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## Do Men Use More Sexually Aggressive Tactics When Intoxicated? A Within-Person Examination of Naturally Occurring Episodes of Sex

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### Abstract

**Objective**—Men’s alcohol use has been linked to sexual assault perpetration. Yet, it is unknown whether within naturally-occurring sexual encounters men use more sexually aggressive tactics when they are intoxicated. The present study considered whether college men’s perceived intoxication at the time of sex increased their self-reported use of verbal persuasion, physical force, and encouraged intoxication of partner as tactics to convince a woman to have sex.

**Method**—As part of a 56-day daily report study, 298 college freshman males reported 1,832 episodes of sexual activity with female partners. Using multilevel modeling, we considered the within-person effects of subjective intoxication, sexual precedence (new versus previous partner), and perceived partner sexual interest on male use of sexually aggressive strategies within each sexual encounter. We also considered whether the impact of event-specific intoxication was moderated by individual differences in hostility toward women, delinquency, and impersonal sex.

**Results**—Greater subjective intoxication at the time of sex predicted greater use of verbal persuasion and encouraging intoxication of partner. Although intoxication did not predict physical force directly, there were indirect effects via greater verbal persuasion and encouraging partner intoxication. Event-specific intoxication did not interact with any of the individual difference variables and only hostility toward women contributed positively to use of event-specific sexually aggression.

**Conclusions**—Men’s intoxication at the time of sexual activity increases their use of sexually aggressive strategies within naturally-occurring sexual encounters. Findings help to explain the robust relationship between alcohol use and sexual assault found in college populations.

### Keywords

alcohol; intoxication; sexual aggression; sexual activity; college

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Survey studies reveal that heavier drinking college men are more likely to perpetrate sexual assault; however, few studies have considered alcohol’s effects on men’s use of sexual aggression at the event level (Abbey, Wegner, Woerner, Pegram, & Pierce, 2014). Alcohol

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administration studies, using hypothetical sexual situations, provide some evidence that acute intoxication influences men's perceptions and willingness to behave in a sexually aggressive manner toward a female (e.g., Gross, Bennett, Sloan, Marx, & Juergens, 2001; Johnson, Noel, & Sutter, 2000). Using daily diary data, Neal and Fromme (2007) found that men (and women) were more likely to report coercing another person into some type of sexual activity on days on which their blood alcohol level was higher than their own average. However, to our knowledge, the impact of men's intoxication on their behavior within naturally-occurring sexual encounters has not been examined. Because sexual assaults often arise from sexual events that start out as consensual (Flack et al., 2007), it is important to determine whether men's use of alcohol in conjunction with sexual encounters leads to greater use of sexually aggressive tactics within those events. Using a large sample of sexual encounters reported daily by a sample of college men, we considered whether men's perceived intoxication at the time of sex predicted self-reported use of event-specific sexually aggressive behaviors: encouraged intoxication of the partner, verbal persuasion, and physical force.

### **Alcohol's Acute Effects on Sexual Perceptions and Behaviors**

Alcohol's effects on cognition and behavior have been well-documented and provide a basis for understanding alcohol effects on sexual aggression. Acute alcohol consumption, at moderate or higher doses, impairs the ability to inhibit responses (Fillmore, 2007). According to the Alcohol Myopia Model (AMM, Steele & Josephs, 1990), in a situation in which there are competing cues as to how to behave, moderate to high doses of alcohol decrease cognitive processing ability. Intoxication focuses attention on the most salient cues in the environment, while diminishing the ability to attend to inhibitory cues, resulting in the former having a disproportionate influence on behavior. In a sexual encounter involving competing cues, one's own sexual arousal and desire for sex are particularly salient (George & Stoner, 2000). Because intoxication focuses attention on this salient cue, while diminishing ability to attend to inhibitory cues (e.g., partner reluctance, absence of condom), behavior is disproportionately influenced by sexual arousal and focused on achieving sexual intimacy, potentially including use of sexually aggressive behaviors (George & Stoner, 2003; MacDonald, MacDonald, Zanna & Fong, 2000).

Experimental analog studies have considered whether administered alcohol influences men's sexual cognitions, acceptance of sexually aggressive behavior, and intentions to behave in a sexually aggressive manner using hypothetical sexual situations, presented via written, audio, or video vignettes. These studies reveal that men's acute intoxication increases sexually aggressive cognitions and behavioral intentions. For example, compared with sober men, men who received alcohol perceived a female character as more sexually aroused, which predicted higher sexual aggression intentions (Davis et al., 2012). Similarly, intoxicated men were more willing than sober men to behave in a sexually aggressive manner toward a female target (Norris & Kerr, 1993) and more accepting of sexually aggressive behavior by another man (Johnson et al., 2000). When presented with a hypothetical sexual encounter (via audiotape) that escalated to sexual aggression, intoxicated men waited longer to indicate that the male actor should stop his sexual advances (Marx, Gross, & Juergens, 1997; Marx, Gross, & Adams, 1999). Consistent with the Alcohol

Myopia Model, intoxication increased latency to stop when the woman's refusals were polite but not when they were assertive and hence more salient (Gross, Bennett, Sloan, Marx, & Juergens, 2001).

## Field Studies of Alcohol and Sexual Aggression

Beyond the laboratory, event-based studies have compared sexual assault incidents that include alcohol with those that do not. Perpetrator alcohol use at the time of sexual assault is associated with greater use of verbal and physical aggression (Abbey, Clinton-Sherrod, McAuslan, Zawacki, & Buck, 2003; Parkhill, Abbey, & Jacques-Tiura, 2009). Use of victim intoxication as a strategy has also been associated, not surprisingly, with higher levels of perpetrator drinking relative to sexual assaults involving only verbal coercion (Abbey & Jacques-Tiura, 2011). Most of these studies involved between-person comparison of alcohol-involved versus sober assaults. However, Kirwan, Parkhill, Schuetz, and Cox (2016) compared assaults within-person, for perpetrators who had at least one of each type, and found a similar pattern. That is, perpetrators reported greater use of physical force in sexual assaults that occurred when they were drinking compared with assaults when they were sober.

To our knowledge, the effect of men's intoxication on the use of sexual aggressive strategies within sexual encounters more generally (i.e., not restricted to sexual assaults) has not been examined systematically. A few studies suggest that alcohol use at the time of sex (typically by both partners) may increase men's aggression and women's discomfort. For example, adolescent girls who reported drinking before sex reported more partner pressure to have sex (Traeen & Kvalem, 1996) and encounters that were less wanted, less planned, more regretted, and more likely to occur without consent (Livingston, Testa, Windle, & Bay-Cheng, 2015). Similarly, women who consumed alcohol before hooking up felt less content than women who were sober (LaBrie, Hummer, Ghaidarov, Lac, & Kenney, 2014). Thus, despite commonly held beliefs that alcohol enhances and disinhibits sex (George & Stoner, 2000), these studies suggest the opposite: sexual encounters that include alcohol are rated less positively than sober events (Cooper, O'Hara, & Martins, 2016) and, based on women's reports, may include more pressure and less consent.

## Methodological Issues

Examining the effects of event-specific intoxication on naturally-occurring sexual behavior is complicated by the fact that alcohol is more likely to be used in sexual encounters and sexual assaults involving new rather than established partners (e.g., Goldstein, Barnett, Pedlow, & Murphy, 2007; Ullman, 2003). This probably reflects the social contexts in which drinking and sexual hookups occur (Bersamin, Paschall, Saltz, & Zamboanga, 2012; Corbin, Scott, & Treat, 2016). Women are less receptive to sexual advances from a new compared with an established partner (Clay-Warner, 2003; VanZile-Tamsen, Testa & Livingston, 2005) and less physical intimacy results from such encounters (LaBrie et al., 2014). Alcohol use may help to overcome feelings of conflict around sex with a new partner (Cooper & Orcutt, 1997) and facilitate intimacy with new partners (LaBrie et al., 2014). Thus, intoxication may have a greater impact on men's sexual behavior in new partner events compared with events

in which there is sexual precedence. The availability of multiple sex event reports for participants in the present study allowed us to distinguish the effect of partner type (new vs. previous) from the effect of intoxication on men's event-specific use of sexual aggression.

Abbey (2011) suggests that the impact of intoxication on behavior occurs in interaction with personality, that is, acute alcohol use increases risk of perpetration primarily among men already predisposed toward sexual aggression. There are several individual difference variables, derived from the Confluence Model (Malamuth, Socklosie, Koss, & Tanaka, 1991), that have been shown to increase the likelihood of perpetrating sexual aggression over time: history of delinquency, hostile attitudes toward women, and casual, impersonal sex with many partners (Testa & Cleveland, 2017; Thompson, Kingree, Zinzow, & Swartout et al., 2015). Two experimental studies involving administered alcohol provide support for the notion that the effect of alcohol on sexual aggression is greater for men who possess higher levels of these risk factors. That is, administered alcohol decreased empathy for a female victim and increased acceptance of sexually aggressive behavior for men with high in sexual assault risk factors (acceptance of interpersonal violence, hypermasculinity) but not for men low on those risk factors (Noel, Maisto, Johnson, & Jackson, 2009; Norris, George, Davis, Martell, & Leonesio, 1999). Our design allowed us to consider whether the effect of intoxication at the time of sex was limited to men with elevated scores in these domains or whether the effect was present for all men.

## The Present Study

In the present study, we examined the within-person effect of event-specific intoxication on men's self-reported use of encouraging intoxication, verbal persuasion, and physical force as ways of convincing a woman to have sex. We consider these tactics indicative of sexual aggression, defined broadly as attempts to achieve sexual intimacy regardless of the partner's desires (see Graham et al., 2014). Within naturally-occurring sexual encounters that varied on several dimensions, we hypothesized that men's subjective intoxication would predict greater use of all three tactics (Hypothesis 1). We tested this effect controlling for perceived partner sexual interest, since use of tactics to encourage a partner to have sex should be negatively associated with perceived partner interest. We also controlled for the effects of partner sexual precedence and tested the hypothesis that intoxication effects would be stronger with new partners relative to previous partners (Hypothesis 2). We tested the hypothesis that between-person differences in hostility toward women, delinquency, and impersonal sex would be positively associated with event-specific use of verbal persuasion, physical force, and encouraged intoxication (Hypothesis 3). However, of primary interest was the interaction between each risk factor and subjective intoxication, allowing us to test the hypothesis that subjective intoxication would have a stronger positive effect on event-specific aggressive behaviors for men higher in hostility toward women, delinquency, and impersonal sex (Hypothesis 4).

The study is unique in several ways. Previous studies have examined the effects of intoxication on men's sexually aggressive behaviors using experimental analog methods and hypothetical situations (e.g., Marx et al., 1999) or within sexual assault events (see Ullman, 2003). In contrast, we examined the effect of men's subjective intoxication on their use of

sexual aggression tactics within naturally-occurring sexual encounters that varied on several dimensions. Using reports of multiple sexual events, occurring over 8 weeks, we were able to consider the effects of men's subjective intoxication within-person. That is, we could compare a man's behavior when he felt intoxicated to his behavior in other sexual events when he was not. Second, we used a novel method of assessing men's sexually aggressive behaviors. Standard survey measures of sexual aggression perpetration such as the Sexual Experiences Survey (SES, Koss et al., 2007) require a man to identify whether he engaged in various behaviors that the female considered unwanted. However, requiring the man to assess the degree to which a woman wanted sex has been shown to suppress men's reporting of sexual aggression perpetration (Rueff & Gross, 2016; see Kolivas & Gross, 2007 for a review). In contrast, we asked men to report on behaviors they used "to encourage their partner" to have sex with them, without specifying that the behavior was unwanted by the woman. These items, worded so as to minimize self-presentational concerns (see Strang & Peterson, 2016), were intended as a more sensitive and direct measure of the man's efforts to achieve sexual intimacy. Finally, assessing verbal, physical, and intoxication tactics separately allowed us to determine whether subjective intoxication increases all types of sexually aggressive behaviors or whether its effects are specific to certain tactics.

## Method

### Participants and Recruitment

Participants consisted of 298 freshman males who participated in a daily diary study during the spring semester and reported at least one sexual encounter during the 56-day reporting period. They were selected from a cohort of males who entered a large public Northeastern university in the fall of 2011 or 2012, were 18 or 19 years old, and completed an online survey at the end of the first semester ( $N = 2,037$ ). Men were considered eligible for the daily report study if: 1) they reported drinking 5 or more drinks per occasion at least twice per month or weekly drinking of any amount and 2) reported at least one hook-up or episode of sexual intercourse with a woman during the Fall semester. A few men who failed to meet these criteria but who reported at least one sexual aggression item on the Sexual Experiences Survey (Abbey, Parkhill, Clinton-Sherrod, & Zawacki, 2007) or the Sexual Strategies Survey (Strang, Peterson, Hill, & Heiman, 2013) during the first semester were also invited. Eligibility criteria were intended as a cost-efficient means of obtaining a sample of men who reported relevant events of interest (i.e., sexual encounters, with and without alcohol, permitting within-person comparisons) and from which results would be generalizable. Email invitations were sent in early February to 766 men; 427 men completed the daily report study which was designed to examine the temporal association between episodes of drinking and the occurrence of sex (see Testa et al., 2015). Of these 427 men, 309 reported at least one sexual encounter during the 56 days. Analyses are limited to 298 men who made reports on time (i.e., within 24 hours of the sexual encounter) and provided complete data for variables used in primary analyses. The sample was 77.2% European-American, 8.7% Asian, 7.7% Hispanic, 3.7% African American, and 2.7% mixed/other. Most reported drinking 5 or more drinks on at least one occasion in the first semester (267/298, 89.6%) and 62/298 (20.8%) reported perpetrating sexual aggression.

## Procedures

Procedures were approved by the university's Institutional Review Board. Participants provided online consent before completing the fall baseline survey and also before completing the first day's report in the daily report study. For the next 55 days, participants received daily email reminders containing a link to the daily report. If a participant missed one day's report, he was allowed to make a brief make-up report the next day; however, because not all sex-relevant items were asked in the make-ups, make-up reports were not used in these analyses. Participants were compensated with Campus Cash as follows: \$10 for each complete week (6/7 reports) and a \$40 bonus for completing all 8 weeks (maximum \$120).

## Measures

**Sexual Events**—Each day, men were asked: “Since this time yesterday, have you hooked up, engaged in any sexual activity, or tried to engage in any sexual activity with a woman (including flirting, kissing, touching, or intercourse)?” This question was deliberately made inclusive so as to capture attempts to engage in sexual activity even when thwarted or unsuccessful. Positive responses were followed by the question “Would you describe the woman involved as a regular partner, that is, someone you have been sexually intimate with in the past?” Responses to this question allowed us to categorize sexual events as involving a previous versus a new partner. Men were also asked whether various sexual behaviors occurred in the event including kissing, sexual touching, oral sex, and intercourse.

For each sexual encounter, men were asked “At the time, how much do you think your partner wanted to be physically intimate with you?” Sexually aggressive behaviors were assessed with the following three items, similar to those used by Abbey et al. (2003): “To what extent did you use verbal persuasion to encourage your partner to engage in sexual activity with you?”, 2) “... use physical pressure or force to encourage your partner to engage in sexual activity with you...”, and 3) “...encourage her to drink or use drugs as a way of getting her to engage in sexual activity with you?” Men also reported how intoxicated or high they were at the time of the encounter. All items were rated on 7-point scales ranging from 1 (not at all) to 7 (a great deal).

**Individual Difference Measures**—Measures were completed in the Fall baseline survey, approximately three months before the daily report study began. The Hostility toward Women Scale (Lonsway & Fitzgerald, 1995) contains 10 items (e.g., “I am easily angered by women”) rated on 7-point scales ranging from 1 (strongly disagree) to 7 (strongly agree). Items were summed ( $\alpha = .83$ ) to create a total score (possible range 10–70). Delinquency was assessed with the 18-item Antisocial Behavior Checklist, Adolescent version (Zucker, 2005). Items (e.g., skipped school, took part in gang fight) were rated on 4-point scales ranging from 0 (never) to 3 (often, 10 or more times) and summed ( $\alpha = .82$ , possible range 0 – 54). Impersonal sex was assessed using the Sociosexuality Index (Simpson & Gangestad, 1991) which includes 3 attitude items (e.g., “sex without love is okay”) assessed on 9-point scales and 4 behavioral items (number of sex partners, frequency of sex fantasies, number of one night stands, sex partners desired in next 5 years). Items were combined following

original weighted scoring recommendations to yield a single score ( $\alpha = 0.71$ ) with a possible range of scores was from 4 to 156.

## Data Analysis

Data consisted of up to 56 daily reports for 298 participants. Analyses were performed using multilevel modeling to account for the multiple observations of sexual encounters. Outcome variables were self-reported use of encouraged intoxication of partner, verbal persuasion, and physical force. At Level 1 (within-person), we included subjective intoxication at the time of each sexual encounter, the key independent variable. We controlled for perceived partner interest in sex at Level 1, to provide a more conservative test of the impact of intoxication and validation of our measures of sexual aggression tactics. At Level 1 we also included type of sexual partner (0 = previous; 1 = new) and the interaction of partner type X intoxication, allowing us to determine whether the effect of subjective intoxication was stronger for new partner events. Level-1 variables (except type of partner) were grand mean centered. At Level 2 (between-person), we entered the Hostility toward Women Scale, the Antisocial Behavior Checklist, and the Sociosexuality Index (grand mean centered; Enders & Tofighi, 2007) as additional predictors of event-specific sexual aggression. We also controlled for the cluster means of type of partner, subjective intoxication at time of sex, and perceived partner interest in sex averaged over all of the participant's sexual encounters. By including these cluster means at Level 2, we could distinguish within-person from between-person effects on sexual aggression. Following recommendations (Gelman, Carlin, Stern, & Rubin; Muthen, Muthen & Asparouhov, 2016), we used Bayesian analysis, which neither requires nor assumes that parameters are normally distributed (van de Schoot, 2014), and performed multilevel models with random intercepts, run separately for each sexual aggression tactic, using Mplus Version 7.4 (Muthén & Muthén, 1998–2017).

## Results

### Descriptive Data

The 298 participants completed a total of 12,081 on-time daily reports out of a possible 16,668 days ( $298 \times 56$ ; 72.39%), a mean of 40.54 reports ( $SD = 6.58$ , range 5–56) per man. A total of 1,832 sexual events were reported, an average of 6.15 sexual-event days per man ( $SD = 8.48$ , range 1–43). Approximately half of all sexual events resulted in sexual intercourse (932, 50.9%) with smaller numbers resulting in oral sex (179, 9.8%), touching (370, 20.2%), kissing (305, 16.7%), and no physical contact (45, 2.5%) as the most intimate behavior. As expected, most events involved a previous partner (1,582/1,832 or 86.40%) and most men (225/298 or 75.5%) reported at least one sexual encounter with a previous partner. However, nearly half the sample reported 1 or more sexual encounters with a new partner (145/298 or 48.7%). As reported in Testa et al. (2015), compared with previous partner events, new partner events were less likely to involve sexual intercourse and more likely to involve some use of sexually aggressive tactics. New partner events also included lower perceived partner sexual interest, 5.18 vs. 6.40,  $t(1,830) = 15.70$ ,  $p < .001$ , and higher average intoxication, 3.12 vs. 1.38,  $t(1,830) = -20.40$ ,  $p < .001$  compared with previous partner events. Descriptive data for key variables are displayed in Table 1.

## Multilevel Models: Effects of Event-Specific Intoxication on Sexual Aggression

The Bayesian point estimates and the 95% credibility intervals (CIs) are displayed in Table 2. In support of Hypothesis 1, greater subjective intoxication at the time of sex predicted significantly greater use of encouraging intoxication,  $b = 0.058$ ,  $p = 0.001$ , 95% CI = 0.032, 0.086 and verbal persuasion,  $b = 0.064$ ,  $p = 0.014$ , 95% CI = 0.014, 0.115. The effect of subjective intoxication on use of physical force was positive but not significant ( $b = 0.032$ ,  $p = 0.118$ , 95% CI = -0.008, 0.074). Neither type of partner nor the interaction of partner type X intoxication was associated with use of sexually aggressive tactics (Hypothesis 2). However, when men perceived lower partner interest in sex they used more verbal persuasion ( $b = 0.061$ ,  $p = 0.020$ , 95% CI = -0.112, -0.009) and physical force ( $b = 0.060$ ,  $p = 0.006$ , 95% CI = -0.101, -0.018). At Level 2, the cluster mean for subjective intoxication was not significant in any equation, indicating that intoxication effects were event-specific and not reflective of person-level differences in average perceived intoxication. However, the cluster mean for perceived partner interest was significant for encouraged intoxication and verbal persuasion indicating that men who on average perceived their partners as less interested in sex reported greater use of these strategies.

We found limited evidence that individual differences on the Confluence Model variables predicted event-specific sexual aggression. Consistent with Hypothesis 3, men higher in hostility toward women used more verbal persuasion and physical force (but not encouraged intoxication). However, delinquency was not significant in any equation and unexpectedly, sociosexuality had a small but significant negative effect on encouraging intoxication. To test Hypothesis 4, that subjective intoxication effects would be stronger for more aggression-prone men, we tested cross-level interactions between Level 1 intoxication and each of the individual difference variables. None was significant and hence are not displayed.

### Exploratory Analysis

We were somewhat surprised by the failure to find an effect of subjective intoxication on physical aggression. However, physical force is typically considered a more extreme point on a sexually aggressive continuum that begins with verbal persuasion (DeGue, DiLillo, & Scalora, 2010). A recent study found that verbal persuasion was used in all sexually aggressive encounters but physical aggression in only some of them (Davis, Danube, Stappenbeck, Norris, & George, 2015), suggesting that if verbal persuasion is unsuccessful, an aggressive man may increase his verbal pressure and ultimately escalate to use of physical force (e.g., Marx et al., 1999). To explore this notion, we performed a two-level path analysis model with perceived intoxication as the independent variable, physical force as the dependent variable, and verbal persuasion as the mediator. Men used more physical force as verbal persuasion increased,  $b = 0.347$ ,  $p < .001$ , 95% CI = 0.310, 0.383, and subjective intoxication had a significant indirect effect on physical force,  $b = 0.028$ ,  $p < .001$ , 95% CI = 0.013, 0.044, but not a direct effect,  $b = 0.012$ ,  $p = .504$ , 95% CI = -0.023, 0.048. No other Level 1 variables were significant predictors of physical force when verbal persuasion was included. We found a similar pattern when encouraged intoxication was examined as the mediator. Higher levels of encouraged intoxication predicted greater use of physical force,  $b = 0.185$ ,  $p < .001$ , 95% CI = 0.109, 0.259. Subjective intoxication had a significant indirect effect on force,  $b = 0.013$ ,  $p < .001$ , 95% CI = 0.007, 0.021, but not a



direct effect,  $b = 0.022$ ,  $p = .298$ , 95% CI =  $-0.019, 0.061$ . Again, no other Level 1 variables were significant predictors of physical force when encouraged intoxication was included as a predictor.

## Discussion

In this innovative study, we considered whether college men's subjective intoxication during sexual encounters was associated with increased use of verbal persuasion, physical force, and partner intoxication as tactics to encourage their female partners to have sex. Prior studies have addressed the role of alcohol on sexual aggression using experimental analog methodology (e.g., Davis et al., 2012) or by comparing sexual assaults that included alcohol with sober assaults (e.g., Ullman 2003). However, to our knowledge, this is the first study to consider the impact of men's intoxication on their use of sexual aggression strategies within naturally-occurring sexual encounters that varied on several dimensions. In support of Hypothesis 1, higher event-specific subjective intoxication had a positive direct effect on verbal persuasion as well as an indirect positive effects on physical force, mediated via verbal persuasion. The positive effect of male intoxication on use of verbal persuasion appears at first to be at odds with prior event-based studies of sexual assault incidents showing that intoxicated men are more likely to use physical force rather than verbal coercion (e.g., Abbey, Ross, McDuffie, & McAuslan, 1996; Lyndon et al., 2007). However, those studies compared only sexual assault incidents with and without alcohol and, like our results, suggest sexual aggression for intoxicated men. In support of Hypothesis 1, we also found a robust positive association between subjective intoxication at the time of sex and encouraging partner intoxication. However, because this strategy typically is used prior to sexual activity, its use is probably not a consequence of male intoxication but rather a reflection of shared pre-sex drinking contexts. The finding that men who on average perceived less sexual interest by their partners reported greater use of this strategy is consistent with the notion that encouraging partner intoxication is a strategy is used in anticipation of sex. Nonetheless, greater use of encouraged partner intoxication was associated with greater use of physical aggression at the event level, suggesting that multiple strategies may be used within the same event, possibly because the first does not achieve the desired goal (e.g., Davis et al., 2015).

Because alcohol is more likely to be present in sexual events that involve new partners, it has been difficult using traditional methods to determine whether intoxicated and sober events differ because of alcohol or because of type of partner (see Ullman 2003). The availability of multiple events per person allowed us to consider the effects of type of partner and intoxication separately and to consider their interaction. We found that effects on sexual aggression were specific to men's intoxication at the time of sex and not associated with type of partner. We failed to support Hypothesis 2, in that we found no interaction between intoxication and type of partner. Rather, the effect of men's subjective intoxication on sexual aggression occurs with new and previous partners.

We found only modest evidence for Confluence Model variable effects on event-specific sexual aggression tactics (Hypothesis 3). Hostility toward women predicted verbal persuasion and physical aggression at the event-level. However, delinquency was not a

significant predictor of sexual aggression tactics in any model and the effect of impersonal sex on encouraged intoxication was negative. Men higher in this trait may be less likely to encourage partner intoxication because they are more successful in initiating sexual intimacy through other means; however, this requires replication. Contrary to Hypothesis 4, that intoxication would increase aggression primarily among men already prone to sexual aggression, none of the cross-level interactions between subjective intoxication and personality characteristics were significant (Hypothesis 4). Because participants were all sexually active, with higher than average levels of drinking, scores on the Confluence Model variables tended to be elevated, potentially inhibiting our ability to test theoretically-derived predictions due to a truncated range of scores (see Testa et al., 2015).

### Limitations

As in any study using self-report data, there are potential limitations associated with the veracity of reports, which cannot be verified. We did not obtain estimates of blood alcohol level and thus cannot corroborate subjective intoxication. However, in contrast to most event-based studies that involve retrospective recall of critical events, reports of sexual encounters were made within 24 hours of occurrence, presumably reducing recall errors and bias. It is possible that subjective intoxication reflects concomitant use of drugs as well as alcohol, although failure to exclude these cases would make results more conservative. Because the intoxication items followed the sexual aggression items men may have reported higher intoxication as an excuse, although the failure to find an association between subjective intoxication and physical force argues against this possibility. Although results were consistent with Alcohol Myopia theory, we did not test the theory directly, a useful direction for future research. The sample was limited to second-semester freshman at a single university. Replication with other samples and types of sexual encounters (e.g., same-sex partners, adult marital relationships) would increase generalizability and confidence in findings.

Finally, but importantly, data represent one individual's view of a dyadic encounter. Male perspectives are likely to differ from female perceptions of the same event, but that does not mean that one view is right and the other is wrong (see Derrick et al., 2014). A man may fail to respond in the affirmative to a sexual aggression item worded from the perspective of the female victim because he does not realize that she considered the encounter unwanted (see Kolivas & Gross, 2007). On the other hand, a woman may not recognize the man's use of specific tactics to obtain sex, particularly when those efforts are subtle.

### Implications for Research

Use of an intensive longitudinal design, with multilevel modeling allowed us to consider intoxication effects within-person, across multiple events. By accounting for the effects of other variables at the event- and the person-level, we increased confidence that effects are the result of event-specific intoxication and not due to other confounding variables such as partner sexual precedence. Multilevel modeling also permitted separation of event-specific variables from person-level variables. For example, by accounting for the average level of subjective intoxication at the time of sex at the person level, we determined that intoxication effects on sexual aggression were event-specific, and not the result of greater aggression by

men who tend to be more intoxicated when they have sex. We encourage other researchers to adopt such an approach given its many advantages for event-based research.

Another innovative aspect of the study was our use of event-specific self-reports of sexually aggressive behaviors, with items deliberately designed to reduce self-presentational concerns. Despite the fact that sexual aggression is a socially proscribed behavior, men self-reported some use of strategies designed to encourage sexual intimacy in a substantial proportion of sexual encounters. In support of the validity of these measures, men reported more verbal persuasion and physical force in encounters in which they perceived their partner to be less interested in sex. Also, men who perceived less partner interest in general reported more use of encouraging partner intoxication and verbal aggression.

### Clinical and Policy Implications

Our detailed examination of a wide range of sexual encounters helps to understand the well-documented global association between alcohol and college sexual assault. Sexual assaults frequently arise from hookups or other sexual encounters that start out as consensual (e.g., Flack et al., 2007). When alcohol is present, men are more likely to report use of strategies designed to encourage greater sexual intimacy. The recipient of these efforts may acquiesce or be forced or coerced into levels of sexual intimacy that she did not want and may subsequently recognize, label, and report these episodes as non-consensual (i.e., on a measure such as the Sexual Experiences Survey, Koss et al., 2007). College women are sexually vulnerable not only as a result of their own alcohol use, as has been clearly demonstrated (Testa & Livingston, 2009) but as a result of their association with intoxicated men. Our findings also show, importantly, that the association between men's perceived intoxication and use of sexually aggressive behaviors is equivalent regardless of type of partner. Thus, the risks associated with an intoxicated partner are not limited to hookups but occur even within the more common situation of sex with a previous partner. College prevention efforts need to recognize the role of alcohol in both victimization and perpetration.

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**Table 1**  
 Descriptive Statistics among Variables of Interest, (N = 298, 1,832 Sexual Events)

	Min	Max	M	SD	Any Report (%) <sup>f</sup>
Encouraged Intoxication	1.00	7.00	1.14	0.65	112 (6.1)
Verbal Persuasion	1.00	7.00	1.61	1.22	489 (26.7)
Physical Force	1.00	7.00	1.40	1.04	333 (18.2)
Man's Intoxication	1.00	7.00	1.62	1.39	371 (20.3)
Woman's Interest in Sex	1.00	7.00	6.23	1.22	--
Hostility toward Women	10.00	67.00	35.75	9.96	--
Delinquency	0.00	31.00	7.80	5.50	--
Sociosexuality	16.00	156.00	78.11	32.87	--

Note:

<sup>f</sup> Number and percent of sexual events that included any use of sexually aggressive tactic, any level of intoxication (score 2 – 7).

**Table 2**  
Between- and Within-Person Predictors of Sexual Aggression Tactics, All Events (N = 298; 1,832 Sexual Events)

Variable	Encouraged Intoxication			Verbal Persuasion			Physical Force		
	Estimate (SE)	CI 95%	Estimate (SE)	CI 95%	Estimate (SE)	CI 95%	Estimate (SE)	CI 95%	
Fixed effects									
Intercept	2.068 (0.250)***	[1.577, 2.563]	2.741 (0.422)***	[1.920, 3.573]	2.085 (0.389)***	[1.317, 2.854]			
Within (Level 1)									
Type of Partner <sup>a</sup>	-0.038 (0.092)	[-0.220, 0.137]	0.043 (0.170)	[-0.293, 0.368]	-0.025 (0.139)	[-0.300, 0.239]			
Men's Intoxication	0.058 (0.014)***	[0.032, 0.086]	0.064 (0.026)*	[0.014, 0.115]	0.032 (0.021)	[-0.008, 0.074]			
Type of Partner × Intoxication	0.046 (0.025)	[-0.004, 0.094]	0.038 (0.045)	[-0.051, 0.125]	-0.008 (0.038)	[-0.081, 0.065]			
Woman's Interest	-0.011 (0.014)	[-0.039, 0.016]	-0.061 (0.026)*	[-0.112, -0.009]	-0.060 (0.021)**	[-0.101, -0.018]			
Between (Level 2)									
Hostility toward Women	0.004 (0.004)	[-0.003, 0.011]	0.016 (0.006)**	[0.005, 0.028]	0.019 (0.006)***	[0.007, 0.030]			
Delinquency	0.012 (0.007)	[-0.001, 0.026]	0.003 (0.011)	[-0.019, 0.026]	-0.004 (0.011)	[-0.025, 0.018]			
Sociosexuality	-0.003 (0.001)*	[-0.005, 0.000]	0.000 (0.002)	[-0.004, 0.004]	-0.003 (0.002)	[-0.007, 0.000]			
CM - Type of Partner	-0.119 (0.131)	[-0.377, 0.142]	0.173 (0.225)	[-0.268, 0.616]	-0.205 (0.203)	[-0.605, 0.204]			
CM - Men's Intoxication	0.058 (0.037)	[-0.015, 0.129]	-0.032 (0.062)	[-0.158, 0.089]	0.024 (0.057)	[-0.089, 0.135]			
CM - Women's Interest	-0.157 (0.037)***	[-0.231, -0.084]	-0.149 (0.063)*	[-0.272, -0.025]	-0.085 (0.058)	[-0.200, 0.029]			
Random effects									
Within	0.270 (0.010)***	[0.251, 0.291]	0.930 (0.034)***	[0.866, 0.999]	0.604 (0.022)***	[0.562, 0.649]			
Between	0.261 (0.036)***	[0.199, 0.340]	0.629 (0.082)***	[0.492, 0.810]	0.671 (0.078)***	[0.537, 0.843]			

Note:

<sup>a</sup> type of partner (1 = new; 0 = previous)

CM = cluster mean, average score for each man across all sexual encounters.

\*\*\**p* < .001,

\*\**p* < .01,

\**p* < .05.