Ashley: (Giggles) Oh James, don't do that.

James: You really turn me on.

(James starts kissing her and fondling her breasts again)

[PRESS → TO CONTINUE]

[INSERT VIGNETTE QUESTIONS FOR TREATMENT OR CONTROL GROUP]

Ashley: Please James, I like it when you touch me, but not right now. I know we've been going out for a while now, but I don't think we should go any further.

James: Okay, I'm sorry, but you know when I get close to you, I just lose control. Plus, I'm so drunk. It won't happen again.

Ashley: It's alright. (Ashley moves closer and starts to kiss him)

(Starts Kissing)

[PRESS → TO CONTINUE]

[INSERT VIGNETTE QUESTIONS FOR TREATMENT OR CONTROL GROUP]

Ashley: James! Haven't you been listening to me?! I just told you I don't want you touching me, and now you go touch my butt! I know we've known each other for a while now, but let's get to know each other more before we get physical. I'm too drunk for it too, and I want it to mean something.

James: I understand. I want to get to know you better as well. But when I'm drunk I just can't stop myself because you're so beautiful.

Ashley: I'm glad you want to get to know me better because I like you.

James: Yes! Of course I care what's important to you.

Ashley: Thank you.

(Ashley leans over and starts kissing him)

[PRESS → TO CONTINUE]

[INSERT VIGNETTE QUESTIONS FOR TREATMENT OR CONTROL GROUP]

(After 2 minutes, James starts fondling her again)

Ashley: James, I'm not ready for this. And I don't think doing it while we are drunk is a good idea.

James: Don't you like me? Or are you just teasing me?

Ashley: No I like you, but I'm just not comfortable.

(James kisses her)

[PRESS → TO CONTINUE]

James: Can't I just touch you a little while. It feels good to both of us. Plus, we're drunk. As long as I promise to stop, is it okay?

Ashley: I can't believe I'm saying this . . . I usually would not let you . . . but I like you . . . I'm drunk and it does feel good. So as long as you promise to stop . . .

James: Okay.

(James kisses and begins fondling her)

[PRESS → TO CONTINUE]

[INSERT VIGNETTE QUESTIONS FOR TREATMENT OR CONTROL GROUP]

James: I feel closer to you than I've felt closer to anybody.

Ashley: I like you a lot too.

(They continue kissing and fondling for a couple of minutes).

[PRESS → TO CONTINUE]

[INSERT VIGNETTE QUESTIONS FOR TREATMENT OR CONTROL GROUP]

(After kissing and fondling for a few more minutes, James reaches underneath her skirt and starts touching her private parts)

Ashley: No James! Get your hands out of my skirt!

James: I like you so much that I need to be with you! If you really like me, and you want us to continue seeing each other, why don't we take our relationship to the next level? Do you really want to lose me?

Ashley: I don't want that to happen, but . . .

(James starts to gently remove her panties from underneath her skirt. Ashley stops him).

[PRESS → TO CONTINUE]

[INSERT VIGNETTE QUESTIONS FOR TREATMENT OR CONTROL GROUP]

Ashley: Please don't James! I don't think you understand, but I don't want sex right now!

James: Well you wouldn't have allowed me to go this far if you didn't want to have sex. But if you feel strongly about it, stay away from me!

(James turns away from her)

[PRESS → TO CONTINUE]

[INSERT VIGNETTE QUESTIONS FOR TREATMENT OR CONTROL GROUP]

James: You know Ashley, you're nothing but a big tease! I don't know if I can be with you!

Ashley: Wait, James. Don't be upset with me. I know you don't want to wait, but I really want to be with you. I just think we should slow down. We shouldn't be doing this when we're both drunk. Hold me and kiss me like this.

[PRESS → TO CONTINUE]

[INSERT VIGNETTE QUESTIONS FOR TREATMENT OR CONTROL GROUP]

(Kissing continues. After a few minutes, James starts to pull off her panties)

James: I need to be with you, and you know you want it!

Ashley: No James! Get away from me!

[PRESS → TO CONTINUE]

[INSERT VIGNETTE QUESTIONS FOR TREATMENT OR CONTROL GROUP]

James: You better stop resisting if you know what's good for you! I need you right now and I don't want to hurt you.

Ashley: Just stay away from me! Don't you dare touch me, James!

James: You're nothing but a big tease that likes to turn on guys just to mess with them. I'm not going to let you do that to me. One way or the other, you are going to give it to me!

Ashley: James, stop!

[PRESS → TO CONTINUE]

[INSERT VIGNETTE QUESTIONS FOR TREATMENT OR CONTROL GROUP]

James: These panties are coming off right now, and you are going to have sex with me! Don't fight it Ashley!

Ashley: James! Get off of me!

James: Yeah, that's more I like it.

(Sexual intercourse ensues)

[PRESS → TO CONTINUE]

[INSERT VIGNETTE QUESTIONS FOR TREATMENT OR CONTROL GROUP]

Ashley: James, how could you! I can't believe you did that! You raped me! You raped me, and I never want to see you again!

James: I didn't rape you! You wanted it, and you know it! You just changed your mind, to mess with me!

[PRESS → TO CONTINUE]

[INSERT VIGNETTE QUESTIONS FOR TREATMENT OR CONTROL GROUP]
[INSERT ADDITIONAL QUESTIONS FOR THE VIGNETTE STUDY]

APPENDIX B: MEASUREMENTS

A. Sexual Experiences Survey – Males

General Instructions: Please answer the following questions only ***IF YOU ARE MALE***.

a. Have you ever had sexual intercourse? YES _____ NO _____

Please indicate the frequency with which these things happened to you.

	Never		Occasionally		Often
b. How often do you misinterpret the level of sexual intimacy a woman desired?	1	2	3	4	5
c. How many times has a woman been friendly to you, only for you to discover that you had misperceived her friendliness as a sexual come on – she was trying to be nice but you assumed she was sexually attracted to you?	1	2	3	4	5
1. Have you ever fondled, kissed, or touched a woman sexually when she didn't want to because you overwhelmed her with continual arguments and pressure?	1	2	3	4	5

	Yes	No
1. Have you ever fondled, kissed, or touched a woman sexually when she didn't want to because you overwhelmed her with continual arguments and pressure?	1	0
2. Have you ever fondled, kissed, or touched a woman sexually when she didn't want to because you used your position of authority (being a boss, teacher, supervisor, counselor) to make her?	1	0
3. Have you ever been fondled, kissed, or touched a woman sexually when she didn't want to because you threatened her or used some degree of physical force (twisting her arm, holding you down, etc.) to make her?	1	0
4. Have you had sexual intercourse with a woman when she didn't want to because you overwhelmed her with continual arguments and pressure?	1	0
5. Have you had sexual intercourse with a woman when she didn't want to because you used your position of authority (being a boss, teacher, supervisor, counselor) to make her?	1	0
6. Have you attempted to insert your penis (but intercourse did not occur) when she didn't want to by threatening her or using some degree of force (twisting your arm, holding you down, etc.)?	1	0
7. Have you ever attempted to insert your penis (but intercourse did not occur) when she didn't want to by getting her intoxicated on alcohol or drugs without her knowledge or consent?	1	0

8. Have you ever had sexual intercourse with a woman when she didn't want to because you made her intoxicated by giving her alcohol or drugs without her knowledge or consent?	1	0
9. Have you been in a situation in which you had sexual intercourse with a woman that was incapacitated due to alcohol or drugs (that is, passed out or unaware of what was happening) and was not able to prevent unwanted sexual intercourse from taking place?	1	0
10. Have you had sexual intercourse with a woman when she didn't want to because you threatened or used some degree of physical force (twisting your arm, holding you down, etc.) to make her?	1	0
11. Have you had sex acts (anal or oral intercourse or penetration by objects other than the penis) with a woman when she didn't want to because you threatened or used some degree of physical force (twisting your arm, holding you down, etc.) to make her?	1	0
12. Have you ever raped anyone?	1	0

B. Alcohol Use Disorders Identification Test (AUDIT)

Instructions: For the following set of questions, please mark the answer that is correct for you during the past year.

1. How often do you have a drink containing alcohol?

_____	_____	_____	_____	_____
Never	Monthly or less	2-4 times a month	2-3 times a week	4 or more times a week

2. How many drinks containing alcohol do you have on a typical day when you drink?

_____	_____	_____	_____	_____
1-2	3-4	5-6	7-9	10 or More

3. If male, how often do you have six or more standard drinks on one occasion? If female, how often do you have four or more standard drinks on one occasion? By standard drinks, refer to the picture:

_____	_____	_____	_____	_____
Never	Less than monthly	Monthly	Weekly	Daily or almost daily

4. How often during the last year have you found that you were not able to stop drinking once you had started?

_____	_____	_____	_____	_____
Never	Less than monthly	Monthly	Weekly	Daily or almost daily

5. How often during the last year have you failed to do what normally expected from you because of drinking?

_____	_____	_____	_____	_____
Never	Less than monthly	Monthly	Weekly	Daily or almost daily

6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?

_____	_____	_____	_____	_____
Never	Less than monthly	Monthly	Weekly	Daily or almost daily

7. How often during the last year have you had a feeling of guilt or remorse after drinking?

_____	_____	_____	_____	_____
Never	Less than monthly	Monthly	Weekly	Daily or almost daily

8. How often during the last year have you been unable to remember what happened the night before because you had been drinking?

_____	_____	_____	_____	_____
Never	Less than monthly	Monthly	Weekly	Daily or almost daily

9. Have you or someone else been injured as a result of your drinking?

_____	_____	_____
No	Yes, but not in the last year	Yes, during the last year

10. Has a relative or friend, or a doctor or other health worker been concerned about your drinking or suggested you cut down?

_____	_____	_____
No	Yes, but not in the last year	Yes, during the last year

C. Attitude Towards Male Sexual Dating Violence Scale (ATSDV)

Instructions: Please rate your agreement on the following statements.

	Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
1. When a guy pays on a date, it is O.K. for him to pressure his date for sex.	1	2	3	4	5
2. Guys do not own their girlfriends' bodies.	1	2	3	4	5
3. When guys get really sexually excited, they cannot stop themselves from having sex.	1	2	3	4	5
4. Guys should never get girls drunk to get them to have sex.	1	2	3	4	5
5. A guy should not touch his girlfriend unless she wants to be touched.	1	2	3	4	5
6. It is alright for a guy to force a girl to kiss him when on a date.	1	2	3	4	5
7. Often guys have to be rough with girls to turn them on.	1	2	3	4	5
8. To prove her love, it is important for a girl to have sex with her boyfriend.	1	2	3	4	5
9. A girl who goes into a guy's bedroom is agreeing to sex.	1	2	3	4	5
10. It is no big deal to pressure a girl into having sex.	1	2	3	4	5
11. It is alright to pressure a girl to have sex if she has had sex in the past.	1	2	3	4	5
12. After a couple is going steady, the guy should not force his girlfriend to have sex.	1	2	3	4	5

D. Social Desirability Scale - 17

Instruction

Below you will find a list of statements. Please read each statement carefully and decide if that statement describes you or not. If it describes you, check "true"; if not, check "false".

	TRUE	FALSE
1. I sometimes litter.		
2. I always admit my mistakes openly and face the potential negative consequences		
3. In traffic I am always polite and considerate of others.		

4. I have tried illegal drugs (for example, marijuana, cocaine, etc.).		
5. I always accept others' opinions, even when they don't agree with my own.		
6. I take out my bad moods on others now and then.		
7. There has been an occasion when I took advantage of someone else.		
8. In conversations I always listen attentively and let others finish their sentences.		
9. I never hesitate to help someone in case of emergency.		
10. When I have made a promise, I keep it--no ifs, ands or buts.		
11. I occasionally speak badly of others behind their back.		
12. I would never live off other people.		
13. I always stay friendly and courteous with other people, even when I am stressed out.		
14. During arguments I always stay objective and matter-of-fact.		
15. There has been at least one occasion when I failed to return an item that I borrowed.		
16. I always eat a healthy diet.		
17. Sometimes I only help because I expect something in return.		

E. UPPS - P

Below are a number of statements that describe ways in which people act and think. For each statement, please indicate how much you agree or disagree with the statement. If you Agree Strongly circle 1, if you Agree Somewhat circle 2, if you Disagree somewhat circle 3, and if you Disagree Strongly circle 4. Be sure to indicate your agreement or disagreement for every statement below. Also, there are questions on the following pages.

	Agree Strongly	Agree Some	Disagree Some	Disagree Strongly
1. I have a reserved and cautious attitude toward life.	1	2	3	4
2. I have trouble controlling my impulses.				
3. I generally seek new and exciting experiences and sensations.				
4. I generally like to see things through to the end.				
5. When I am very happy, I can't seem to stop myself from doing things that can have bad consequences.				
6. My thinking is usually careful and purposeful.				

7. I have trouble resisting my cravings (for food, cigarettes, etc.).				
8. I'll try anything once.				
9. I tend to give up easily.				
10. When I am in great mood, I tend to get into situations that could cause me problems.				
11. I am not one of those people who blurt out things without thinking.				
12. I often get involved in things I later wish I could get out of.				
13. I like sports and games in which you have to choose your next move very quickly.				
14. Unfinished tasks really bother me.				
15. When I am very happy, I tend to do things that may cause problems in my life.				
16. I like to stop and think things over before I do them.				
17. When I feel bad, I will often do things I later regret in order to make myself feel better now.				
18. I would enjoy water skiing.				
19. Once I get going on something I hate to stop.				
20. I tend to lose control when I am in a great mood.				
21. I don't like to start a project until I know exactly how to proceed.				
22. Sometimes when I feel bad, I can't seem to stop what I am doing even though it is making me feel worse.				
23. I quite enjoy taking risks.				
24. I concentrate easily.				
25. When I am really ecstatic, I tend to get out of control.				
26. I would enjoy parachute jumping.				
27. I finish what I start.				
28. I tend to value and follow a rational, "sensible" approach to things.				
29. When I am upset I often act without thinking.				
30. Others would say I make bad choices when I am extremely happy about something.				
31. I welcome new and exciting experiences and sensations, even if they are a little frightening and unconventional.				
32. I am able to pace myself so as to get things done on time.				
33. I usually make up my mind through careful reasoning.				
34. When I feel rejected, I will often say things that I later regret.				
35. Others are shocked or worried about the				

things I do when I am feeling very excited.				
36. I would like to learn to fly an airplane.				
37. I am a person who always gets the job done.				
38. I am a cautious person.				
39. It is hard for me to resist acting on my feelings.				
40. When I get really happy about something, I tend to do things that can have bad consequences.				
41. I sometimes like doing things that are a bit frightening.				
42. I almost always finish projects that I start.				
43. Before I get into a new situation I like to find out what to expect from it.				
44. I often make matters worse because I act without thinking when I am upset.				
45. When overjoyed, I feel like I can't stop myself from going overboard.				
46. I would enjoy the sensation of skiing very fast down a high mountain slope.				
47. Sometimes there are so many little things to be done that I just ignore them all.				
48. I usually think carefully before doing anything.				
49. When I am really excited, I tend not to think of the consequences of my actions.				
50. In the heat of an argument, I will often say things that I later regret.				
51. I would like to go scuba diving.				
52. I tend to act without thinking when I am really excited.				
53. I always keep my feelings under control.				
54. When I am really happy, I often find myself in situations that I normally wouldn't be comfortable with.				
55. Before making up my mind, I consider all the advantages and disadvantages.				
56. I would enjoy fast driving.				
57. When I am very happy, I feel like it is ok to give in to cravings or overindulge.				
58. Sometimes I do impulsive things that I later regret.				
59. I am surprised at the things I do while in a great mood.				

F. Self-Report Psychopathy Scale (SRP-III)

Please rate the degree to which you agree with the following statements about you. You can be honest because your name will be detached from the answers as soon as they are submitted.

1	2	3	4	5
Disagree Strongly	Disagree	Neutral	Agree	Agree Strongly

1. It bothers me to hurt other peoples' feelings.
2. I am careful about what I say to people.
3. I am often rude to people.
4. I get in trouble for the same things time after time.
5. I sometimes enjoy hurting the people who care for me.
6. On average, my friends would probably say I am a kind person.
7. I'm not afraid to step on others to get what I want.
8. I'm a soft-hearted person.
9. I'm a rebellious person.
10. I like to change jobs often.
11. I've often done something dangerous just for the thrill of it.
12. I enjoy taking risks.
13. I'd be good at a dangerous job because I make fast decisions.
14. I hate high speed driving.
15. I enjoy drinking and doing wild things.
16. Rules are made to be broken.
17. I think I could "beat" a lie detector.
18. It's amusing to see other people get tricked.
19. I don't think of myself as tricky or sly.
20. I would get a "kick" out of scamming someone.
21. It's fun to see how far you can push people before they get upset.
22. I find it easy to manipulate people.
23. Conning people makes me nervous.
24. People can usually tell if I am lying.
25. I stole money from my parents.
26. I avoided paying for things, such as movies, bus or train rides and food.
27. I have cheated on school tests.
28. I have been arrested before.
29. I handed in a school essay that I copied at least partly from someone else.
30. I have been involved in delinquent gang activity.
31. I have broken into a building or vehicle in order to steal something or to vandalize.
32. I yelled at a teacher.
33. I have tried a drug that could have been dangerous.
34. I have never shoplifted from a store.

APPENDIX C: INFORMED CONSENT LETTER

University of Nebraska Lincoln

DEPARTMENT OF PSYCHOLOGY

IRB #
Date Approved:
Valid Until:

INFORMED CONSENT FOR RESEARCH PARTICIPATION

Cultural Risk and Vulnerability (CRAVE) Study

The University of Nebraska – Lincoln, in collaboration with Creighton University, University of the Philippines – Visayas, and Ateneo De Manila University, is conducting a research that aims to examine cross cultural differences (U.S. versus Philippines) among college students' decision making processes and behaviors regarding intimate relationships, sexual attitudes and behaviors, and alcohol and substance use. This study has two parts. If you agree to participate in this study, you will be asked first to complete an online survey which typically takes around 70 to 100 minutes. After one month, we will send you a link through email to a follow-up online survey which typically takes around 30 minutes. Questions in both online surveys include (a) demographic information such as age, gender, marital status, and personal history of mental illnesses and drug use, (b) use of and attitudes towards alcohol and other psychoactive substances, (c) sexual behaviors and attitude towards sex, dating, and intimate relationships, (d) adverse life events you may have had before the age of 18, and (e) recent incidents of wanted and unwanted sexual experiences (including forced and non-forced sexual contacts). Additionally, you will be asked to read a short scenario and answer questions about your reactions to that scenario. The study should be completed individually, without the influence of peers, and in a private setting. You don't have to complete the survey in one sitting. If you are using the same computer and the same internet connection, you will be logged on where you left off.

All information you provide in the survey will be kept confidential and all identifying information will be purged from the final database. In other words, your name and other contact information will be separated from the information that you will provide us. Your name and contact information will be kept in a separate database, and will only be used to award course credits. All other information you provide us will be kept anonymous. All data will be stored on a password protected computer in a locked office that may only be accessed by researchers. Data may be kept for ten years after the study is complete and will then be destroyed. All collected information will be grouped with all other participants and averages of group responses will be disseminated in a dissertation, in publications to professional journals, presentations at professional meetings, or in grant preparations. Furthermore, your name will not be used in any report or in any publication we make about this study.

There is no direct benefit in participating in this study. However, allowing us to use your information for research will contribute in our understanding of college students'

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drinking and sexual behaviors that may lead to the improvement of the alcohol intervention/prevention and sexual assault prevention programs for college students.

There are no unforeseen risks associated with participation in this study. However, because of the sensitive nature of some of the questions, if you are experiencing depressive symptoms at the time of the study, you may find that your depression is more salient. Also, questions about childhood trauma and recent sexual experiences may cause discomfort. If this study evokes negative feelings and depressive symptoms greater than you expected, we have provided contact information to the following institutions for counseling or psychological treatment:

University of Nebraska – Lincoln
UNL Psychological Consultation Center
Tel no.: (402) 472-2351
Psychological treatment available on a sliding fee scale

Ateneo De Manila University
Loyola Schools, Office of Guidance and Counseling
Tel no.: 426-6001, ext. 5031 / 5032
Email: ls-guidance@admu.edu.ph

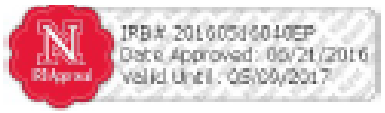
University of the Philippines – Visayas
Office of Student Affairs
Tel no.: 513-7019

Creighton University
Creighton University Counseling Services
Tel no.: (402) 280-2735
Located at Harper 1034; Free for students
For 24 hour services in the Omaha area: (402) 717-4673

For UNL students, you will receive four (4) research credits for participating in the study. For Philippine Universities, course credits will be announced by your instructor. However, bonus points received will not exceed the total amount allocated for research credits. For Creighton University students, you will receive one (1) research credits for participating.

For questions about the research, feel free to contact the Principal Investigator, Dennis E. McChargue, Ph.D. at (402) 472-3197 or dmcchargue2@unl.edu. If you have any questions about your rights as a research participant that have not been answered by the investigator, or to report any concerns about the study, you may contact the UNL Institutional Review Board, telephone (402) 472-6965 or at irb@unl.edu.

For Creighton University students, feel free to contact Alicia Klanecky, Ph.D. at (402) 280-2146 or aliciaklanecky@creighton.edu if you have questions. If you have any questions about research subjects' rights that have not been answered by the



investigators, you may contact Creighton University's Institutional Review Board at (402) 280-2126.
For Ateneo De Manila University students, please contact Nico Canoy, PhD at ncanoy@ateneo.edu for questions. For University of the Philippines students, please get in touch with Bernice Landoy, MA at nice_landoy@yahoo.com.

For all technical problems, please contact cravestudy2016@gmail.com.

You are free to decide not to participate in this study or to withdraw at any time without affecting your relationship with the researchers or with your university. You also have the right not to answer any questions that you do not feel comfortable answering. Finally, your decision to withdraw or refuse to answer any questions will not result in any loss of benefits to which you are otherwise entitled.

You are voluntarily making a decision whether or not to participate to allow your information to be used for research. By clicking on the button below, you certify that you have decided to participate having read and understood the information presented.
You may print a copy of this consent form to keep.

[ ] I have read and agree with the above conditions and volunteer to participate.
[ ] I do not agree with the above conditions and will not participate.