

SWARTOUT, KEVIN MICHAEL, Ph.D. *The Company They Keep: How Social Networks Influence Male Sexual Aggression*. (2011)
Directed by Dr. Jacquelyn W. White. 69 pp.

The goal of the present study was to add to the existing knowledge concerning predictors of sexually coercive behaviors. After replicating an existing model that details individual-level factors predicting sexual coercion, an alternative model incorporating peer-level factors was built and tested against the existing model. Findings suggest that perceived peer attitudes concerning violence against women significantly influence corresponding individual attitudes. Furthermore, peer group density was found to significantly moderate the relationship between perceived peer attitudes toward violence against women and hostile individual attitudes toward women, in that highly dense peer groups had the strongest positive influence on individual members. The main effect of peer network density on hostile individual attitudes, however, was significantly negative—suggesting that individuals with highly dense peer groups tend to have less hostile attitudes toward women. Taken together, the present findings suggest that perceived peer attitudes and the structure of peer networks have a notable bearing on individual attitudes of violence and hostility toward women, factors long known to predict violent physical and sexual behaviors targeted at women. Implications are discussed in terms of future avenues for research and application to peer-based intervention strategies.

THE COMPANY THEY KEEP: HOW SOCIAL
NETWORKS INFLUENCE MALE
SEXUAL AGGRESSION

by

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A Dissertation Submitted to
the Faculty of The Graduate School at
The University of North Carolina at Greensboro
in Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy

Greensboro
2011

Approved by

Committee Chair

To my wife, Ashlyn, and all of my friends who encouraged me along the way:

I would not have achieved this without you.

APPROVAL PAGE

This dissertation has been approved by the following committee of the Faculty of
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ACKNOWLEDGMENTS

I would like to thank my committee chair, Dr. Jacqueline White, for her assistance, advice, and helpful critiques throughout this process. I would also like to thank her for her kindness, support, encouragement, and outstanding mentorship throughout my graduate career.

I would like to thank my committee members, Dr. Janet Boseovski, Dr. Rosmery Nelson-Gray, Dr. John Seta, and Dr. Paul Silvia, for their insightful input and helpful critiques of this project.

And again, I would like to thank my wife, Ashlyn Swartout, for her continued intellectual and emotional support throughout this process.

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CHAPTER I

INTRODUCTION

Sexual coercion is a social phenomenon that most people would rather ignore, but one would be hard-pressed to find anyone who has not been either directly or indirectly affected by this unfortunate reality. Despite the strong efforts of sexual aggression¹ researchers, they have been relatively unsuccessful in identifying a particular *type* of man who could or would perpetrate these acts. Almost exclusive reliance on intrapersonal variables may not have been the ideal strategy for the study of sexual aggression perpetration—in hindsight, there does not seem to be a particular *type* of man who commits acts of sexual aggression. Although these acts are most commonly perpetrated by an individual in an isolated context, interpersonal variables may help researchers pave the road toward a better understanding of sexual aggression. Polk (1981) may have best stated the impetus for the current project: “whether or not a male engages in sexually aggressive behavior may, in part, be due to the values and expectations of his male friends” (Polk et al. 1981, p. 388 as cited in Ageton, 1983). The current study tests the assumption that perceived peer attitudes influence the sexual behavior of individual peer group members. More specifically, increases in male peer groups’ acceptance of sexual aggression were expected to evoke higher levels of sexually aggressive attitudes and behaviors among individual group members, especially in densely-knit peer groups.

¹ From this point forward “sexual aggression” and “sexual coercion” will be used interchangeably.

Sexual coercion is commonly defined as compelling sexual activity where consent is not obtained (CDC, 2009). A nationally-representative survey of sexual coercion and victimization found that over 50% of college-aged women reported experiencing some form of sexual coercion (Koss, Gidycz, & Wisniewski, 1987), and 25% of college-aged men reported engaging in at least one instance of sexually aggressive behavior after the age of 14 (e.g., attempted or completed sexual contact without full female consent—ranging from unwanted contact to rape); almost 8% of the male sample reported engaging in behaviors that met legal definitions for rape or attempted rape. This pattern of sexually coercive behavior has been supported by the work of numerous research teams (e.g., White & Smith, 2004).

Relatively little research has explored the association between peer influence and individual sexually aggressive behavior; the research that has been conducted, however, indicates a strong association. Significant relations have been found between levels of peer and individual sexual aggression (Alder, 1985; Gwartney-Gibbs, Stockard, & Bohmer, 1989). Although these findings are now 20 to 25 years old, researchers continue to puzzle over the nature of this relationship. Schafer and Nelson (1993) found that college men living in all-male dormitories were more likely than other men to endorse rape myths. Koss and Dinero (1989) found that members of peer groups that objectify women tend to engage in more severe levels of sexual aggression compared with men who do not associate with this type of peer group. Research conducted by Schwartz and DeKeseredy (1997, 2000) found that male sexually aggressive behavior is predicted by peer support of aggression within intimate relationships. After interviewing 341 male

college students, Kanin (1967) found that sexually aggressive men—compared with non-sexually aggressive men—reported experiencing more peer pressure to engage in premarital sex. Shotland (1992) took a more cognitive stance with the assertion that male peer groups “reinforce [sexually aggressive] beliefs and help keep them accessible so that the rapist is cognitively ready to act” (p. 139). These findings, taken together, indicate a strong and robust association between men’s sexually aggressive behaviors and their peers’ attitudes toward women and sex. To date, however, peer attitudes have not been integrated into models of sexual aggression.

Aside from peer influence, several other characteristics have been found predictive of sexual aggression. Much research and theory on the topic has focused on factors such as childhood sexual abuse (Groth, 1979), general delinquency (Ageton, 1983), sexual promiscuity (Kanin, 1967; Malamuth, Sockloskie, Koss, & Tanaka, 1991), attitudes supporting male-to-female violence (Burt, 1980), hostile masculine attitudes (Malamuth, Sockloskie, Koss, & Tanaka, 1991), and substance use (Abby et al. 2001; Swartout & White, 2010). More recently, researchers have used the structural equation modeling (SEM) approach to construct and test comprehensive models of sexual aggression, which have included many of the factors listed above (Anderson & Anderson, 2008; Knight & Sims-Knight, 2004; Malamuth et al., 1991; Malamuth, Linz, Heavy, Barnes, & Acker, 1995; Parkhill & Abbey, 2008). These modeling approaches allow researchers to holistically conceptualize and test several different variables that have been previously found predictive of sexually aggressive behavior. The model that the current project seeks to replicate and expand—the confluence model of sexual coercion—was

proposed in an effort to unify the literature by explaining how many of these variables come together to predict coercion against women (Malamuth, Linz, Heavey, Barnes, & Acker, 1995; Malamuth et al., 1991).

The Confluence Model of Sexual Coercion²

Malamuth and colleagues' (1991) confluence model hypothesizes two pathways—promiscuous sex and hostile masculinity—that lead to sexually coercive behavior. In the initial iteration of the confluence model, both the sexual promiscuity and hostile masculinity constructs were significantly influenced by delinquency during adolescence; delinquency, in turn, was influenced by negative childhood experiences such as child abuse or witnessing domestic violence. The promiscuous sex pathway was indicative of high levels of sexual activity with little emotional attachment to one's partner on the part of the male (Malamuth et al., 1991). Malamuth and his colleagues proposed that negative childhood experiences, such as witnessing domestic violence and physical and sexual abuse, were predictive of promiscuous sexual activity. This suggested relation was mediated by adolescent delinquency (i.e., impulsivity, nonconformity, and antisocial behavior). The authors proposed that delinquency during adolescence may promote impersonal sex because these activities impede the development of prosocial attitudes and beliefs concerning sexual activity. Adolescent delinquency may also lead men to become sexually active at younger ages, often before

² Although there are other confluence models (e.g., Zajonc, 1983 and Rodgers, 2001), in this paper, mentions of “confluence model” specifically refer to Malamuth et al.'s (1991) model of sexual aggression.

they develop the skills and maturity necessary to properly negotiate such complex interactions.

Parkhill and Abbey (2008) cite two rationales to explain the link between promiscuous sex and sexual coercion in the confluence model. First, promiscuous males view sex as a “conquest” rather than a consenting interaction, and they may be prepared to use coercive tactics to meet their goals. Second, these young men have more opportunities to be sexually coercive: they go on more dates and place themselves in more situations that put them into isolated contact with women. These two ideas may explain why sexually aggressive men begin having sex at an earlier age and have more dates and sexual partners compared with non-sexually aggressive males (Abbey, McAuslan, & Ross, 1998).

The hostile masculinity pathway of the confluence model underscores the power dynamics involved in sexual coercion. Hostile masculinity is a robust construct that most commonly refers to attitudes toward women, intimate relationships, and violence (Parkhill & Abbey, 2008; Malamuth et al., 1995). Witnessing or experiencing violence during childhood, along with associating with delinquent peers during adolescence, may create an environment where young men learn to endorse violence and treat women as objects. These men grow up to hold adversarial attitudes toward women and intimate relationships and to support the use of violence within these relationships (Malamuth, Heavey, & Linz, 1993). Hostile masculinity signifies that a man holds attitudes accepting of violence and traditional gender roles. As such, research suggests that compared with non-sexually aggressive men, sexual aggressors report significantly higher levels of

hostility toward women, rape myth acceptance, adversarial sexual beliefs, sexual dominance, and acceptance of interpersonal violence (Anderson & Anderson, 2008; Hersh & Gray-Little, 1998; Lanier, 2001; Lim & Howard, 1998; Malamuth, 1986; Muehlenhard & Linton, 1987; Rappaport & Burkhart, 1984; Wheeler, George, & Dahl, 2002).

Malamuth and colleagues (1995) propose that hostile masculinity can be conceptualized as resulting from two related personality profiles: (1) a generally defensive, insecure, and distrustful orientation, particularly in relation to women, and (2) an orientation that is gratified by dominating or controlling women (Malamuth, et al., 1995). Men with high levels of hostile masculinity fear both being rejected by women and the power that women hold in sexual situations. These men use sexual coercion to conquer these fears by disregarding rejection and exerting power over women. The feelings associated with hostile masculinity, in part, may be due to masculine gender role stress—the stress that a man experiences as a result of real or perceived threats to his masculine self-concept. Sexually coercive behavior may be a mechanism men use to affirm their masculinity to themselves and those around them (Miedzian, 1993).

In the first test of the confluence model, when fit to data collected from a nationwide sample of college males, the promiscuous sex and hostile masculinity constructs accounted for a combined 26% of the variance associated with sexually coercive behavior. The interaction of these two constructs accounted for an additional 4% of the variance—indicating that men with high levels of hostile masculinity who engage in promiscuous sex are most likely to be coercive (Malamuth et al., 1991). The power of

the confluence model in predicting sexually coercive behavior has been replicated by several research groups (e.g., Anderson & Anderson, 2008; Knight & Sims-Knight, 2003; Malamuth et al., 1995; Parkhill & Abbey, 2008). Additionally, the indicators used to measure hostile masculinity and promiscuous sex have varied across studies—attesting to the generalizability of these constructs. It should be noted, however, that in their path-analytic replication of the confluence model, Anderson and Anderson (2008) found only the hostile masculinity pathway to be a significant predictor of sexual aggression. Moreover, several constructs included in the original iteration of the confluence model—parental violence, childhood abuse, and social isolation—have been left out of recent iterations for various reasons (Anderson & Anderson, 2008; models 3 & 4 of Malamuth et al., 1995; Parkhill & Abbey, 2008).

The confluence model utilizes person-level behavioral and attitudinal variables together to predict sexually aggressive behavior. In this respect, the model provides insight into both the content and process involved with sexual coercion at the individual level. The content refers to the attitudes and behaviors found predictive of sexual coercion; the process refers to the manner in which these variables are organized to form a person-level model of sexual coercion. As noted by Malamuth, however, research should be conducted in an attempt to explain *social* influences on coercive behavior:

Such research may also benefit from more general analyses of social influence...It is likely that our theoretical understanding will be advanced by developing general principles of human influence as well as models specifically focusing on narrower instances of the use of coercion, such as aggression against women. (Malamuth et al. 1991, p. 680)

Although Malamuth wrote this passage over 20 years ago, the confluence model has not yet been extended to address any form of social influence on sexual coercion; replications and extensions continue to use only person-level variables to predict sexual coercion.

Social Networks

Developed and utilized by social scientists of various disciplines over the past 50 years, the social network perspective has been largely absent from the social psychological literature (for exceptions, see Ennett & Bauman, 1994 and Visser & Mirabile, 2004) and certainly absent from the discussion of social influence on sexual aggression. The social network perspective offers an opportunity to explore many of the same social phenomena that social psychologists have studied for decades, but from a different theoretical, methodological, and analytical standpoint. When attempting to explain or predict individual behavior, the social network perspective focuses on an individual's relationship dynamics as opposed to intra-individual variables. Through this lens, researchers can describe and analyze patterns of relationships between individuals as well as the effects associated with these relationships—an object of analysis that is often disregarded by social scientists (Wasserman & Faust, 1994).

The social networks perspective is well-suited for measuring a variety of variables associated with peer influence. While discussing the process of building group solidarity, Collins (1988, p. 416-417) proposes social network density as a key factor: “The more tightly that individuals are tied into a network, the more they are affected by group standards...tightly connected groups make up a clique; with such highly cohesive groups, individuals tend to have very homogeneous beliefs.” Social network analysis gives

researchers the ability to analyze levels of cohesion within subgroups. A cohesive subgroup refers to a subgroup of people within a larger network who share strong, direct, positive, or frequent ties with one another relative to the rest of the network (e.g., peer groups; Wasserman & Faust, 1994). Density—or cohesion within a subgroup—can be quantified using several different criteria. Social scientists use a variety of methods for determining cohesive subgroups within social networks. Researchers may stipulate that subgroup members all share direct ties, all share at least indirect ties, share enough ties to exceed a threshold determined by the researcher, or have a high number of ties relative to the rest of the network (Wasserman & Faust, 1994). Network density can be determined through assessing how often members of networks or subgroups interact, the length of these interactions, the quality or substance of these interactions, or how close group members feel to one another.

The current research focuses on a specific type of social network—the peer network—a group of similarly-aged people who sustain personal relationships across time. It is well established that peer networks play a major role in the development of aggressive behaviors, especially among children and adolescents (for a review see Espelage, Wasserman, & Fleisher, 2007). Research on aggressive teens has found that they have strong peer relationships, often with other aggressive teens, and increase their status within the peer group through aggressive acts (Cairns & Cairns, 1994). Interestingly, though, teens in low density peer networks engage in significantly more direct aggression compared with teens in high density peer networks; the reverse trend is found for indirect aggression (Green, Richardson, & Lago, 1996). Teens who have weak

peer-support structures might resort to physical violence to address peer conflict, whereas teens that have tight-knit peer groups can use the power of their group to address these conflicts—through relational aggression. Based on these findings, there may be two different forces involved in peer influence on individual aggressive behavior. There is general social influence of attitudes and behaviors, which pressures individuals to think and act like their peers. There also seems to be a general effect of peer network density on aggressive behavior—members of highly dense groups tend to be less physically aggressive. The present study tests the generalizability of these findings to sexual aggression and adds to our knowledge of the context in which sexual aggression occurs.

The social psychological literature on attitudes resounds with reports linking social influences to attitude development and attitude strength (e.g., Festinger, Schacter, & Bach, 1950; Harton & Latané, 1997; Newcomb, 1943; Visser, & Mirabile, 2004; for a review, see Prislin & Wood, 2005). Male peer groups may be largely responsible for the development of attitudes predictive and supportive of sexual aggression: negative masculinity, acceptance of violence against women, adversarial sexual beliefs, hostility toward women, and rape myth acceptance—the attitudes used over the years to test the confluence model. Peer influences on these key attitudes may partially account for the relationship between peer and individual sexual aggression (Alder, 1985; Gwartney-Gibbs, Stockard, & Bohmer, 1989) and would generally validate peer-support interpretations of sexual coercion (Schwartz & DeKeseredy, 1997, 2000).

The Current Research

The current study is strongly informed by the theoretical and empirical literatures concerning social influence and social networks. Generally speaking, it is clear that individuals influence—and are influenced by—those around them, in terms of both their attitudes and behaviors. It is also clear that structural variables within social networks influence how information is transferred between people and the extent to which people internalize and embody this information. By this logic, men's sexually aggressive attitudes and behaviors should be predicted by the attitudes of their close friends; this relation, in part, should be a function of peer group density. Highly hostile and highly dense peer groups should influence individual members to also hold highly hostile attitudes toward women. Less dense peer groups, however, should hold less influence over individual members' attitudes toward women. Thus the following research questions were developed: (1) What is the relation between peer and individual attitudes toward women, sex, and sexual aggression? and (2) If there is a significant relation, is it moderated by peer network density?

To address these two research questions, the confluence model of sexual coercion was replicated and extended to include perceived peer attitudes as well as peer network density—a structural element of young men's peer networks. This extension adds inter-individual predictors of sexual aggression to the intra-individual predictors of the traditional confluence model. Most recent replications of the confluence model have not included the childhood or social isolation constructs—ostensibly because they have never been found to have direct bearing on sexually coercive behavior—although, the hostile

masculinity and sexual promiscuity pathways have been constructed in all replications. In accordance with recent replications of the confluence model (e.g., Anderson & Anderson, 2008; Parkhill & Abbey, 2008), the current project replicates the hostile masculinity and sexual promiscuity pathways without the addition of childhood risk factors or social isolation³ (see Figure 1).

In addition to replicating the fit and relations of the confluence model, the current research extends this model by adding perceived peer attitudes and peer group density constructs. Based on the literature concerning social networks and social influence, perceived peer attitudes are thought to be significant contributors to individual attitudes, and peer network density is thought to moderate this relationship (see Figure 2). The specific perceived peer attitudes measured were those toward women, sex, and sexual aggression. Participants' perceived peer attitudes were collected via self-report—allowing for the measurement of participants' perceptions of their peers' attitudes rather than peers' actual attitudes. Although this may seem like a methodological limitation, the literature concerning social influences on sexual aggression suggests that this is a well-informed strategy—perceptions of others' sexual attitudes and behaviors are what truly influence individual attitudes and behaviors (Chia & Lee, 2008; Cohen & Shotland, 1996). Peer group density is defined as the strength of relationships among participants' close male friends. This will serve as an indicator of how tight-knit participants' peer groups are.

³ The social isolation factor included in the original iteration of the confluence model (Malamuth et al., 1991) did not refer to a man's social network; rather, it referred to his level of interaction with women. The social isolation factor was not found to be predictive of the other factors within the confluence model and has been excluded from all subsequent published replications and extensions of the model.

CHAPTER II

METHOD

Participants

Participants were 341 college males recruited from a participant pool at a medium-sized public university; this constitutes a large sample size per Kline (2005). Participants completed a series of web-based surveys in exchange for course credit. Data were collected via the internet to collect a sample of adequate size for the proposed analyses. Of the men who participated in this study, the average age was 18.9 years and 60.9% were Caucasian, 20.6% were African-American, 7.5% were Asian or Pacific Islander, 4.6% were Hispanic, 0.6% were Native American or Alaskan Native, and 5.8% were of another ethnicity. See Table 1 for further demographic information.

Procedure

After volunteering for the current study, participants received a link to an online survey. Upon accessing the web-based survey, participants were immediately presented with an informed consent page explaining the general purpose and method of the study. At the end of the informed consent protocol, participants were presented with the following statement: *If you have read and understand the above statements, please click on the "Continue" button below to indicate your consent to participate in this study.* Continuing with the survey, therefore, constituted consent to participate. Each measure

was presented on separate page and contained specific instructions for interpreting and responding to survey items. Items pertaining to individual and perceived peer attitudes were counter-balanced to assess ordering effects. There were no significant effects related to order of questionnaires.

Identifying information was collected to provide students with course credit in exchange for their participation in the study. To protect the confidentiality of participants' responses, two on-line surveys were constructed. The first survey collected participants' names and email addresses; the second survey collected anonymous responses to the measures detailed in the next section. From the standpoint of the research participants, the first survey blended seamlessly into the second survey. However, because the surveys are technically separate, they generated two separate and unlinked data files: one for identifying contact information and one for anonymous research data. These two data files cannot be combined, thus, participant anonymity is maintained.

Constructs and Measures

Delinquency. Delinquency was measured using the Self-reported Delinquency Scale, developed by Elliott, Huizinga, and Ageton (1985). The Self-reported Delinquency Scale is a 20-item measure that asks respondents how many times in the past year they have engaged in specific delinquent behaviors such as damaging property, stealing, selling drugs, cheating, or fighting. Participants responded to each item on a 5-point scale ranging from *never* to *more than 10 times* ($\alpha = .76$). To develop multiple indicators of delinquency, the 20 items were divided into three subscales, two with seven items and the

other with six, to best approximate this unobserved construct (Gruhen, personal correspondence, 2010). This was accomplished by extracting one factor from an exploratory factor analysis to obtain loadings for each of the 20 items; using these loadings, subscales were constructed by distributing items that loaded strongly onto the latent delinquency construct with items that loaded relatively weakly.

Individual attitudes. Three scales developed by Burt (1980)—the Adversarial Sexual Beliefs (ASB), Acceptance of Interpersonal Violence (AIV), and Rape Myth Acceptance (RMA) scales—were used to indicate individual attitudes supporting violence against women. The ASB is a 9-item measure of the extent to which people judge male-to-female relationships to be antagonistic. Examples of items are “A man’s got to show the woman who’s boss right from the start or he’ll end up henpecked,” and “A lot of women seem to get pleasure in putting men down.” ($\alpha = .80$). The AIV contains 6-items that measure the extent to which men support violence within intimate relationships. Examples of items are “Sometimes the only way a man can get a cold woman turned on is to use force” and “A man is never justified in hitting his wife [reverse-scored]” ($\alpha = .59$). The RMA is a 13-item measure containing items such as “A woman who goes to the home or apartment of a man on their first date implies that she is willing to have sex” and “Women who get raped while hitchhiking get what they deserve” ($\alpha = .88$). Participants responded to all items on 7-point scales ranging from *strongly disagree* to *strongly agree*.

Hostile masculinity. Malamuth and colleagues (1991, 1995) operationalize the hostile masculinity pathway of the confluence model using three scales: the Sexual

Dominance Scale (SDO; Nelson, 1979), the Hostility Toward Women Scale (HTW; Check, 1985), and the Adversarial Sexual Beliefs Scale (ASB; Burt, 1980); it should be noted that the ASB, described above, was also used to indicate the individual attitudes construct in the original version of the confluence model (Malamuth et al., 1991). This measurement-related issue will be discussed in the results and discussion.

The SDO is an 8-item subscale of the Sexual Functions Inventory (Nelson, 1979). This subscale measures the extent to which sexual activity is motivated by desire for power or control over one's sexual partner. Examples of items are "I have sex because: I enjoy the feeling of having someone in my grasp," and "I have sex because: I enjoy conquest" ($\alpha = .77$).

The HTW scale is a 21-item attitudinal measure of anger specifically directed at women. Examples of items are "I feel that many times women flirt with men just to tease or hurt them," and "When I look back at what's happened to me, I don't feel at all resentful toward women in my life [reverse-scored]" ($\alpha = .80$). Participants responded to all items within these three measures on 7-point scales ranging from *strongly agree* to *strongly disagree*.

Sexual promiscuity. In line with the conceptual replication of the confluence model conducted by Parkhill and Abbey (2008), four questions were used to assess sexual promiscuity. The first two questions were "How many sexual partners have you had in your lifetime?" and "What is the approximate number of dates that you expect to go on with a woman before you engage in sexual intercourse?" The third and fourth indicators were responses to the statements: "Sex without love is okay" and "You enjoy

casual sex with different partners” (Hendrick & Hendrick, 1987; Simpson & Gangestad, 1991). Participants responded to both of these statements on 7-point scales ranging from *strongly disagree* to *strongly agree*. These four observed variables were used as individual indicators for the latent sexual promiscuity construct.

Peer network density. Peer network density was assessed using a modified version of the procedure outlined by Green, Richardson, and Lago (1996): participants were asked to complete a measure of peer network density by providing responses to the statement *Please list the five (5) male peers with whom you most often associated during high school (either face-to-face, over the phone, or through electronic means such as text messages, email, and social networking sites)*. The answers to the aforementioned statement were forwarded or “piped” into a subsequent series of questions which asked participants to *Rate the relationship strength of each of the following pairs of peers with 0 meaning they have never met and 10 meaning that they are extremely close friends*. This statement was followed by all ten possible pairs of the five peers previously listed by participants. Peer network density was calculated as the average relationship strength of participants’ peers.

Perceived Peer attitudes. Two revised measures were used to assess perceived peer attitudes supporting violence against women: the Justification of Rape Scale (JRS; Burgess, 2007) and the attitudes section of the Date Rape Attitudes Survey (DRAS; Lanier & Elliot, 1997). These two measures were chosen because they differ from the measures used to assess individual attitudes supporting violence against women to prevent projection or anchoring effects. The instructions of the JRS and the DRAS were

slightly modified for the current study to ask about peer attitudes rather than personal attitudes: *For the following statements, PLEASE ANSWER ACCORDING TO WHAT YOUR CLOSE FRIENDS THINK, specifically* [names of the five friends that each participant listed in the peer network density measure were piped into these instructions at this point]. *If these friends were hanging out, honestly discussing each statement without you there, what responses would they give?* To ensure that participants continually applied these instructions, each item was preceded by the statement *Answer for your friends*. The JRS is a 10-item measure that has been found to be a strongly related to sexually aggressive behavior and proclivity (Burgess, 2007). A sample item is “Using coercion or physical restraint is a legitimate way to acquire sex from a certain type of woman” ($\alpha = .82$). Participants responded to the statements on a 7-point scale ranging from *strongly agree* to *strongly disagree*. The DRAS was specifically developed to assess attitudes toward date rape among college students. The DRAS contains 20 items such as “Women provoke rape by their behavior” and “If a woman dresses in a sexy dress she is asking for sex” ($\alpha = .84$). Participants responded to statements on 7-point scales with responses ranging from *strongly agree* to *strongly disagree*.

Sexual aggression. Sexual aggression was assessed using the short form of the Sexual Experiences Survey for men (SES-M; Koss et al., 2007). The SES-M measures the frequency and severity of men’s sexual experiences. Men were instructed to report “the number of times that [they] have had the listed experience.” Based upon their responses to the SES-M, men can be either categorized based upon the most severe sexual experience that they have engaged in (no sexual contact, consensual sexual

contact, unwanted sexual contact, verbal coercion, attempted rape, or rape), or a total sexual aggression score based on frequency of behaviors in each aggressive category can be used. In the present study, instead of classifying men according to their most severe level of perpetration, sexual aggression was modeled as a latent factor. Four manifest variables were constructed based on men's frequency of each form of sexual experience as measured by the SES-M—these variables were then used to indicate the latent sexual aggression factor, as proposed by the SES Collaborative (Koss et al., 2007).

Carelessness. As a check for carelessness, 13 items from the Infrequency Scale were embedded at the end of the measures (Chapman & Chapman, 1986). The Infrequency Scale contains items such as “On some mornings, I don’t get out of bed immediately when I first wake up” and “I cannot remember a time when I talked with someone who wore glasses.” Participants responded to these items with either *true* or *false*. These items were designed to evoke a particular response from a vast majority of participants; therefore, the Infrequency Scale was used to indicate careless responding to survey questions.⁴

⁴ Summed responses to Infrequency Scale items yielded a range of 0 – 4. Model fit did not differ as a function of including or excluding participants who provided one or more, two or more, three or more, or four uncommon answers to these items. Therefore, all data were used to assess model fit.

CHAPTER III

RESULTS

Data Analysis Strategy

Prior to analyses, all data were coded according to the instructions corresponding with each scale; composite variables were constructed where applicable. SPSS was used to obtain descriptive statistics and Chronbach's alpha reliability estimates for each scale (see Table 2). After descriptive statistics and internal consistency scores were obtained, all variables to be used in the modeling process were standardized to z-scores to reflect a mean of 0 and a standard deviation of 1. This method has been used by many research teams that have replicated and extended the confluence model (e.g., Parkhill & Abbey, 2008; Vega & Malamuth, 2007). Latent variable modeling was conducted using Mplus 5.1 (Muthen & Muthen, 2008). Two forms of latent variable modeling were used: exploratory factor analysis and structural equation modeling.

Exploratory factor analysis (EFA) is a method of estimating an unobserved structure among variables that does not require predetermined variable assignment or number of factors within the structure (Kim & Mueller, 1978). This method was employed to address three measurement-related questions: (1) How well do the variables coalesce into the latent factors of the confluence model, as presented in the literature?; (2) To what extent do self-reported variables related to perceived peer attitudes coalesce into a different latent subgroup when compared with variables related to individual attitudes?;

and (3) Is there preliminary evidence suggesting that sexual coercion could be successfully modeled as a latent construct, indicated by frequencies of different sexually aggressive behaviors? An oblique rotation was used in all EFAs due to assumed inter-factor correlations.

Structural equation modeling (SEM) was used to assess both the measurement of each latent factor and the structural relationships between factors. SEM can be simply described as a combination of confirmatory factor analysis—where variables are assigned to a predetermined set of factors—and path analysis—where several regression paths are fit within the same model (Kline, 2005). SEM corrects for measurement error, allows structural relations between both latent and observed variables, and provides statistics relative to overall model fit (Kline, 2005).

Although SEM has become quite common across academic disciplines, methodologists continue to develop this approach. An example of this continual development is the relatively recent ability to test latent variable interaction terms. This innovation allows researchers to test interactions between latent variables, or between latent and observed variables. The current study achieves this end through a modified version of the latent moderated structural equation method (LMS; Klein & Moosbrugger, 2000). Of the methods available to model non-linear relations within a latent variable framework, LMS is thought to be the most accurate. This is because it uses maximum likelihood estimation to take the known non-normality of latent product terms into account (Kline, 2011; Klein & Moosbrugger, 2000).

Although there is not a primary, agreed upon, indicator of model fit in SEM, it is generally accepted that the chi-square statistic, Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), and Standardized Root Mean Residual (SRMR) should be reported. A non-significant chi-square statistic suggests that the covariance matrix generated from the model does not significantly differ from that generated from the observed data; in other words, a non-significant chi-square ($p > .05$) suggests that the model fits the data well. It should be noted that the chi-square test is sensitive to large sample sizes, such as the one collected for the current study. Furthermore, an RMSEA statistic below .08, a CFI statistic above .90, and a SRMR statistic of below .10 all suggest that a model fits data acceptably well. As of yet, however, approximate fit indices or model chi-square statistics are not available for models that use the LMS method. In these cases, the Akaike information criterion (AIC) and Bayesian information criterion (BIC) will be used to assess model fit. Although the AIC and BIC cannot inform how well a model fits data, they can be used to compare the fit of competing models. Therefore, models containing latent interaction terms will be compared with other models using these relative fit indices.

Descriptive Statistics

Approximately 25% of men reported engaging in some form of sexual aggression with 11.4% reporting behavior that meets legal definitions for either attempted rape or rape;⁵ these rates correspond with previously published findings (Koss, Gidycz, &

⁵ Interestingly, only one out of 346 participants responded “yes” when asked “Do you think that you may have ever raped someone?”

Wisniewski, 1987; White & Smith, 2004). Over 5% of men reported participating in an act that meets the legal definition of attempted rape or rape as part of a group of two or more people. See Table 1 for more complete information concerning frequencies of sexually aggressive tactics and behaviors. Means, standard deviations, ranges, and reliability estimates for each indicator used in the modeling process are found in Table 2. As can be seen in Table 3, many of the indicators are correlated. Interestingly, while many of the attitudinal indicators correlate with frequencies of unwanted contact and verbal coercion, few correlate with the more severe forms of sexual aggression—attempted rape and rape. Also of note, frequencies of attempted rape and rape are highly correlated ($r = .95$); this will be addressed later in the modeling process.

Exploratory Factor Analysis

To assess whether the structure of the current data is similar to established models in the literature, all indicators used in the study, with the exception of the peer network density variable, were entered into an exploratory factor model. A five-factor model best fit the data ($RMSEA = .06$, $SRMR = .02$) with eigenvalues greater than one for each factor. The resulting five factors can be interpreted as *individual attitudes/hostile masculinity*, *perceived peer attitudes*, *delinquency*, *sexual promiscuity*, and *sexual coercion*. To address the first measurement-related question, the largest factor loadings for each indicator generally correspond with their assigned latent factor within the confluence model and the hypothesized peer network influence model (see Tables 4 and

5). The only exceptions to this are the *individual attitudes* and *hostile masculinity* factors; indicators of these two constructs load strongly onto a single factor.⁶

To address the second measurement-related question, the hypothesized indicators of *perceived peer attitudes* loaded on a different factor than the individual attitude indicators. This supports the notion that participants truly reported perceptions of their peers' attitudes rather than their own attitudes. To address the third and final measurement-related question, all four sexual coercion indicators were found to load strongly onto one factor; this factor explains at least 50% of the variance associated with each indicator. This finding suggests that modeling sexual coercion as a latent construct is a sound analytic strategy and should be considered in future research designs, where applicable.

Structural Equation Models

Confluence model replication. The first model to be tested was a replication of Malamuth et al.'s confluence model of sexual coercion (1991) without the childhood or social isolation constructs. As observed in Figure 1, the current replication contains five latent constructs: delinquency, sexual promiscuity, individual attitudes, hostile masculinity, and sexual coercion. Measurement models for each of these five latent variables are depicted in Figures 3-7, and the fit of each individual confirmatory factor model is found in Table 6. It is not surprising that each confirmatory factor model fits the data well—because each model has few degrees of freedom, they are all close to

⁶ Estimating a six-factor model does not solve this issue, as these variables persist in strongly loading onto one factor; the sixth factor has an eigenvalue less than one and extremely small factor loadings for all variables in the model.

saturation. In some cases, it was necessary to constrain model parameters to avoid model non-identification. In all cases, intercepts of indicators were constrained to be equal; this did not affect the models because all indicator variables are standardized. These constraints were not necessary when testing the full confluence model or the peer network influence models as there were more than enough degrees of freedom for these models to be identified.

A test of the structural model revealed significant paths for all of the proposed relations (see Figure 8). Delinquency positively predicts both individual attitudes ($b^* = .237, p \leq .001$) and sexual promiscuity ($b^* = .409, p < .001$); individual attitudes strongly predicts hostile masculinity ($b^* = .865, p < .001$); and sexual coercion is predicted by both hostile masculinity ($b^* = .182, p < .05$) and sexual promiscuity ($b^* = .116, p < .05$). Likely due to the near perfect correlation between attempted rape and rape, model modification indices suggested to correlate the rape and attempted rape indicators of the latent sexual coercion construct ($r = .787, p < .001$); this step slightly improved the overall model fit and revealed the significant relation between sexual promiscuity and sexually coercive behavior.

Model fit statistics (Table 7) suggest that, overall, this replication of the confluence model fits the data adequately well, with $RMSEA = .076$, $CFI = .929$, $SRMR = .08$. The chi-square statistic is significantly different from zero; however, this is to be expected when fitting a model to a relatively large dataset. Taken together, these statistics indicate that this replication of the confluence model fits the data adequately well.

Full peer network influence model. The measurement model for the perceived peer attitudes factor is depicted in Figure 9, with fit statistics for this confirmatory factor analysis in Table 4. For identification, again, it was necessary to constrain the intercepts of each indicator to be equal. It was also necessary to constrain the residual variance of peer date rape acceptance to equal zero; this did not drastically affect the model as the estimated residual variance of this indicator was non-significant. Both indicators loaded strongly onto this factor with peer date rape acceptance fixed at 1.00 and peer justification of rape estimated at .743. Peer network density was represented in the model by the observed average density of the peer relationships that participants reported (see Table 2 for descriptives and reliability associated with this measure).

Before testing the full hypothesized model of peer network influence, it was necessary to test a preliminary model containing main effects of perceived peer attitudes and peer network density on individual attitudes and hostile masculinity. This *hypothesized* main effects model with standardized estimates is depicted in Figure 10, and the *final* main effects model with estimates is depicted in Figure 11. In the final model, significant paths were found from perceived peer attitudes to individual attitudes ($b^* = .722, p < .001$) and peer network density to individual hostile masculinity ($b^* = -.093, p \leq .05$).

After assessing the main effects between peer- and individual-related constructs, the full peer network influence model—including the interaction between perceived peer attitudes and network density—was fit to the data (see Figure 12). Standardized estimates are not available for models containing a latent interaction term; therefore,

unstandardized estimates are reported. A test of the structural model revealed that perceived peer attitudes significantly predict individual attitudes of violence toward women ($b = .665, p < .001$); although, as in the main effects model, perceived peer attitudes did not significantly predict hostile masculinity ($p = .88$). Peer network density predicted neither individual attitudes ($p = .52$) nor hostile masculinity ($p = .78$). Furthermore, the interaction between perceived peer attitudes and peer network density neither predicted individual attitudes ($p = .51$) nor hostile masculinity ($p = .40$). In the traditional portion of the confluence model, individual attitudes predicted hostile masculinity ($b = .838, p < .001$); however, with the addition of perceived peer attitudes to the model, delinquency did not significantly predict individual attitudes ($b = .043, p = .45$). Delinquency continued to predict sexual promiscuity ($b = .239, p < .001$), and both sexual promiscuity ($b = .189, p < .05$) and hostile masculinity ($b = .179, p < .05$) continue to predict sexual coercion.

Final peer network influence model. The final peer influence model was formed through a process of pruning non-significant paths from the hypothesized model. Also, the adversarial sexual beliefs indicator, which had been specified to load on both the individual attitudes and the hostile masculinity factors in both of the previously reported models (per Malamuth et al., 1991), was specified to only load onto the individual attitudes factor in this final peer influence model. This decision was made, in part, because previous replications and extensions of the confluence model have found ASB to load more strongly on the individual attitudes factor than the hostile attitudes factor (e.g., Malamuth et al., 1991; Parkhill & Abbey, 2008).

The resulting model reflects a significant relation between perceived peer attitudes and individual attitudes ($b = .575, p < .001$). The effect of perceived peer attitudes on individual attitudes continues to nullify the significant relation between delinquency and individual attitudes ($p = .103$); therefore, this path was removed from the final model. Although perceived peer attitudes did not have a significant effect on hostile masculinity ($b = -.087, p = .389$), hostile masculinity was significantly negatively predicted by peer network density ($b = -.073, p < .05$). Interestingly, however, the interaction between perceived peer attitudes and network density positively predicted individual hostile masculinity ($b = .081, p < .05$). Individual attitudes continued to significantly predict levels of hostile masculinity ($b = 1.044, p < .001$), delinquency significantly predicted sexual promiscuity ($b = .240, p < .001$), and sexual coercion was significantly predicted by hostile masculinity ($b = .203, p < .02$) and sexual promiscuity ($b = .184, p = .05$). Within the final peer influence model, overall, much of the confluence model has been replicated—the only exception being the path between delinquency and individual attitudes. Perceived peer attitudes were found to directly affect individual attitudes, and affect hostile masculinity as a function of peer group density. As the only two purely exogenous latent factors in the model, delinquency was correlated with perceived peer attitudes ($r = .204, p < .001$).

The AIC and BIC statistics detailed in Table 8 assess the fit of each primary model tested and serve as comparison criteria. First, although the AIC and BIC values for the hypothesized and final peer network influence models are very similar, the hypothesized model estimates 65 parameters whereas the final model estimates only 60.

Because there is not a significant difference in fit between these two models, and because the hypothesized model is less parsimonious, it is rejected in favor of the final model.

Second, using similar criteria, the confluence model clearly fits the data better than the final peer network influence model (*AIC*: 12593 vs. 13758; *BIC*: 12804 vs. 14002), with several fewer freely estimated parameters (55 vs. 64). Although the overall fit of the model is decidedly poorer than that of the confluence model, the significant paths found in the peer network influence model are worthy of further discussion and future analysis.

CHAPTER IV

DISCUSSION

The current study sought to answer the research questions (1) What is the relation between peer and individual attitudes toward women, sex, and sexual aggression? and (2) If there is a significant relation, is it moderated by peer network density? These two questions were addressed by extending the confluence model of sexual coercion to include perceived peer attitudes concerning sexual aggression and peer network density. In a preliminary step, the hostile masculinity and sexual promiscuity pathways of the confluence model were replicated. Then, perceived peer attitudes supporting sexual aggression and peer network density were added to the model. Perceived peer attitudes strongly predicted individual attitudes concerning violence against women, and perceived peer attitudes and peer network density interacted to positively predict individual levels of hostile masculinity. This suggests that when a man has a densely-knit peer group that is accepting of sexual violence against women, he is likely to hold highly hostile attitudes toward women. These findings correspond with more general findings on peer influences on attitudes among adolescents (Harton & Latané, 1997), and the relations between peer network structure and individual attitudes (Espelage, Wasserman, & Fleisher, 2007). Therefore, it is not surprising that peers share similar ideas concerning sex and women, and that this relation is moderated by the structure of their peer network—in this case, peer group density.

When main effects between peer-level and individual-level constructs were assessed, a significant negative relation was found between peer group density and individual hostile masculinity. This finding suggests, in general, high peer group density has a positive influence on individual members, in that they are less likely to hold highly hostile attitudes toward women. If the tight-knit peer group holds attitudes accepting of violence against women, however, high peer group density becomes a risk factor for high levels of hostile masculinity.

An interesting difference between the structure of the peer network influence and confluence models is the effect of delinquency on individual attitudes of violence against women—a relation present in the confluence model, but not in the peer network influence model. Although delinquency is conceptualized strictly as an individual construct rather than one that relies on information concerning delinquent peers (e.g., Malamuth, 1991), there is still a large amount of shared variance between delinquency and perceived peer attitudes of violence against women. The addition of the peer influence factor to the model clearly accounts for much of the variance in individual attitudes that was once associated with delinquency, rendering it a non-significant predictor.

There are several equally plausible explanations for the relation found between perceived peer attitudes toward women and violence and corresponding individual attitudes. Admittedly, the tenor of this paper suggests that peer groups influence individual members to adopt the prevailing attitudes of the group, and new group members generally conform to the status quo. This notion of *assimilation* is supported by large bodies of psychological and sociological literature that have consistently reported

this general trend (e.g., Deutsch & Gerard, 1955). An equally sound explanation, however, is the well-known tendency for like-minded people to attract one another—in a process of *selection* (Byrne, 1971). It is plausible that men who hold hostile attitudes toward women and who are accepting of sexual aggression are attracted to one another. If this is the case, what is the mechanism that brings these men together? When they first meet one another, it is unlikely that these men converse about their distrust of women, or how they view date rape as acceptable; if these men select one another, it is probably through a more nuanced mechanism. They may send and receive subtle verbal cues, especially when they talk about topics related to women, sex, and masculinity. It is also possible that there is a third variable that brings these men together, one that is related to sexually aggressive attitudes and behaviors, but is more public, readily observable, and likely to bring like-minded men together—two strong contenders are general aggression (Anderson & Anderson, 2008) and substance use (Gallagher, Hudepohl, & Parrott, 2010; Parkhill & Abbey, 2008; Swartout & White, 2010). Assessing social network structure and individual attitudes and behaviors across time would allow researchers to sort out many of these remaining questions.

The negative relation between peer network density and hostile masculinity was somewhat, but not strongly, anticipated based upon the findings of Green, Richardson, and Lago (1996). Although little attention was paid at the time, these researchers found that male teens with low levels of peer group density tended to be more physically aggressive compared with men in more dense groups. This finding suggests that a dense network of male peers may generally protect against the development of highly hostile

attitudes toward women. This could also be interpreted as men who tend to hold highly hostile attitudes toward women tend to reside within relatively weakly-knit male peer groups.

The significant interaction between perceived peer attitudes and peer network density in predicting individual hostile masculinity sheds a bit more light on how peers influence the pathway toward individual sexually coercive behavior. Like direct relation between perceived peer attitudes and individual attitudes toward violence against women, this interaction could be the result of assimilation, selection, or a combination of the two. It is interesting that the direct effect of peer network density on hostile masculinity is negative, although it positively moderates the relation between perceived peer attitudes and individual hostile masculinity. There may be a different process at work in highly dense, highly hostile male peer groups compared with other groups of men. Groups of men anecdotally know to be both highly dense and hostile toward women—street gangs, sports teams, fraternities—are most often implicated in multiple-assault attempted rapes and rapes (Sanaday, 1990), as reported by 5% of the sample. This is not to say that all members of these groups could or would perpetrate these acts. A large majority of these groups are highly dense, but from the current results, high levels of hostility are also necessary to facilitate sexual aggression.

Implications

For the confluence model. This most recent replication of Malamuth et al.'s confluence model (1991) further confirms the model's utility in conceptualizing individual-level factors predictive of coerciveness against women. Some issues remain,

however. The exploratory factor analysis detailed in Table 4 clearly suggests that all five indicators associated with these two latent constructs load strongly onto a single factor. In keeping with much of the previous work on this model, these constructs were initially modeled separately, with adversarial sexual beliefs indicating both the individual attitudes and hostile masculinity factors. In this replication, adversarial sexual beliefs strongly indicated the hostile masculinity factor (.774), but not the individual attitudes factor (.007). This is in contrast to the original published reports of the confluence model as well as many of the subsequent replications, which have found that adversarial sexual beliefs more strongly indicate individual attitudes compared with hostile masculinity (Malamuth et al, 1991; Anderson & Anderson, 2008). In fitting the peer network influence model, the individual attitudes and hostile masculinity factors were modeled three different ways: with adversarial sexual beliefs indicating both individual attitudes and hostile masculinity, indicating only individual attitudes, and indicating only hostile masculinity. Perceived peer attitudes and density were most successful in predicting individual attitudes and hostile masculinity when adversarial sexual beliefs indicated only individual attitudes. Future steps should be taken to improve the measurement of these two latent constructs, possibly using recent innovations in exploratory structural equation modeling (Asparouhov & Muthén, 2009).

For sexual coercion as a latent construct. Aside from the addition of perceived peer attitudes toward violence against women and peer network density, the current study also extended the confluence model by conceptualizing and modeling sexual coercion as a latent construct, indicated by the frequencies of different forms of sexual aggression

within each participant. This is the first known study to employ this modeling strategy, although it has been suggested within the literature (Koss, et al., 2007). In the past, sexual coercion has been modeled as an observed variable—indicating the total frequency of sexually aggressive behaviors across all tactics and outcomes—or as an interval variable—indicating the level of a man’s most severe sexually aggressive behavior. The current latent variable modeling strategy allows both frequency and severity of sexual aggression to be modeled together into one latent construct, using continuous indicators representing the number of times that a man engaged in each individual type of sexual aggression (i.e., unwanted sexual contact, verbally coercive behavior, attempted rape, and rape).

The four indicators of sexual coercion loaded strongly onto one factor in the exploratory factor analysis, which contained all of the indicators to be used in the modeling process. This latent factor explained at least 50% of the variance associated with each observed indicator. The fit of this latent sexual coercion variable has been replicated with separate, unpublished data (Marcinowski & Swartout, 2011). Several different forms of sexually aggressive behavior were measured for this study; the fit of this latent variable to the data suggests that there is an unobserved construct that strongly influences the perpetration of each of these behaviors. This is not surprising, however, based upon the strong correlations between these behaviors (Table 3). This approach can and should be extended in the future to include the modeling of different sexually aggressive tactics (e.g., using force, verbal threats, a position of authority, or drugs or alcohol).

For deterrence programs. Programs designed to weaken men's attitudes supporting sexual aggression have yielded mixed results. These programs have been effective for men holding moderately aggressive attitudes, but largely ineffective for men holding highly aggressive attitudes (Stephens & George, 2008). This may be due to the peer networks with whom the men associate. The current findings suggest that men who hold highly hostile attitudes toward women tend to associate with peers who share these attitudes. Individual participation in a rape prevention program does not address these peer influences—there will be sustained pressure on these men to embody their peer group's norms for attitudes and behaviors. Men who hold attitudes moderately supportive of sexual aggression may not have such strong and consistent pressure from their peers. This might explain why rape prevention programs are far less effective with men who hold attitudes highly supportive of sexual aggression.

Recent research suggests that individuals weigh perceived peer attitudes toward sexual aggression heavily when making the decision to intervening in a sexually aggressive situation (Brown & Messman-Moore, 2010). Based upon the informational social influence literature, social norms campaigns—similar to those developed to reduce alcohol use on college campuses—could be implemented to encourage attitude change at a broader level. Young men look to their peers for information, especially concerning women, dating, and sex (Sim & Koh, 2003). If information concerning what constitutes acceptable behavior within these domains were readily available, negative peer influence might be lessened. This could be combined with bystander intervention programs to institute a dual-pronged approach to reduce sexual violence.

Limitations

Convenience samples of college students are often looked upon as limitations within research designs; however, the sample of college males can just as easily be judged as a strong point of the current project. Adolescence, as defined by the World Health Organization (1989, as cited in Burt, Resnick, & Novick, 1998), begins at pubertal onset and terminates at the age of 24—the age where an individual is thought to reach full cognitive development as well as economic independence. National crime statistics suggest that adolescence is an important developmental stage in terms of sexual aggression; approximately 43% of the men arrested for forcible rape in 2007 were under the age of 25 (US Department of Justice, 2008). Based upon this understanding of adolescence, along with Department of Justice crime statistics, it can be concluded that college-aged men are ideal participants for the study of sexual coercion.

Conclusions

The present study adds to existing knowledge concerning peer-level predictors of sexually coercive behaviors. After replicating an existing model that details individual-level factors predicting sexual coercion—the confluence model of sexual coercion—an extension of this model, which incorporated peer-level factors, was built and tested. Although the new model that includes peer-level predictors does not fit the data better than the confluence model, significant pathways within this model suggest that perceived peer attitudes concerning violence against women influence corresponding individual attitudes. Furthermore, peer group density was found to moderate the relation between perceived peer attitudes toward violence against women and individual hostile attitudes

toward women, in that highly dense peer groups had the strongest positive influence on individual members. The effect of peer network density on hostile individual attitudes, however, was significantly negative—suggesting that individuals with highly dense peer groups tend to have less hostile attitudes toward women. Future research concerning peer influence on individual sexually aggressive attitudes and behaviors should approach these relationships longitudinally. This will allow researchers to better understand how these attitudes develop within some male peer groups and the network factors that facilitate the transmission of these attitudes between peers.

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APPENDIX A

TABLES

Table 1

Sample demographic information

Variable	Classification	Percentage
Ethnicity	White, non-Hispanic	60.9%
	African-American	20.6%
	Asian or Pacific Islander	7.5%
	Hispanic	4.6%
	Native American or Alaskan Native	0.6%
	Other	5.8%
Relationship Status	Single	62.3%
	Dating	33.9%
	Engaged	1.4%
	Married	1.7%
	Divorced/separated/widowed	0.6%
Age	18	49.0%
	19	26.4%
	20	10.4%
	21 or older	14.2%
Sexual coercion	Unwanted contact	22.1%
	Verbal coercion	10.3%
	Attempted rape	7.3%
	Rape	8.8%
	Any	24.9%
Aggressive tactic	Lies	15.8%
	Argument	16.1%
	Drugs	1.8%
	Alcohol	10.3%
	Pressuring to use alcohol or drugs	5.6%
	Threatening harm	3.5%
	Physical force	4.7%
Acted in a group of 2 or more	Attempted rape	3.2%
	Rape	3.8%
	Any	5.6%

Table 2

Means, standard deviations, ranges, and reliability estimates

Variable	<i>M</i>	<i>S.D.</i>	<i>Range</i>	<i>Alpha</i>
Acceptance of interpersonal violence to women	9.52	5.17	0 - 24	.61
Rape myth acceptance	25.18	12.62	0 - 60	.86
Adversarial sexual beliefs	22.42	8.63	0 - 51	.81
Hostility toward women	72.59	21.23	3 - 129	.87
Sexual dominance orientation	25.18	9.88	0 - 45	.88
Peer date rape acceptance	51.39	16.48	6 - 95	.86
Peer justification of rape	13.16	9.91	0 - 46	.86
Delinquency, scale 1	0.66	0.58	0 - 3.14	.71
Delinquency, scale 2	0.56	0.64	0 - 3.14	.65
Delinquency, scale 3	0.52	0.57	0 - 3	.66
Number of sexual partners	3.91	4.86	0 - 20	
Number of dates before sex	13.81	9.10	0 - 35	
Sex without love	2.90	2.12	0 - 6	
Enjoy casual sex	2.40	2.05	0 - 6	
SES: Unwanted contact	0.99	2.78	0 - 24	.85
SES: Verbal coercion	0.45	1.80	0 - 18	.87
SES: Attempted rape	0.60	4.03	0 - 54	.97
SES: Rape	0.69	4.55	0 - 54	.98
Network density	57.69	20.95	7.6 - 100	.81

Table 3

Correlations among variables in models

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. Acceptance of interpersonal violence	--	.54**	.47**	.44**	.31**	.42**	.40**	.16**	.03	.07	.02	.19**	.09	.21**	.22**	.16**	.07	.05	-.04
2. Rape myth acceptance		--	.53**	.51**	.39**	.54**	.57**	.21**	.14**	.09	-.06	.19**	.06	.23**	.24**	.16**	.10	.11	-.05
3. Adversarial sexual beliefs			--	.61**	.42**	.45**	.32**	.12**	.11*	.12*	.12*	.21**	.18**	.34**	.19**	0.09	.02	.03	< .01
4. Hostility toward women				--	.42**	.45**	.35**	.19**	.20**	.15**	.14*	.23**	.19**	.31**	.25**	.15**	.09	.10	-.09
5. Sexual dominance orientation					--	.37**	.28**	.19**	.12**	.19**	.10	.19**	.28**	.34**	.23**	.14**	.05	.07	-.08
6. Peer date rape acceptance						--	.74**	.24**	.19**	.15**	.05	.30**	.23**	.29**	.21**	.15**	.03	.03	-.03
7. Peer justification of rape							--	.23**	.14**	.13*	.02	.29**	.17**	.22**	.22**	.19**	.06	.06	-.04
8. Delinquency 1								--	.65**	.76**	.19**	.15**	.30**	.20**	.18**	.16**	.10	.08	.05
9. Delinquency 2									--	.66**	.40**	.19**	.34**	.27**	0.17	0.05	.06	.04	.12*
10. Delinquency 3										--	.23**	.18**	.33**	.21**	.14*	0.09	.05	.06	.12*
11. Number of sexual partners											--	.32**	.38**	.43**	.15**	.11*	.06	.03	.09
12. Number of dates before sex												--	.45**	.46**	.20**	.17**	.10	.14*	< .01
13. Sex without love													--	.67**	0.09	.11*	< .01	.01	.06
14. Enjoy casual sex														--	.20**	.17**	.07	.08	.11*
15. SES: Unwanted contact															--	.73**	.72**	.73**	.01
16. SES: Verbal coercion																--	.76**	.78**	< .01
17. SES: Attempted rape																	--	.95**	-.02
18. SES: Rape																		--	-.05
19. Network density																			--

Note: ** $p < .01$; * $p < .05$

Table 4

Largest factor loadings based on exploratory factor analysis, 5-factor model with oblique rotation

Indicator	1	2	3	4	5	Latent factor
Rape myth acceptance	.589					Individual attitudes
Acceptance of interpersonal violence to women	.563					Individual attitudes
Adversarial sexual beliefs	.821					Individual attitudes
Hostility toward women	.721					Hostile masculinity
Sexual dominance	.476					Hostile masculinity
Peer date rape acceptance		.616				Peer attitudes
Peer justification of rape		.981				Peer attitudes
Number of sex partners			.493			Sexual promiscuity
Dates before sex			.507			Sexual promiscuity
Sex without love OK			.783			Sexual promiscuity
Enjoy casual sex			.790			Sexual promiscuity
Delinquency, scale 1				.896		Delinquency
Delinquency, scale 2				.716		Delinquency
Delinquency, scale 3				.878		Delinquency
SES: Unwanted contact					.974	Sexual coercion
SES: Verbal coercion					.991	Sexual coercion
SES: Attempted rape					.731	Sexual coercion
SES: Rape					.789	Sexual coercion

Note: SES: Sexual Experiences Survey.

Table 5

Rotated inter-factor correlations

Factor	1	2	3	4	5
1. Individual attitudes/hostile masculinity	--	.487	.188	.267	.153
2. Peer attitudes		--	.181	.177	.122
3. Delinquency			--	.323	.109
4. Sexual promiscuity				--	.101
5. Sexual coercion					--

Table 6

Measurement model fit statistics

Factor	<i>Chi-square</i>	<i>p-value</i>	<i>df</i>	<i>RMSEA</i>	<i>CFI</i>	<i>SRMR</i>
Individual attitudes	.09	.76	1	.01	1.00	.01
Delinquency	.02	.99	2	.01	1.00	.01
Hostile masculinity	< .01	.95	1	.01	1.00	.01
Sexual promiscuity	1.49	.47	2	.01	1.00	.01
Sexual coercion	.02	.88	1	.01	1.00	.01
Peer attitudes	< .01	.97	1	.01	1.00	.01

Note: Definitions and cut-offs for acceptable model fit: *df* = Degrees of Freedom; *RMSEA* = Root Mean Error of Approximation (< .08); *CFI* = Comparative Fit Index (> .90); *SRMR* = Standardized Root Mean Residual (< .10).

Table 7

Fit statistics for models not containing latent interaction terms

Model	<i>Chi-square</i>	<i>df</i>	<i>RMSEA</i>	<i>CFI</i>	<i>SRMR</i>
Confluence model	287.36	97	.076	.929	.080
Hypothesized peer network main effect model	404.43	140	.074	.918	.078
Final peer network main effect model	406.72	143	.074	.918	.080

Note: Definitions and cut-offs for acceptable model fit: *df* = Degrees of Freedom; *RMSEA* = Root Mean Error of Approximation (< .08); *CFI* = Comparative Fit Index (> .90); *SRMR* = Standardized Root Mean Residual (< .10).

Table 8

Fits statistics for model comparison

Model	<i>AIC</i>	<i>BIC</i>	<i>Log-likelihood</i>	<i>Free parameters</i>
Confluence model	12593.303	12804.056	-6241.651	55
Full peer network influence model	13746.354	14005.103	-6805.177	68
Final peer network influence model	13758.919	14002.448	-6815.460	64

Note: AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion.

APPENDIX B

FIGURES

Figure 1

Malamuth et al.'s (1995) confluence model

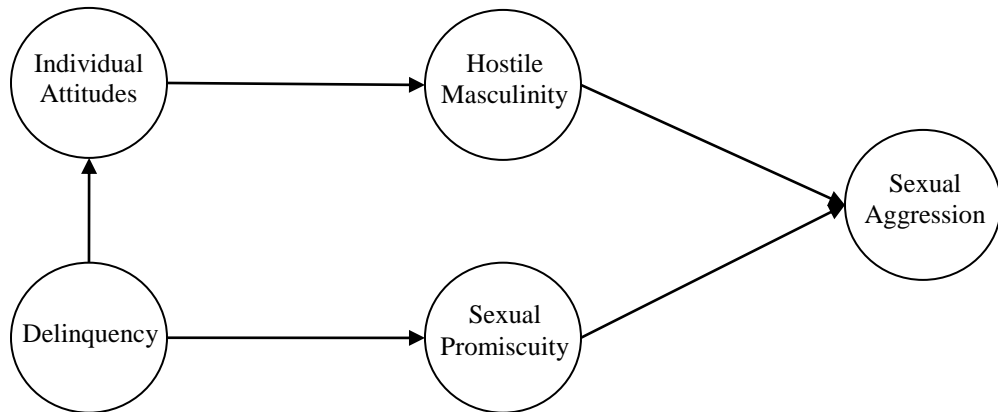
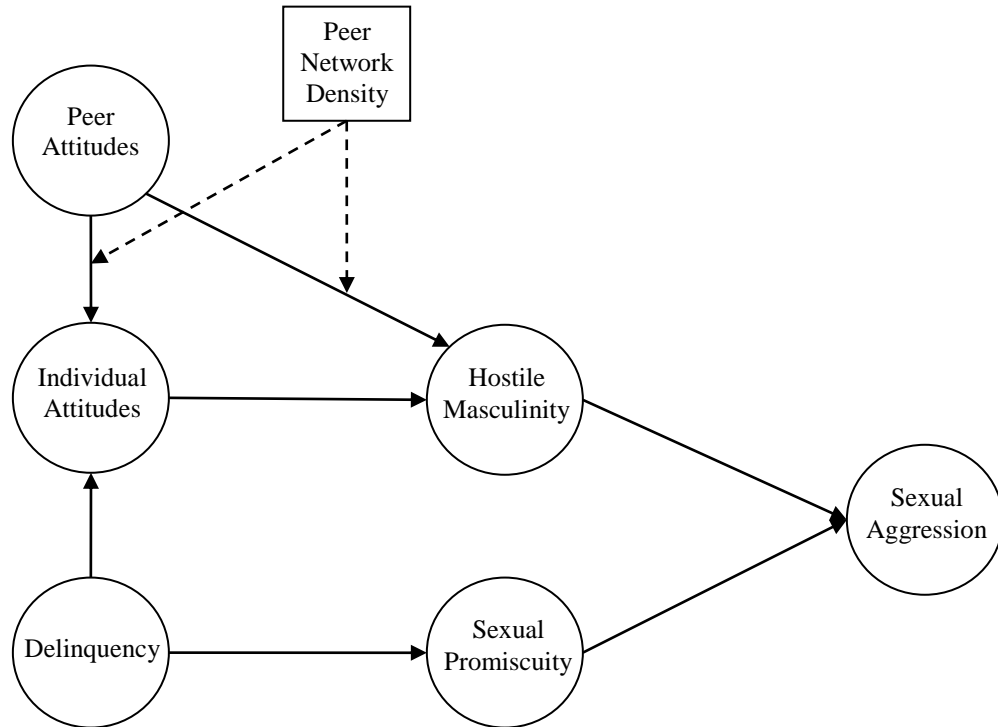


Figure 2

Malamuth et al.'s (1995) confluence model with peer constructs



Note. Dotted lines indicate hypothesized moderation.

Figure 3

Measurement model for individual attitudes factor

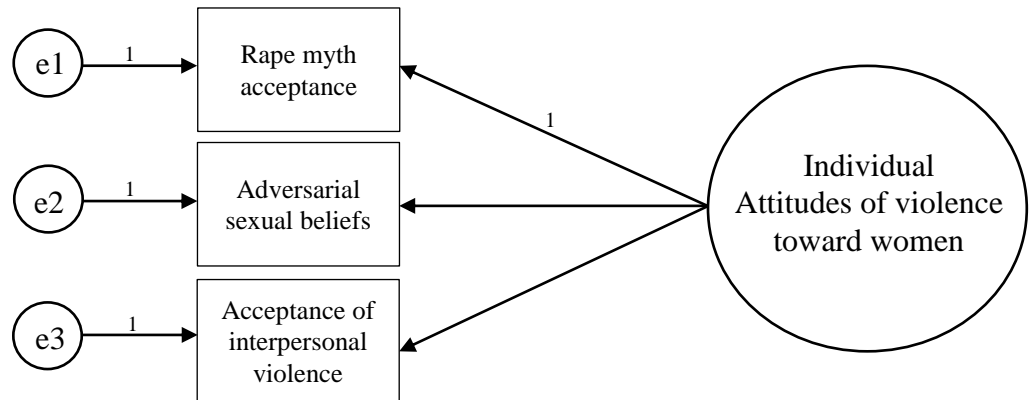


Figure 4

Measurement model for hostile masculinity factor

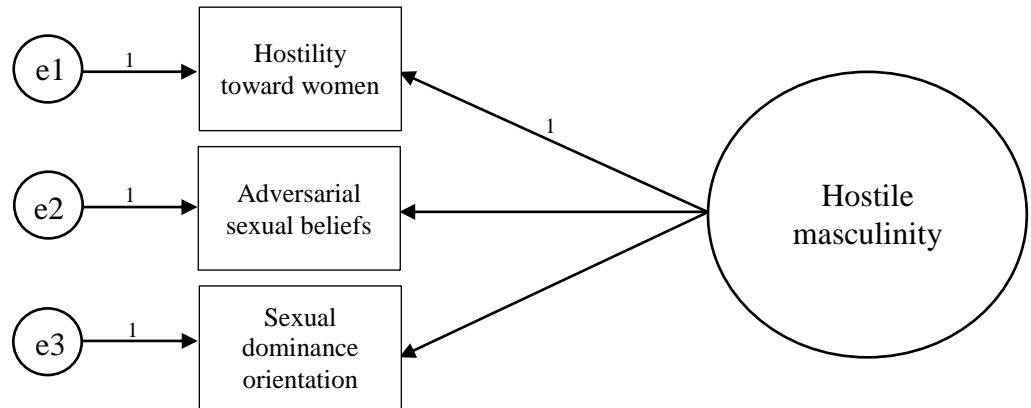


Figure 5

Measurement model for delinquency factor

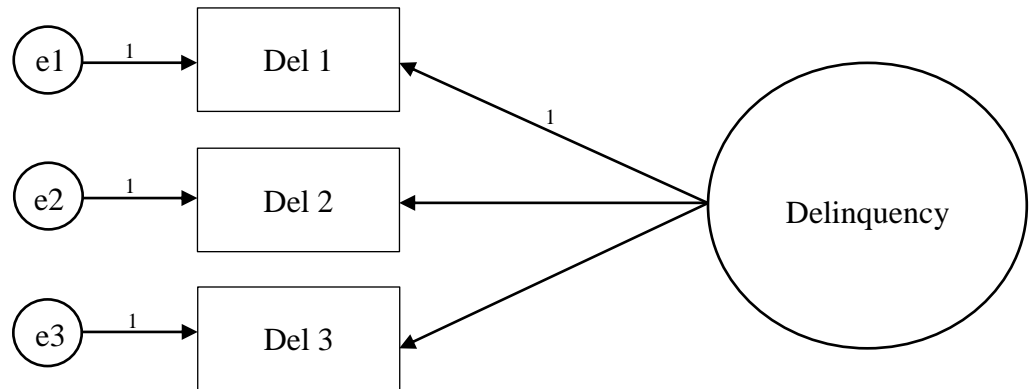


Figure 6

Measurement model for sexual promiscuity factor

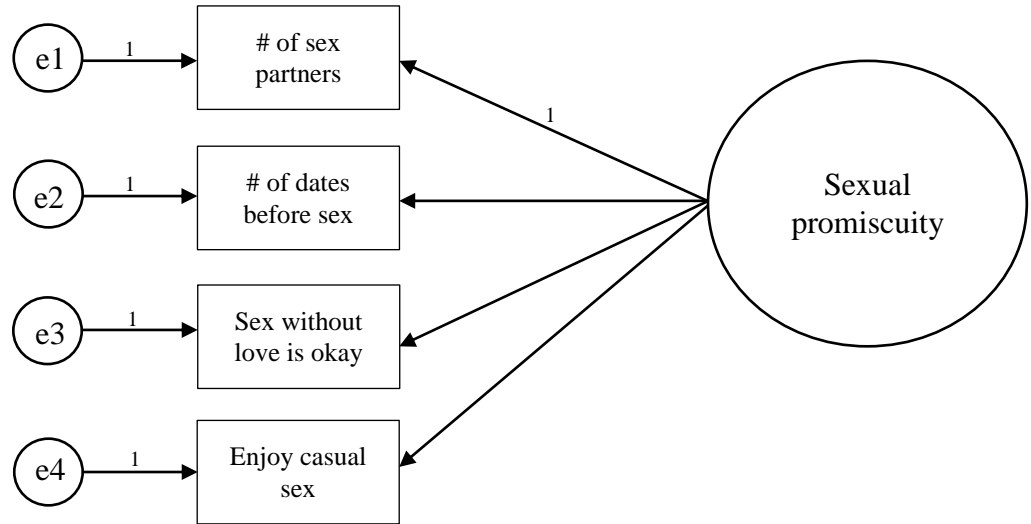


Figure 7

Measurement model for sexual coercion factor

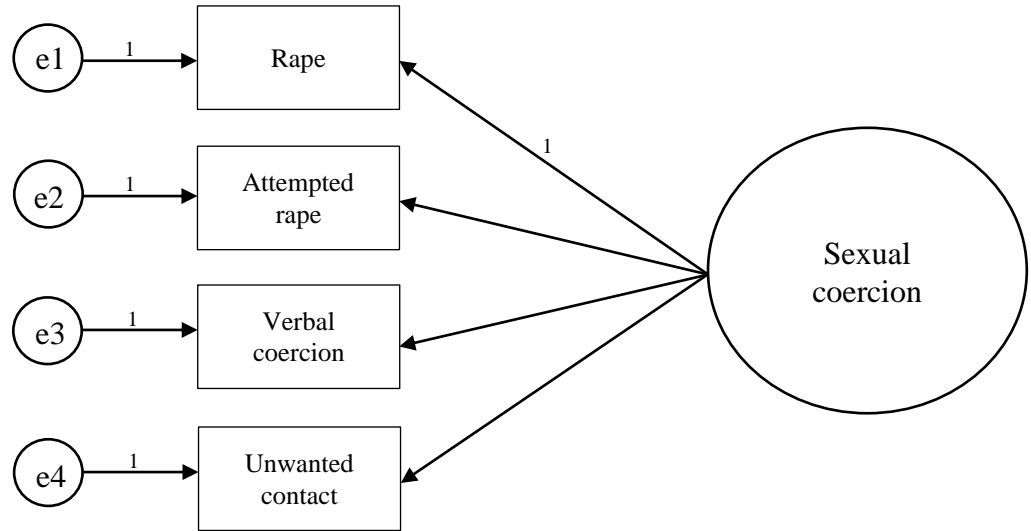
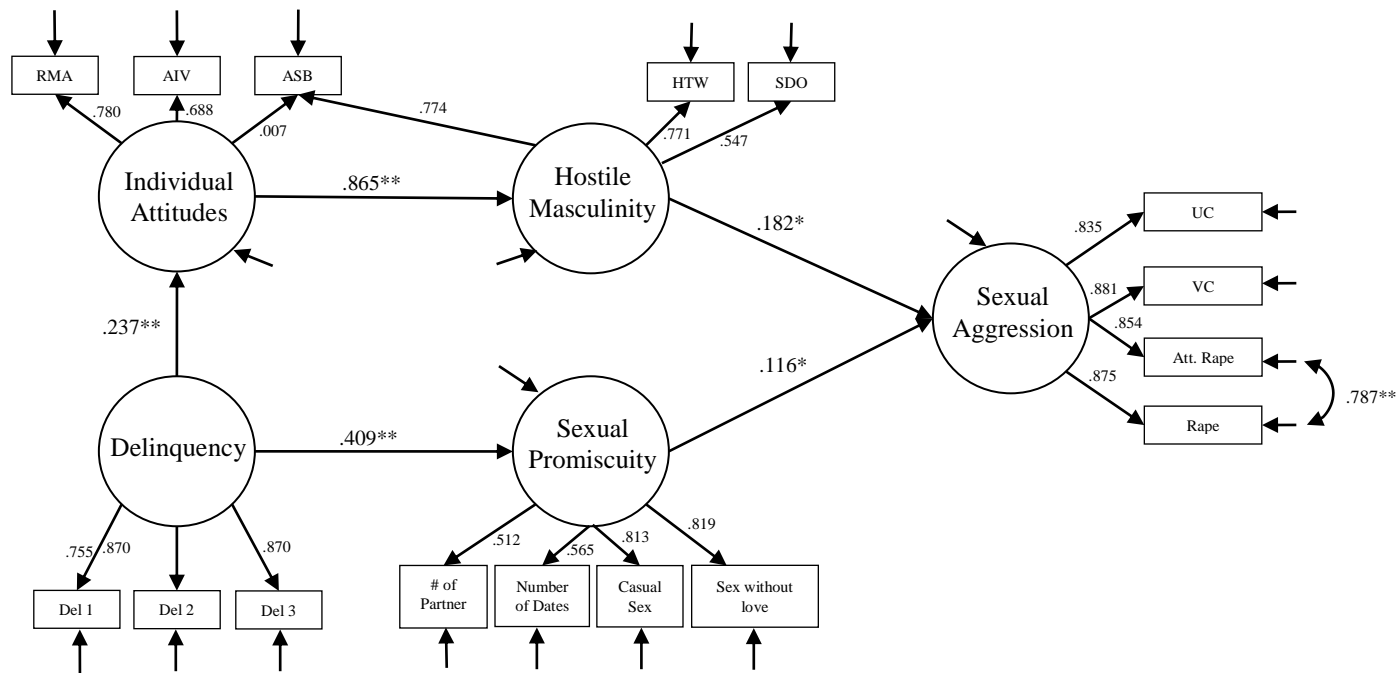


Figure 8

Malamuth et al.'s (1995) confluence model with standardized estimates



Note: * = $p < .05$; ** = $p < .001$; RMA = Rape Myth Acceptance, AIV = Acceptance of Violence toward Women, ASB = Adversarial Sexual Beliefs, HTW = Hostility toward Women, SDO = Sexual Dominance Orientation, UC = Unwanted Contact, VC = Verbal Coercion.

Figure 9

Measurement model for peer attitude factor

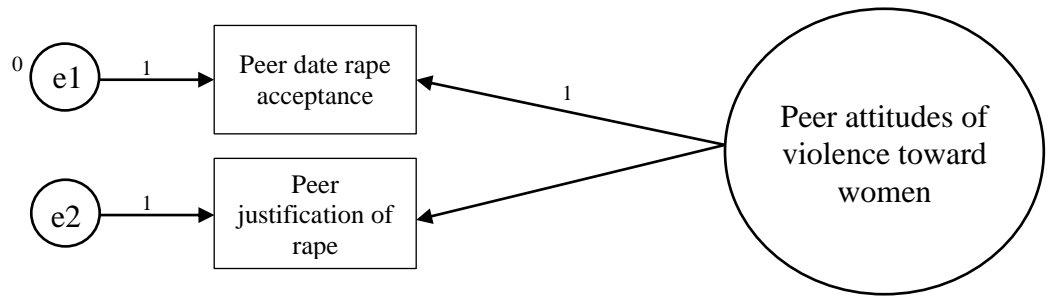
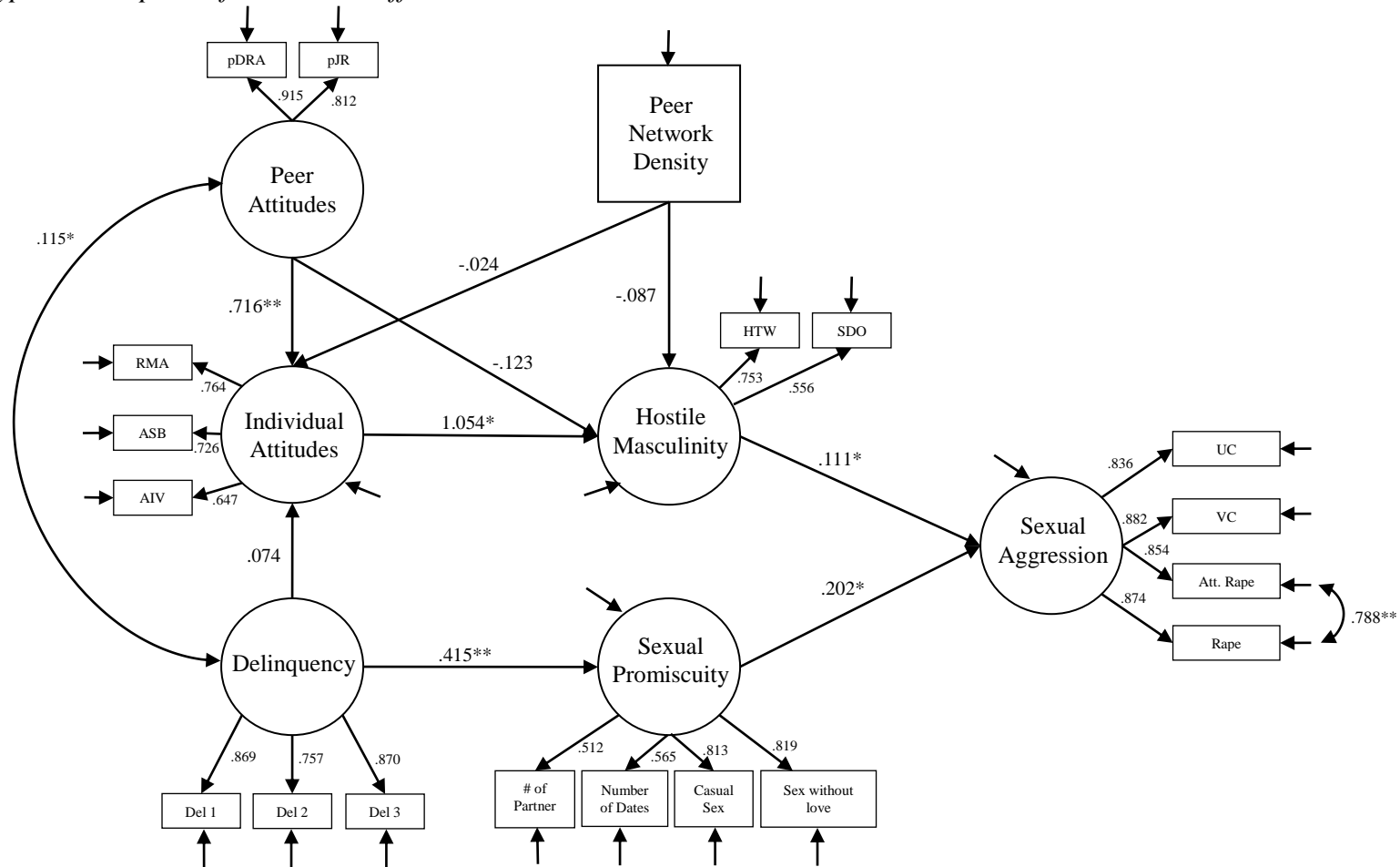


Figure 10

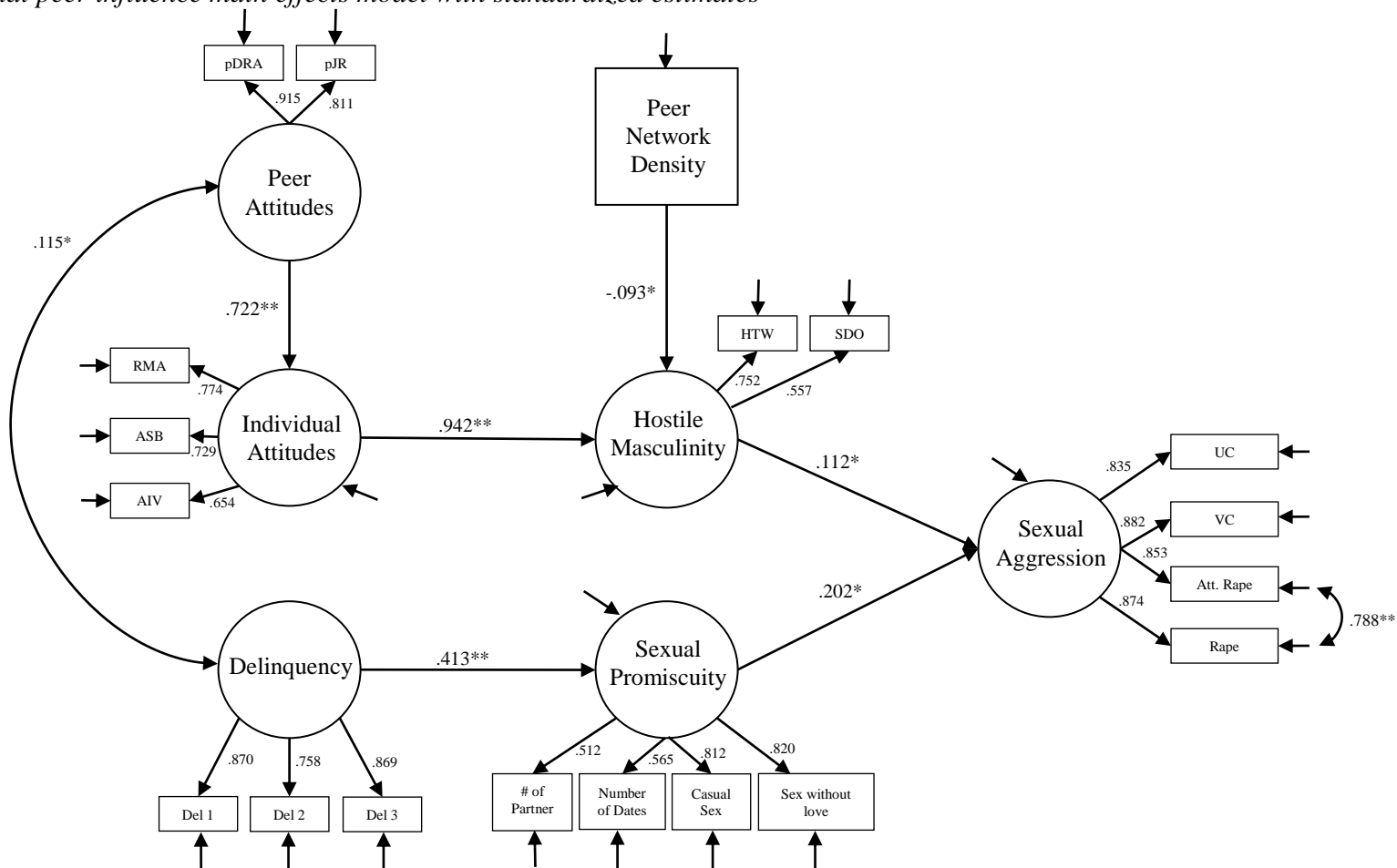
Hypothesized peer influence main effects model with standardized estimates



Note: * = $p < .05$; ** = $p < .001$; RMA = Rape Myth Acceptance, AIV = Acceptance of Violence toward Women, ASB = Adversarial Sexual Beliefs, HTW = Hostility toward Women, SDO = Sexual Dominance Orientation, UC = Unwanted Contact, VC = Verbal Coercion, pDRA = Peer Date Rape Acceptance, pJR = Peer Justification of Rape.

Figure 11

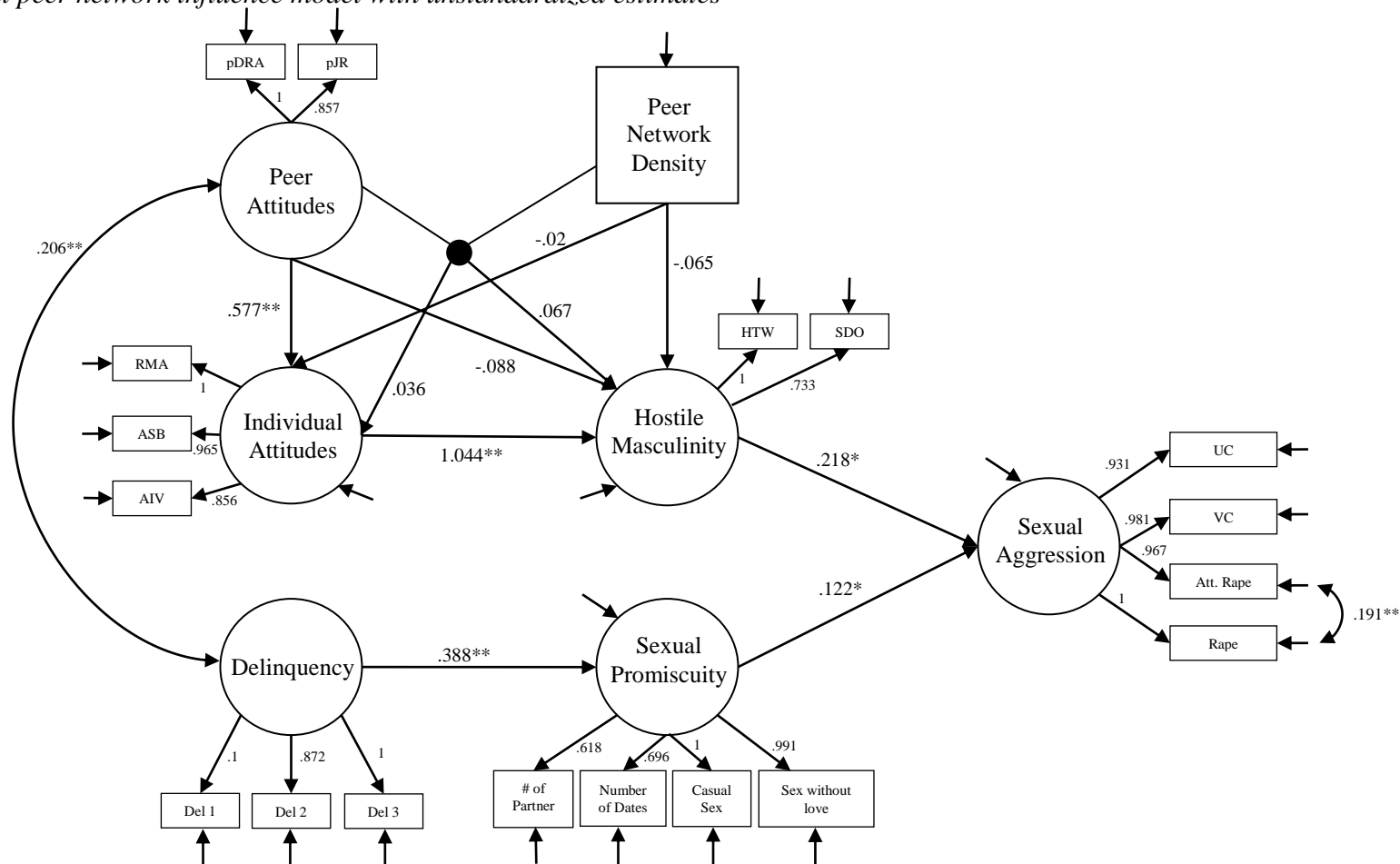
Final peer influence main effects model with standardized estimates



Note: * = $p \leq .05$; ** = $p < .001$; RMA = Rape Myth Acceptance, AIV = Acceptance of Violence toward Women, ASB = Adversarial Sexual Beliefs, HTW = Hostility toward Women, SDO = Sexual Dominance Orientation, UC = Unwanted Contact, VC = Verbal Coercion, pDRA = Peer Date Rape Acceptance, pJR = Peer Justification of Rape.

Figure 12

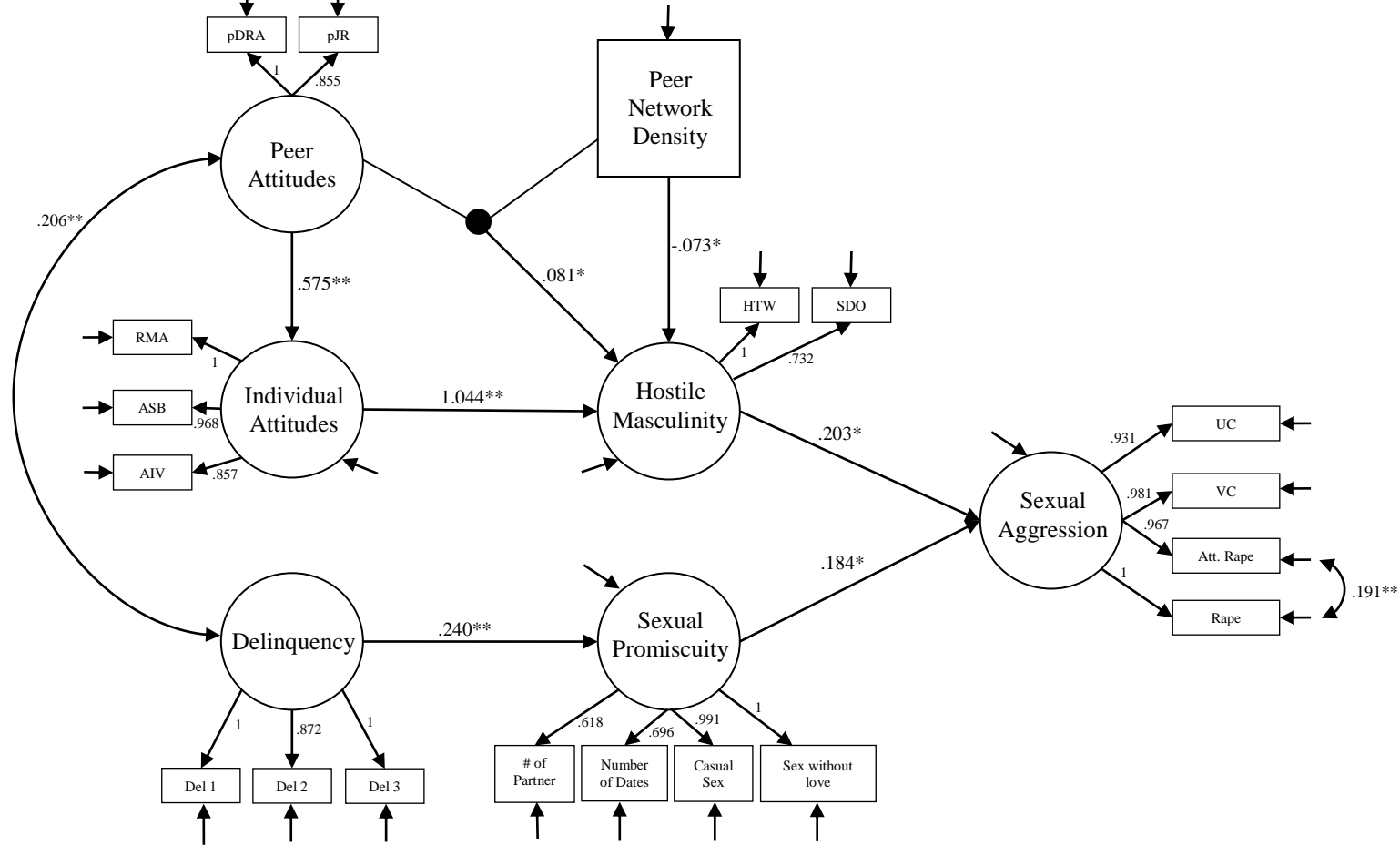
Full peer network influence model with unstandardized estimates



Note: Black dot indicates latent interaction term; * = $p \leq .05$; ** = $p < .001$; RMA = Rape Myth Acceptance, AIV = Acceptance of Violence toward Women, ASB = Adversarial Sexual Beliefs, HTW = Hostility toward Women, SDO = Sexual Dominance Orientation, UC = Unwanted Contact, VC = Verbal Coercion, pDRA = Peer Date Rape Acceptance, pJR = Peer Justification of Rape; standardized estimates are not available for models containing a latent interaction term.

Figure 13

Final peer influence model with unstandardized estimates



Note: Black dot indicates latent interaction term; * = $p \leq .05$; ** = $p < .001$; RMA = Rape Myth Acceptance, AIV = Acceptance of Violence toward Women, ASB = Adversarial Sexual Beliefs, HTW = Hostility toward Women, SDO = Sexual Dominance Orientation, UC = Unwanted Contact, VC = Verbal Coercion, pDRA = Peer Date Rape Acceptance, pJR = Peer Justification of Rape; standardized estimates are not available for models containing a latent interaction term.