The Company They Keep: How Peer Networks Influence Male Sexual Aggression

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Objective: The goal of the present study was to add to knowledge concerning predictors of sexually aggressive behaviors by extending an existing model of sexual aggression to include attitudinal and structural variables of participants’ peer groups. Method: A battery of questionnaires was administered to 341 college-aged men via web-based survey. Participants were asked to report their previous sexual behavior, attitudes toward women and sexual aggression, the strength of relationships within their peer network, and their peers’ attitudes toward women and sexual aggression. Results: Findings suggest perceived peer rape-supportive attitudes significantly influence individual members’ hostile attitudes toward women. Peer network density negatively predicted hostile attitudes—individuals with tightly knit peer groups tend to have less hostile attitudes toward women; there was a significant interaction between peer group density and perceived peer rape-supportive attitudes in predicting individuals’ hostile attitudes toward women—individuals in high-density, low-hostility peer groups had the lowest average levels of hostility toward women. Conclusion: The present findings suggest perceived peer attitudes and structure of peer networks influence individuals’ attitudes concerning violence and hostility toward women, factors long known to predict both physical and sexual violence against women. These findings may be implemented through peer-focused bystander intervention programs aimed at reducing sexual aggression.

Keywords: sexual aggression, peer influence, social networks, attitudes, aggression

Sexual aggression is a social phenomenon most people would rather ignore; but it is difficult to find anyone who has not been either directly or indirectly affected by this unfortunate reality. Researchers have been relatively unsuccessful in identifying a particular type of man who would or could perpetrate these acts, possibly because sexually aggressive men are quite a heterogeneous group (e.g., Groth, 1977; Knight & Prentky, 1990; Oxnam & Vess, 2006). And, in hindsight, almost exclusive reliance on intrapersonal variables may not have been the ideal strategy for the study of sexual aggression. Although these acts are most commonly perpetrated by an individual within an isolated situation, interpersonal variables may help researchers better understand sexual aggression. Polk 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, as cited in Ageton, 1983, p. 388). To this point, however, peer influences have not been integrated into our empirical understanding of sexual aggression; an omission addressed by the current research.

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

Relatively little research has explored associations between peer influence and individual sexually aggressive behavior; the research that has been conducted, however, indicates a strong association. There is, in fact, a relation between levels of peer and individual sexual aggression (Alder, 1985; Gwartney–Gibbs, Stockard, & Bohmer, 1989). Simply being a member of a male peer group increases the likelihood of sexually aggressive behavior (Berkowitz, Burkhart, & Bourg, 1994). Although these findings seem clear cut, researchers continue to puzzle over the nature of this relationship. College men living in all-male dormitories are more likely than other men to endorse rape myths (Schaeffer & Nelson, 1993). Members of peer groups that objectify women tend to engage in more severe sexual aggression, as compared with men who do not associate with this type of peer group (Koss & Dinero, 1989). Research conducted by Schwartz and DeKeseredy (1997, 2000) found that male sexually aggressive behavior, in part, is a function of peer support of intimate partner violence. After interviewing 341 male college students, Kanin (1967) found that sexually aggressive men—as compared with nonsexually 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. This assumption has been included in theoretical models of sexual aggression (e.g., Schwartz & DeKeseredy, 1997, 2000), but, to date, peer attitudes have not been integrated into empirical models of sexual aggression (i.e., Knight & Sims–Knight’s, 2004; Malamuth Sockloskie, Koss, & Tanaka, 1991). Malamuth, Sockloskie, Koss, and Tanaka’s (1991) confluence model has been replicated and extended by several research teams (e.g., Anderson & Anderson, 2008; Parkhill & Abbey, 2008) and will serve as the framework for the current analyses, because it is the only published model that (1) is empirically testable in its entirety; (2) is strictly focused on sexual aggression toward adult women; and (3) was developed using data from a nonincarcerated population.

The Confluence Model of Sexual Aggression

The confluence model hypothesizes two pathways—impersonal sex and hostile masculinity—leading to sexually aggressive behavior (Malamuth et al., 1991). In the initial iteration of the confluence model, the impersonal sex pathway was indicative of high levels of sexual activity with little emotional attachment to one’s partner on the part of the male, also termed “sociosexuality” (Mouilso & Calhoun, 2012). The hostile masculinity pathway was comprised of two attitudinal constructs: attitudes supporting violence and a more specific construct reflecting hostile masculine attitudes. Both the impersonal sex and hostile masculinity pathways were significantly influenced by adolescence delinquency; delinquency, in turn, was influenced by negative childhood experiences, such as child abuse or witnessing domestic violence.

The confluence model utilizes individual-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 aggression at the individual level. Content referring to the attitudes and behaviors found predictive of sexual aggression and process referring to the manner in which these variables are organized to form a person-level model of sexual aggression. As noted by Malamuth, however, “such research may also benefit from more general analyses of social influence” (Malamuth et al., 1991, p. 680). Although Malamuth wrote this passage over 20 years ago, the confluence
model has yet to be extended to address any form of social influence on sexual aggression; replications and extensions continue to use only individual-level variables.

**Social Networks and Social Influence**

Developed and utilized by social scientists of various disciplines over the past 50 years, the social network perspective has been almost entirely absent from research on violence against women (Wasserman & Faust, 1994). Social network analysis offers an opportunity to explore many of the same social phenomena that violence against women researchers have studied for decades, but from a different theoretical, methodological, and analytic standpoint. When attempting to explain or predict individual behavior, the social network perspective focuses on an individual’s relationship dynamics as opposed to intraindividual 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 often disregarded by social scientists (Wasserman & Faust, 1994).

Structural variables within social networks can affect how information is transferred between people and the extent to which people are influenced by this information (Collins, 1988). 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 Éspelage, Wasserman, & Fleisher, 2007). More specifically, a focus of the current research is peer network density. For the current purposes, peer network density is defined as the strength of relationships among participants’ close male friends. This will serve as an indicator of how tightly knit participants’ peer groups are.

Numerous published reports have linked social influences to attitude development and attitude strength (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. Peer influences on key attitudes may partially account for the relationship between peer and individual sexual aggression (Alder, 1985; Gwartney-Gibbs, Stockard, & Bohmer, 1989) and would generally endorse peer-support interpretations of sexual aggression (Schwartz & DeKeseredy, 1997, 2000). Recent findings suggest bystanders weigh peer attitudes toward sexual aggression heavily when making their decision whether or not to intervene in a sexually aggressive situation (Brown & Messman-Moore, 2010); this further supports the theme that men look to their peers for information on the degree to which sexually aggressive behavior is acceptable.

**The Current Research**

Based on previous findings, attitudes of men’s close friends should predict their sexually aggressive attitudes and behaviors; this relation, at least in part, should be a function of the density of their peer group. Highly hostile and highly dense peer groups should influence individual members to also hold highly hostile attitudes toward women. By the same token, high-density, low-hostility peer groups should influence members to have low levels of hostility. 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) Do peer attitudes interact with peer network density to predict individual attitudes? The hypothesized peer influence main effects model will include the impersonal sex and hostile masculinity pathways of the confluence model with the addition of constructs representing perceived peer attitudes and peer network density, each predicting the two attitudinal constructs within the hostile masculinity pathway. The hypothesized peer influence interaction model will include the same constructs with the addition of an interaction term between perceived peer attitudes and peer network density, also predicting both constructs in the hostile masculinity pathway. In accordance with recent published extensions (e.g., Anderson & Anderson, 2008; Parkhill & Abbey, 2008), the current project will extend the confluence model without the childhood risk factor or social isolation constructs.
Method

Participants

Participants were recruited from a participant pool at a medium-sized public university. The group of men who met inclusion criteria and consented to participate in the study \( (N = 341) \) constituted a large sample size for structural equation modeling per Kline (2011). Participants completed a series of web-based surveys in exchange for course credit. 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.

Procedure

Prospective participants signed-up for the study through a web-based research participant management system; per departmental regulation, the only information prospective participants received concerning the study prior to signing-up was the name of the person overseeing the project, the location of the study (online, in this case), and the inclusion criteria: “Participants must be male and at least 18 years of age.” Prospective participants were immediately given a link to the web-based survey after signing-up; upon following the link, they were immediately screened for gender and age—in case they did not mind the inclusion criteria—males ages 18 years of age and older were forwarded to the informed consent page to learn about the study. Men who consented to participate were forwarded to the measures detailed in the next section. Twenty-five prospective participants were immediately disqualified because they were not males and two because they were under the age of 18. After reading the informed consent materials, 10 individuals declined to participate in the study.

Each measure was presented on a separate page and contained specific instructions for interpreting and responding to survey items. Items pertaining to individual and peer attitudes were counterbalanced to account for order effects. No significant effects were found related to order of measures. Peer attitudes were collected via participant self-report; this allowed for the measurement of participant perceptions of peer attitudes rather than actual peer attitudes. The literature concerning social influences on attitudes about sex suggests perceptions of others’ sexual attitudes and behaviors, rather than peers’ actual attitudes and behaviors, directly influence individual attitudes and behaviors (Chia & Lee, 2008; Cohen & Shotland, 1996).

Constructs and Measures

Delinquency. Three indicators of delinquency were used: the Self-reported Delinquency Scale developed by Elliott, Huizinga, and Ageton (1985), and two separate questions developed by Malamuth et al. (1991). The Self-reported Delinquency Scale is a 21-item measure that asks respondents how many times since age 14 they have engaged in specific delinquent behaviors such as damaging property, stealing, selling drugs, cheating, and fighting. Participants responded to each item on 5-point scales ranging from “never” to “more than 10 times.” Composite scores were calculated by averaging participants’ responses within the scale. The two questions developed by Malamuth et al. (1991, p. 673) are “When you were growing up, how many of your friends, if any, got in trouble with the law for minor offenses (e.g., fighting or running away)” and “How many times, if any, did you run away from home for more than 24 hours?” Participants responded to each of these items on 5-point scales ranging from “no” to “yes, more than 5 times.” Raw scores from both of these questions in addition to composite scores from the Self-reported Delinquency Scale were used to indicate the delinquency construct.

Attitudes supporting violence. 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 individuals’ 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. A sample item is “A man’s got to show the woman who’s boss right from the start or he’ll end up henpecked.” The AIV contains 6 items that measure the extent to which men support violent behavior within intimate relationships. A sample item is “Sometimes the only way a man can get
a cold woman turned on is to use force.” 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.” Participants responded to all items within these three measures on 7-point scales ranging from “strongly disagree” to “strongly agree.” Composite scores were calculated by averaging participants’ responses within each scale.

**Hostile masculinity.** The Sexual Dominance Scale (SDO; Nelson, 1979), the Hostility Toward Women Scale (HTW; Check, 1985), and the Adversarial Sexual Beliefs Scale (ASB; Burt, 1980) were used to operationalize the hostile masculinity construct. It should be noted that the ASB, described above, was also originally used to indicate both the attitudes supporting violence and hostile masculinity constructs of the confluence model (Malamuth et al., 1991). 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. A sample item is “I have sex because: I enjoy the feeling of having someone in my grasp.” The HTW scale is a 21-item attitudinal measure of anger specifically directed at women. A sample item is “I feel that many times women flirt with men just to tease or hurt them.” Participants responded to all items within these three measures on 7-point scales ranging from “strongly agree” to “strongly disagree.” Composite scores were calculated by averaging participants’ responses within each scale.

**Impersonal sex.** Four items indicated impersonal sex. The first two were questions: “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?” (reverse-coded for all inferential analyses). The third and fourth 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.” Scores from each of these four items were used as indicators of the impersonal sex construct.

**Peer network density.** A modified version of the procedure used by Green, Richardson, and Lago (1996) was used to assess peer network density. 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).” Answers to the aforementioned statement were forwarded into a subsequent series of questions that asked participants to “Rate the relationship strength of each of the following pairs of peers with 0 meaning they have never met and 100 meaning that they are extremely close friends.” This statement was followed by all 10 possible pairs of the five peers previously listed by participants. Peer network density was calculated as the average relationship strength of participants’ peers; this observed variable represented peer network density in the modeling process.

**Perceived peer attitudes.** Two variables measured by the Justification of Rape Scale (JRS; Burgess, 2007) and the attitudes section of the Date Rape Attitudes Survey (DRAS; Lancier & Elliot, 1997) were used to indicate the perceived peer attitudes construct. These two measures were chosen in an effort to prevent projection or anchoring effects because they differ from the measures used to assess the individual attitudes supporting violence and hostile masculinity constructs. The instructions of the JRS and the DRAS were modified 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 participant’s five friends were forwarded to 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 found to strongly relate to sexually aggressive behavior and proclivity (Burgess, 2007). A sample item is “Using aggression or physical restraint is a legitimate way to acquire sex from a certain type of woman.” 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.” Participants responded to statements on both the JRS and DRAS on 7-point scales with responses ranging from “strongly agree” to “strongly disagree.” Composite scores were calculated by averaging participants’ responses within each scale.

Sexual aggression. Sexual aggression was assessed using the revised version of the Sexual Experiences Survey for perpetration (SES-R-P; Koss et al., 2007). The current study employed the entire SES-R-P short form plus the alcohol- and drug-related items as well as the multiple perpetrator item from the long form, which totaled 56 items. The SES-R-P measured the frequency and severity of men’s sexual experiences. Based upon participants’ responses to the SES-R-P, sexual aggression was modeled as a latent factor. Four manifest variables were constructed based on men’s frequency of each form of sexual aggression—unwanted sexual contact, verbal coercion, attempted rape, or rape—as proposed by the SES Collaborative (Koss et al., 2007). A sample act measured by this survey is “I had oral sex with a woman or had a woman perform oral sex on me without her consent by” and a sample tactic is “taking advantage when they were too drunk, high, or out of it to stop what was happening”; this sample pairing constitutes rape. Men were instructed to report “the number of times each experience has happened to you since your 14th birthday” with response options ranging from “zero” to “three or more times.”

Results

Data Analysis Strategy

After descriptive statistics and internal consistency scores were calculated (see Table 1), variables were centered around their means and fit to structural equation models (SEM) using Mplus version 5.1 (L. K. Muthén & B. O. Muthén, 1998–2010) to assess the measurement models 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. SEM corrects for measurement error, allows structural relations between both latent and observed variables, and provides statistics relative to overall model fit (Kline, 2011).

Table 1
Means, Standard Deviations, Ranges, and Reliability Estimates for Each Indicator

<table>
<thead>
<tr>
<th>Variable</th>
<th>$M$</th>
<th>$SD$</th>
<th>Range</th>
<th>$\alpha$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acceptance of interpersonal violence</td>
<td>1.58</td>
<td>0.86</td>
<td>0–4</td>
<td>.61</td>
</tr>
<tr>
<td>toward women</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rape myth acceptance</td>
<td>1.33</td>
<td>0.66</td>
<td>0–3.16</td>
<td>.86</td>
</tr>
<tr>
<td>Adversarial sexual beliefs</td>
<td>2.49</td>
<td>0.96</td>
<td>0–5.67</td>
<td>.81</td>
</tr>
<tr>
<td>Hostility toward women</td>
<td>2.42</td>
<td>0.71</td>
<td>.10–4.30</td>
<td>.87</td>
</tr>
<tr>
<td>Sexual orientation</td>
<td>2.69</td>
<td>1.24</td>
<td>0–5.63</td>
<td>.88</td>
</tr>
<tr>
<td>verbal coercion</td>
<td>2.44</td>
<td>.79</td>
<td>.29–4.52</td>
<td>.86</td>
</tr>
<tr>
<td>attempted rape</td>
<td>1.31</td>
<td>.99</td>
<td>0–4.60</td>
<td>.86</td>
</tr>
<tr>
<td>Delinquency scale</td>
<td>0.66</td>
<td>0.58</td>
<td>0–3.14</td>
<td>.86</td>
</tr>
<tr>
<td>(friends in trouble)</td>
<td>1.44</td>
<td>1.25</td>
<td>0–4</td>
<td></td>
</tr>
<tr>
<td>Delinquency (run away)</td>
<td>0.14</td>
<td>0.57</td>
<td>0–4</td>
<td></td>
</tr>
<tr>
<td>Number of sexual partners</td>
<td>3.91</td>
<td>4.86</td>
<td>0–20</td>
<td></td>
</tr>
<tr>
<td>Number of dates before sex</td>
<td>13.81</td>
<td>9.10</td>
<td>0–35</td>
<td></td>
</tr>
<tr>
<td>Sex without love</td>
<td>2.90</td>
<td>2.12</td>
<td>0–6</td>
<td></td>
</tr>
<tr>
<td>Enjoy casual sex</td>
<td>2.40</td>
<td>2.05</td>
<td>0–6</td>
<td></td>
</tr>
<tr>
<td>SES: Unwanted contact</td>
<td>0.99</td>
<td>2.78</td>
<td>0–24</td>
<td>.85</td>
</tr>
<tr>
<td>SES: Verbal aggression</td>
<td>0.45</td>
<td>1.80</td>
<td>0–18</td>
<td>.87</td>
</tr>
<tr>
<td>SES: Attempted rape</td>
<td>0.60</td>
<td>4.03</td>
<td>0–54</td>
<td>.97</td>
</tr>
<tr>
<td>SES: Rape</td>
<td>0.69</td>
<td>4.55</td>
<td>0–54</td>
<td>.98</td>
</tr>
<tr>
<td>Network density</td>
<td>57.69</td>
<td>20.95</td>
<td>7.6–100</td>
<td>.81</td>
</tr>
</tbody>
</table>

Note. SES = Sexual Experiences Survey.
A nonsignificant chi-square ($p > .05$), root mean square error of approximation (RMSEA) below .05, comparative fit index (CFI) and Tucker-Lewis index (TLI) above .95, and a standardized root-mean-square residual (SRMR) of below .08 all suggest a model fits data well. RMSEA below .08, CFI and TLI above .90, SRMR below .10 all suggest a model adequately fits data. It should be noted that the chi-square statistic is too liberal when applied to large samples.

Although SEM has become quite common across academic disciplines, methodologists continue to develop this approach. An example of this continual development is our relatively recent ability to model latent interaction terms. This innovation allows researchers to test interactions between latent variables, or between latent and observed variables. Some of the models tested in the current research include a latent interaction variable calculated through a modified version of the latent moderated structural equation method (Klein & Moosbrugger, 2000), known as quasi-maximum likelihood estimation (QML; Klein & Muthén, 2007). Of the methods available to model nonlinear relations within a latent variable framework, the QML method is thought to be the most accurate because it uses the expectation-maximization algorithm to produce maximum likelihood estimates that take the inherent non-normality of latent product terms into account (Klein & Moosbrugger, 2000; Kline, 2011). Approximate fit indices and model chi-square statistics are not available for random-effects models containing latent interaction terms using the QML method because of non-normality (Klein & Moosbrugger, 2000; Muthén, 2012). Fit of a model containing a latent interaction term can be assumed adequate when (1) fit of the model without the interaction is adequate and (2) all structural paths associated with the interaction are statistically significant (Muthén, 2004).

Preliminary Analyses

Approximately 25% of the men reported engaging in some form of sexual aggression with 11.4% reporting behavior that meets legal definitions for either attempted rape or rape; these rates correspond with previously published findings (Koss et al., 1987; White & Smith, 2004). Over 5% of the men reported participating in an act that met legal definitions of either attempted rape or rape as part of a group of two or more people. Notably, frequencies of attempted and completed rape were highly correlated ($r = .95$); this was addressed during the modeling process.

Although perceived peer attitudes were moderately correlated with all five individual-level attitudes indicating the hostile masculinity pathway (see Table 2), two distinct factors emerged when all seven indicators were analyzed in an exploratory factor analysis; individual attitudes indicators loaded most strongly onto one factor and perceived peer attitude indicators loaded most strongly onto the other. This suggests participants actually reported perceptions of their peers’ attitudes when prompted, not their own attitudes. Peer network density was a significant, positive correlate of responses to the impersonal sex indicator “enjoy casual sex” and responses to delinquency questions concerning running away from home and friends getting into trouble during adolescence; it negatively correlated with all indicators of hostile masculinity, individual attitudes, and perceived peer attitudes, although none of these relations reached conventional significance levels: $p < .05$.

Structural Equation Models

As a final preliminary analysis, Malamuth et al.’s confluence model of sexual aggression (1991)—which included latent constructs indicating delinquency, impersonal sex, attitudes supporting violence, hostile masculinity, and sexual aggression—showed adequate fit ($\chi^2 = 287.36, df = 98, p < .05$, RMSEA = .076, 90% confidence interval [CI] = .063–.084, CFI = .93, TLI = .91, and SRMR = .08). Adversarial Sexual Beliefs did not load strongly onto the hostile masculinity construct ($r^2 > .01$); therefore, it was only used to indicate the individual attitudes construct moving forward. Also, the errors associated with the rape and attempted rape indicators of sexual aggression were allowed to correlate. These two modifications improved model fit ($\chi^2 = 227.42, df = 98, p < .05$, RMSEA = .063, 90% CI = .052–.073, CFI = .95 TLI = .94, and SRMR = .06).

To address the first substantive research question—What is the relation between peer and individual attitudes toward women, sex, and sexual aggression?—a peer influence main effects model was estimated by adding the latent variable repre-
Table 2
Correlations Among Indicators

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<th>16</th>
<th>17</th>
<th>18</th>
<th>19</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Acceptance of interpersonal violence</td>
<td>.54**</td>
<td>.47**</td>
<td>.44**</td>
<td>.31**</td>
<td>.42**</td>
<td>.40**</td>
<td>.16**</td>
<td>.03</td>
<td>.07</td>
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<td>.16**</td>
<td>.07</td>
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<tr>
<td>2. Rape myth acceptance</td>
<td>—</td>
<td>.53**</td>
<td>.51**</td>
<td>.39**</td>
<td>.54**</td>
<td>.57**</td>
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<td>.10</td>
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<td>.05</td>
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<td>3. Adversarial sexual beliefs</td>
<td>—</td>
<td>.61**</td>
<td>.42**</td>
<td>.45**</td>
<td>.32**</td>
<td>.12**</td>
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<td>.34**</td>
<td>.19**</td>
<td>0.09</td>
<td>.02</td>
<td>.03</td>
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<tr>
<td>4. Hostility toward women</td>
<td>—</td>
<td>.42**</td>
<td>.45**</td>
<td>.35**</td>
<td>.19**</td>
<td>.20**</td>
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<td>5. Sexual dominance orientation</td>
<td>—</td>
<td>.37**</td>
<td>.28**</td>
<td>.19**</td>
<td>.12**</td>
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<td>6. Peer date rape acceptance</td>
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<td>7. Peer justification of rape</td>
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<td>8. Delinquency 1</td>
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<td>.76**</td>
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<td>9. Delinquency 2</td>
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<td>10. Delinquency 3</td>
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<td>11. Number of sexual partners</td>
<td>—</td>
<td>.32**</td>
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<td>12. Number of dates before sex</td>
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<td>.45**</td>
<td>.46**</td>
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<td>13. Sex without love</td>
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<td>.67**</td>
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<td>14. Enjoy casual sex</td>
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<td>15. SES: Unwanted contact</td>
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<td>16. SES: Verbal aggression</td>
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<td>17. SES: Attempted rape</td>
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<td>18. SES: Rape</td>
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<td>19. Network density</td>
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Note. SES = Sexual Experiences Survey.
* p < .05. ** p < .01.
senting peer attitudes and manifest variable representing peer network density, both predicting individual attitudes and hostile masculinity. Perceived peer attitudes positively predicted attitudes supporting violence but did not significantly predict hostile masculinity. Peer network density negatively predicted hostile masculinity but did not significantly predict individual attitudes. The initial peer influence main effects model fit the data adequately well ($\chi^2[143, 341] = 347.89, p < .05$, RMSEA = .066, 90% CI = .057–.074, CFI = .93, TLI = .91, and SRMR = .07). After trimming nonsignificant paths, one at a time, overall fit of the final peer influence main effects model was almost identical to the initial model ($\chi^2[145, 341] = 348.59, p < .05$, RMSEA = .065, 90% CI = .056–.074, CFI = .93, TLI = .91, and SRMR = .07).

To address the second research question—Do peer attitudes interact with peer network density to predict individual attitudes?—a peer influence interaction model was estimated by adding the latent interaction between perceived peer attitudes and peer network density, predicting individual attitudes and hostile masculinity. Although the paths from perceived peer attitudes to hostile masculinity and from peer network density to individual attitudes were cut from the final peer influence main effects model, they were reintroduced to the peer influence interaction model to specifically assess the interactive effects of the peer-level constructs. The latent interaction positively predicted individual hostile masculinity but did not significantly predict individual attitudes; perceived peer attitudes continued to positively predict individual attitudes and peer network density continued to negatively predict hostile masculinity; all of the confluence model pathways remained significant; and delinquency and perceived peer attitudes significantly covaried.

Approximate fit indices are not available for random-effects models containing latent interaction terms estimated using the QML method (L. K. Muthén, February 07, 2012); however, fit can be inferred through comparing the loglikelihood value of this model with that of the initial peer influence main effects model, reported above. Model fit is significantly improved by adding the latent interaction ($-2\log\text{lielihood difference} = 4.36, p < .05$); this is also indicated by the significant interaction effect. The nonsignificant paths from peer network density and the interaction term to individual attitudes were removed from the final peer influence interaction model (see Figure 1); but the path

Figure 1. Final peer influence interaction model with unstandardized estimates. Note: Black dot indicates latent interaction term ($^* p < .05$, $^{**} p < .01$, $^{***} p < .001$). Standardized estimates are not available for models containing a latent interaction term.
from peer attitudes to hostile masculinity, though nonsignificant, was left in the final model in order to correctly estimate the interactive effect on hostile masculinity.

**Mediation and moderation within the final peer network influence model.** There was a positive and significant indirect effect between perceived peer attitudes and hostile masculinity via attitudes supporting violence ($b = .57$, standard error $SE = .12, p < .001$); the direct effect between perceived peer attitudes and hostile masculinity is slightly negative, leaving a positive and significant total effect ($b = .46$, $SE = .07, p < .001$). This indicates that essentially all of the influence the perceived peer attitudes construct has on hostile masculinity is mediated by attitudes supporting violence.

Simple slopes were calculated to probe the significant latent interaction. To accomplish this, latent factor scores were saved and used in a multiple linear regression with scores of peer network density, perceived peer attitudes, and their interaction predicting individual hostile masculinity. The resulting coefficients were used to test the effect of peer network density on individual hostile masculinity at $-1$ standard deviation (SD), mean, and $+1$ SD levels of perceived peer attitudes. The simple slopes (see Figure 2) were negative and significant for both average and low levels of perceived peer attitudes ($b_{-1SD} = -.18, SE = .03, p < .001$; $b_{-1SD} = -.08, SE = .02, p < .01$) but nonsignificant for high levels ($b_{+1SD} = .03, SE = .03, p = .46$). Although this interaction could also be interpreted as peer group density moderating the relation between perceived peer and individual attitudes, the current interpretation allows readers to see the protective influence of peer network density on individuals across levels of peer group acceptance of sexual aggression. This interpretation is thought to have greater clinical and policy implications, to be discussed shortly.

**Discussion**

The current study sought to answer two research questions: (1) What is the relation between peer and individual attitudes toward women, sex, and sexual aggression? and (2) Do peer attitudes interact with peer network density to predict individual attitudes? These questions were addressed by extending Malamuth et al.’s confluence model of sexual aggression (1991) to include perceived peer attitudes concerning sexual aggression and peer network density. In the final peer influence interaction model, perceived peer attitudes positively predicted attitudes supporting violence against women, peer group density negatively predicted hostile masculinity, and perceived peer attitudes and peer network density interacted to positively predict hostile masculinity. The positive relation between perceived peer attitudes and hostile masculinity is mediated by attitudes supporting violence. The significant interaction can be interpreted as the relation between peer network density and hostile masculinity varying as a function of perceived peer attitudes.

It is not surprising that peers share similar ideas concerning sexual aggression and that peer network density plays a role in this relation. These results correspond with more general findings concerning peer influence on attitudes among adolescents (Harton & Latané, 1997), and the relations between peer network structure and individual attitudes (Espelage et al., 2007). The negative main effect of peer network density on individual hostile masculinity suggests highly dense peer groups generally have a positive influence on members, in that...
these members report less hostile masculinity. Upon further inquiry, it is individuals in lower aggression peer groups who were increasingly affected by peer network density. This suggests tightly knit peer groups that hold attitudes less accepting of sexual aggression protect against members developing high levels of hostile masculinity, making these individuals less likely to perpetrate acts of sexual aggression. Alternatively, influence within peer groups highly supportive of sexual aggression may be so strong, even at low levels of group density, that there is a ceiling effect making peer group density a nonsignificant factor for these groups.

**Research Implications**

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 tendency for like-minded people to attract one another through 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 hostility toward women, or how they view rape as acceptable; if these men select one another, it is probably through a more nuanced mechanism. They may send and receive subtle verbal or nonverbal cues, especially when they talk about topics related to women, sex, and masculinity. It is also possible 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 alcohol and drug use (Gallagher, Hudepohl, & Parrott, 2010; Parkhill & Abbey, 2008; Swartout & White, 2010). More research is needed to sort out these remaining questions. Longitudinally measuring individuals’ sexually aggressive attitudes and behaviors, correlates of this aggression, and social network factors would allow for direct tests of these remaining questions.

Aggressive teens are generally found to have strong peer relationships, often with other aggressive teens, and increase their status among their peers through aggressive acts (Cairns & Cairns, 1994). In contrast, some findings suggest teens in low density peer networks engage in significantly more direct aggression compared with teens in high density peer networks. Although not a main emphasis of their paper, Green, Richardson, and Lago (1996) found male teens who were members of low-density peer groups tend to be more physically aggressive compared with members of more dense groups. Based on both past and present findings, there may be two different forces involved with peer influence on individuals’ sexually aggressive attitudes and behavior: (1) a general pressure to think and act like peers and (2) a general protective effect of peer network density on aggressive attitudes and behavior. More research is needed to confirm and distinguish these two proposed social forces.

**Clinical and Policy Implications**

Programs designed to weaken men’s attitudes supporting sexual aggression have yielded mixed results. These programs have been found to be effective for men with moderately aggressive attitudes, but largely ineffective for men with highly aggressive attitudes (Stephens & George, 2008). This may be due to the peer networks within which men reside. The current findings suggest 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 peer influences; there will be sustained pressure on these men to embody their peer groups’ attitudinal and behavior norms. 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.

There has been a recent resurgence in research on bystander intervention in preventing sexual aggression (e.g., DeKeseredy, Schwartz, & Alvi, 2000; Fabiano, Perkins, Berkowitz,
Although sexual assaults most commonly occur in an isolated context, antecedent situations are commonly social—such as parties or bars (Parrott et al., 2012). Taken together, it is not a surprise that recent studies suggest the utility of bystander intervention programs in reducing sexual assault (e.g., Banyard, Moynihan, & Plante, 2007; Foubert, Langhinrichsen-Rohling, Brasfield, & Hill, 2010; Gidycz, Orchowski, & Berkowitz, 2011). Prospective bystanders, however, weigh perceived peer attitudes toward sexual aggression heavily when making the decision to intervening in a sexually aggressive situation, even more heavily than they weigh their own attitudes (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, harmful peer influence might be lessened. This could be combined with bystander intervention programs to institute a dual-pronged approach to reduce sexual aggression.

Limitations

The measures used in this study to assess rape myth acceptance, adversarial sexual beliefs, and attitudes toward interpersonal violence are over 30 years old and have been argued to lack construct validity (Lonsway & Fitzgerald, 1995). Although more valid and up-to-date measures of these constructs were available, Burt’s (1980) scales were selected for this study in an effort to maintain consistency with the original iteration of the confluence model (Malmuth et al., 1991) as well as other recent extensions (e.g., Anderson & Anderson, 2008; Parkhill & Abbey, 2009). Future research assessing peer influence on individuals’ attitudes toward violence, women, and sex will employ more current and valid scales (e.g., Lonsway & Fitzgerald, 1995; Payne, Lonsway, & Fitzgerald, 1999).

Because they were mostly first-semestere college students, participants were asked to report on attitudes and relationship characteristics of their high school peers, but were not asked about college peers. Future research on this topic should address the attitudes and network density of college students’ current peer groups and should seek to replicate these findings in noncollege-student populations of men. Finally, men who reported no history of sexual activity were included in the analyses. This decision was made from a prevention perspective: just because a man is not sexually active does not preclude him from engaging in future sexually aggressive behavior. Data concerning men’s aggressive and hostile attitudes, past delinquent behaviors, and peer network density inform the current models, regardless of sexual activity or lack thereof. In a post hoc model test, when fit only to data from sexually active men, the peer influence interaction model showed similar structural relations to those reported in Figure 1. Some structural relations within this post hoc model did not reach conventional significance levels, this is most likely due to the decreased statistical power to detect significant effects as a result of decreasing the sample size ($n = 257$). Future research seeking to replicate these findings should collect a larger sample and conduct a multiple-groups analysis to detect differences as a function of sexual activity status.

Conclusions

The present study adds to existing knowledge concerning peer-level predictors of sexually aggressive behaviors and extends a popular model of sexual aggression etiology. Findings suggest perceived peer rape-supportive attitudes influence individual hostile and violent attitudes toward women, while peer network density negatively predicts individuals’ hostile masculinity—suggesting individuals with highly dense peer groups, in general, tend to harbor less hostility toward women. Furthermore, perceived peer attitudes moderated the relation between peer network density and individual hostile masculinity; on average, the least hostile men are in low-aggression, high-density peer groups. These findings illustrate how perceived peer attitudes and peer network density function through individuals’ hostile attitudes to indirectly affect men’s sexually aggressive behavior. These findings could be implemented into bystander intervention programs and social norms campaigns aimed at reducing
sexual aggression. Future research concerning peer influence on individual sexually aggressive attitudes and behaviors should approach these relationships longitudinally.

References

Call for Papers: Special Issue on Issues in Sexual Minority Parenting

Professional Psychology: Research and Practice will feature a special issue on sexual minority parenting. We invite articles addressing issues and professional practice focused on parenting, grandparenting, or growing up in a family with a sexual minority parent or child. We seek manuscripts addressing issues and interventions for families that include an individual who identifies as lesbian, gay, bisexual, or transgender, or with other diverse or minority sexual orientations or gender identities, including issues of bias, minority stress, and microaggressions relevant to these populations. We are particularly interested in receiving qualitative and quantitative empirical studies, comprehensive literature reviews, conceptual work, and program and therapy outcome studies, although descriptions of innovative programs or interventions may also be considered. Manuscripts can be submitted through the Journal’s electronic portal, under the Instructions to Authors at: http://www.apa.org/pubs/journals/pro/index.aspx

Please note in your cover letter that you are submitting for this special issue and send in attention to Kathi A. Borden, Ph.D., Associate Editor, Professional Psychology: Research and Practice.