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Public House Patrons' Engagement in Hypothetical Sexual Assault:

A Test of Alcohol Myopia Theory in a Field Setting

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## Abstract

Previous research has found that drinking establishments are often antecedent to sexual aggression outcomes. In the present study, male participants were randomly selected from public houses (i.e., “pubs”) and asked to imagine themselves in a hypothetical intimate encounter in which the female in the scenario stops consenting to sexual contact.

Participants were given the option to continue making sexual advances up to and including sexual intercourse against the woman’s will. It was hypothesised based on Alcohol Myopia Theory that participant blood alcohol concentration (BAC) levels would be associated with hypothetical sexual aggression when stereotypical cues of a woman’s sexual availability (revealing clothing and alcohol use) were present in the scenario. Men’s engagement in hypothetical sexual aggression was associated with BAC levels, but only when the woman was wearing revealing clothing. The sobriety of the female actor was not associated with sexual aggression. Results indicate that Alcohol Myopia Theory generalises to a field setting.

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Violence frequently occurs in locations that are in and around drinking establishments, and alcohol is frequently implicated in these incidents (Gorman, Speer, Gruenewald, & Labouvie, 2001; Lipton & Gruenewald, 2002; Roncek & Maier, 1991; Scribner, MacKinnon, & Dwyer, 1995; Treno, Gruenewald, Remer, Johnson, & LaScala, 2008). In particular, research has found that bars and nightclubs often serve as antecedent settings for sexual aggression, including rape, attempted rape, stalking, and sexual assault and harassment (Anderson, Hughes, & Bellis, 2007; Buddie & Parks, 2003; Combs-Lane & Smith, 2002; Fox & Sobol, 2000; Graham & Wells, 2001; Graham, West, & Wells, 2000; Parks & Zetes-Zanatta, 1999; Parks & Scheidt, 2000; Pino & Johnson-Johns, 2009). Moreover, research with college participants indicates that bars and parties are common locations for sexual violence (Abbey, McAuslan, Zawacki, Clinton, & Buck, 2001).

Given the connection between sexual aggression and drinking establishments, it is important to investigate whether theories of sexual aggression can be generalized to people in these settings. Licensed establishments may serve as antecedent locations for sexual aggression because patrons consume alcohol. Aggression has been found to increase in a dose dependant manner with alcohol level in the laboratory (Duke, Giancola, Morris, Holt, & Gunn, 2011). Alcohol may act as a disinhibitor, especially if a person has strong a priori expectations about alcohol's disinhibiting effects (Seto & Barbaree, 1995). Additionally, alcohol may disrupt people's cognitive ability to attend to internal and external cues that might otherwise inhibit socially inappropriate behaviour (Crowe & George, 1989).

Seto and Barbaree (1995) drew from Alcohol Myopia Theory (AMT) (Steele & Joseph, 1990) to make predictions about alcohol's effects on cognitive processes in situations that have the potential to escalate to sexual aggression. AMT, which is a general theory that accounts for social responses when people are under the influence, posits that alcohol decreases cognitive capacity and narrows attention to cues that are immediate, salient and easily comprehended. Engagement in aggressive behaviour, for example, will depend on whether cues that inhibit or disinhibit aggressive behaviour are more salient to the intoxicated person. For example, if an intoxicated person's focus is on cues that disinhibit aggression, they will not have the cognitive capacity to also take into account cues that would inhibit aggression, such as victim distress or the threat of legal sanctions. Accordingly, an intoxicated person will be more likely to aggress than a sober person in such situations. On the other hand, if an intoxicated person is focused on aggression inhibiting cues, they will not have the cognitive capacity to also attend to disinhibitory aggression provoking cues; therefore, alcohol intoxication can also suppress aggressive responses (Giancola & Corman, 2007).

AMT has been used to successfully predict the effects of alcohol on a range of behaviours (see Giancola, Josephs, Parrott, & Duke, 2010 for a review), including helping behaviour (e.g., Steele et al., 1985), risky sexual behaviour (e.g., Davis, Hendershot, George, Norris, & Heiman; 2007), and gambling (e.g., Steele & Southwick, 1985). To illustrate, MacDonald, Zanna, and Fong (1996) showed sober and intoxicated males a video clip of a couple who did not have a condom, yet they desired to have sex. Consistent with AMT, intoxicated males were more likely than sober males to indicate that they would have sex without a condom, suggesting that they had focused on sexual arousal cues and not on the dangers associated with having unprotected sex. The research was conducted both in the laboratory

with undergraduate males and in a bar with male bar patrons, and consistent results were obtained across the two samples.

With respect to sexual aggression, AMT would predict that the likelihood of sexual aggression varies depending on whether the intoxicated person's attention has been narrowed to cues that disinhibit sexual aggression (such as the victim's clothing or victim behaviour that the perpetrator perceives to be sexually provocative) or cues that inhibit sexual aggression (such as victim distress or the threat of legal sanctions). The AMT framework has successfully accounted for hypothetical sexual aggression in laboratory studies (Gross, Bennett, Sloan, Marx, & Juergens, 2001; Marx, Gross, & Juergens, 1997; Marx, Gross, & Adams, 1999; Johnson, Noel, & Sutter-Hernandez, 2000; though see Noel, Maistro, Johnson, & Jackson, 2009). For example, Gross and colleagues (2001) administered alcohol to male participants using a balanced placebo design and then had them to listen to an audiotape of a date rape and signal when the man in the scenario should stop making sexual advances. The scenario contained disinhibiting sexual contact cues (e.g., audible breathing and kissing sounds) and inhibiting sexual contact cues (polite sexual refusal by the woman, which was later followed by pleading and crying). Men who consumed alcohol took longer than their counterparts to indicate that the male in the scenario should stop making inappropriate sexual advances. In keeping with AMT, men who were intoxicated were more likely to perceive the female actor as sexually aroused when she made polite sexual refusals, suggesting that cues in the scenario that were indicative of the women's sexual arousal were more salient than her polite refusal. Later in the scenario, however, when her sexual refusals became vehement, sober and intoxicated men viewed her as sexually disinterested, suggesting that her sexual refusal was more salient than the sexual arousal cues that had been presented earlier in the scenario. As another example, Johnson, Noel, and Sutter-

Hernandez (2000) presented male participants who were under varying levels of alcohol intoxication with a videotaped dating scenario in which the female was either sexually receptive (e.g., flirting, touching, wearing a short skirt) or nonreceptive (e.g., displaying a rigid posture, generally acting unreceptive). Participants were asked to rate how acceptable it would be for either the male actor or themselves to use force as a means of obtaining sex with the female portrayed. Alcohol dosage level was positively associated with greater acceptance, but only when the female was portrayed as socially receptive. These results suggest that the disinhibiting cues had more of an influence on participant's attitudes than inhibiting cues when participants were intoxicated and the female was socially receptive. When she was nonreceptive, however, intoxicated individuals focused mainly on her nonreceptivity (i.e., an inhibitory cue) and sexual aggression was thereby suppressed.

The present study sought to test the generality of the AMT theoretical framework using a sample of males recruited from pub houses. Heretofore, no study has been conducted to assess the extent to which we can extrapolate from the AMT sexual aggression theoretical framework, which has been tested exclusively in the lab, to predict sexual aggression in a natural environment, namely in drinking environments that are often antecedent to sexual aggression. Therefore, in the present study pub patrons were presented with a hypothetical intimate encounter in which the presence of stereotypical cues of a woman's sexual availability were varied in a between participants design. Patrons were asked to imagine themselves in a scenario that describes them as having met woman at a nightclub. They were then given the option to engage in both consensual and non-consensual sexual contact with the woman. We predicted based on AMT that participant willingness to engage in hypothetical sexual aggression would be predicted by BAC level and whether stereotypical cues of sexual availability were present in the scenario. Two types of stereotypical cues

were employed in the scenario, including the type of clothing the woman was wearing and whether she was intoxicated with alcohol. Male bar patrons have been found to perceive women who dress in revealing clothing or who are drunk as sexually “easy” (Parks & Scheidt, 2000). Additionally, men who have perpetrated sexual aggression while under the influence of alcohol are more likely than other men to agree that a woman is willing to engage in sex if she is intoxicated (e.g., Zawacki, Abbey, Buck, McAuslan, & Clinton-Sherrod, 2003). Moreover, Amnesty International (2005) found that 26% of those polled felt that sexual assault victims were partially or wholly responsible for the attack if they were wearing revealing clothing. These findings suggest that a woman’s sobriety and her clothing may impact upon sexual aggression levels in intoxicated men. Specifically, based on AMT, we predicted that relatively higher BAC levels would be associated with hypothetical sexual aggression when stereotypical cues of a woman’s sexual availability, such as being under the influence of alcohol or wearing revealing clothing, were present in the scenario. Additionally, if AMT focuses participant attention on disinhibiting cues, such as revealing clothing and inebriation on the part of the victim, then participants who are under the influence of alcohol who engage in sexual aggression should be more likely to misperceive the sexual contact as consensual rather than forced.

To recap our hypotheses, we drew from AMT to predict that bar patron BAC would be positively associated with hypothetical sexual aggression when stereotypical cues of a woman’s sexual availability (revealing clothing or alcohol use) were present in the scenario. Additionally, it was predicted based on AMT that intoxicated compared to sober men would be more likely to erroneously believe that sexual contact obtained through aggression was consensual. If confirmed, this result would indicate that AMT can be generalised to predict sexually aggressive behaviour in men recruited from drinking establishments.

## Method

### *Participants*

Participants ( $N=157$ ) were of legal age to drink in the UK and were sampled from 5 public houses that are frequented by university students. Based on self-reports, participants were all heterosexual sexually experienced males ranging in age from 18–52 ( $M = 27.61$ ,  $SD = 9.56$ , Median = 23) years.

### *Design*

A 2 (woman's clothing: revealing or conservative) X 2 (woman's intoxication: sober or intoxicated) between participants factorial design was used. The woman's clothing and woman's intoxication variables were controlled within the intimate scenario. Participant BAC was measured by the use of a breathalyser (please see below). The outcome measures were 1) *sexual aggression*, which was defined as whether the participant did not withdraw from the intimate encounter once the woman stopped consenting to sexual activity; and 2) *consent misperception*, which was defined as whether a participant engaging in sexual aggression misperceived the sexual contact that took place in the scenario as consensual.

Other variables that were measured included *rape risk*, which was defined as affirmatively indicating that one would engage in sexual assault if there would be no legal repercussions, and *participant sexual experience*, which was measured by participant's self-reported number of sexual intercourse partners. The purpose of these measures was to validate men's behaviour in the scenario. Namely, men who score positive on the rape risk measure should be more likely to engage in hypothetical sexually aggression in the scenario, and men who indicate greater sexual experience should engage in higher levels of intimate contact in

the scenario. Below we detail how hypothetical sexual aggression and intimate contact were measured.

### *Materials and Procedure*

*Participant Recruitment.* Several ethical issues are raised given the topic of this research. The research protocol was approved by the University of Leicester Psychology Research Ethics Committee following a determination that the study procedures adhered to the ethical guidelines of the British Psychological Society. Several precautions were taken to protect participant welfare and well-being. Pub patrons were given an equal opportunity to participate by instituting a random selection procedure; every third patron who entered the public house was asked to take part. They were told that the study was examining the sexual and dating behaviours of men; similar to other sexual aggression analogue studies, the study hypotheses were not revealed, nor did we tell participants that we were studying sexual aggression. No incentives or inducements of any kind were offered to participants in exchange for their participation. 75% of those approached agreed to participate. Participants were asked to read and sign a consent form that provided a basic outline of the study procedures. The consent form stated that data would be confidential and anonymous and that the participant could withdraw from the study at any time. The consent form was stored separately from participant data sheets; therefore, no personally identifying information was associated with participant data.

Thereafter, participants were given a study packet of written materials, which included a personal questionnaire, an intimate scenario along with an attendant response sheet, and a post scenario questionnaire. The order in which the tasks were completed was counterbalanced across participants. Participants were asked via verbal and written

instructions to complete the forms in the study packet in the order in which they were received. The testing area was set up in a quiet and private corner of the establishment. Participants individually completed the study, and privately responded to the study materials. The materials and study procedure will be described next, followed by a description of the debriefing procedures.

*Personal Questionnaire.* Participants were asked about their age, the number of sexual intercourse partners they have had, and their sexual orientation. Embedded among a number of filler items assessing men's attitudes toward sex was a yes/no question that asked whether they would consider having sex with an unwilling partner if there would be no legal repercussions.

*Intimate scenario.* The scenario was presented in a booklet. On the first page, the participant was told that he was going to be reading about a hypothetical intimate encounter. He was instructed to imagine that he was experiencing the situation and to think about how he would actually behave were the situation really happening to him. The participant was further asked to not read ahead in the scenario booklet until instructed. The scenario began on the next page by asking the participant to imagine that he has met a woman in a nightclub. The woman eventually invites the participant back to her place after engaging in conversation and dancing with him.

Depending on the condition to which the participant was randomly assigned, a colour photograph of her was provided at the start of the scenario; she was pictured wearing either conservative or revealing clothing. In total, there were 4 women who were photographed twice—once wearing revealing clothing and again wearing conservative clothing. As consequence of photographing each woman wearing each type of outfit, the

physical features of the women that might be correlated with physical attractiveness were equated across the clothing conditions. Additionally, the purpose of utilising 4 women to portray the hypothetical woman in the scenario was to increase the external validity and construct validity of the clothing manipulation (Wells & Windschitl, 1999). That is, the goal was to provide evidence that any experimental effects of the woman's clothing on the dependent variables could be attributed to the clothing worn, rather than some other physical attribute specific to a given woman (e.g., the particular outfit the woman was wearing, her hair colour, build). If a relationship was found between sexual aggression and woman's clothing, it should hold across the 4 women portrayed; we tested this proposition in analysing the data.

Each participant was randomly assigned to view a photo of one of the women wearing either conservative or provocative attire. The clothing worn in the revealing condition was not unduly revealing and was comparable to clothing routinely seen in women's clothing magazines and in nightclubs. A separate group of 20 pilot participants who did not participate in the main study was given the photographs and asked to rate on a scale 1) the likelihood that they would see a woman dressed similarly in a nightclub (1=definitely not, 7=definitely yes), and 2) the degree to which the clothing was physically revealing of the woman's body (1=not at all revealing, 7=extremely revealing). On average, the revealing photos were rated 6.21 and the conservative photos were rated 2.46 in terms of the likelihood that a woman in a nightclub would be similarly attired. The provocative photos on average were rated 5.54 and the conservative photos were rated 2.10 with respect to how revealing they were.

Additionally, the woman in the scenario was portrayed as being either sober or intoxicated by varying the written description of her in the scenario. In the intoxicated condition she was drinking wine and her mannerisms were consistent with someone who was drunk (e.g., “She appears to be quite drunk as she pulls you to the dance floor”, “During the walk home she stumbles a few times”, “She holds on to you to stop herself from falling over”). In the sober condition, these stereotypical drunken behaviours were absent, and the woman was described as drinking water. Note that there was no information contained in any of the photographs that would convey the woman’s state of sobriety (i.e., the women were upright, bright eyed, and not holding a drink in the photographs).

The *participant choice procedure* was thereafter introduced via written instructions. This procedure has been validated for investigating people’s responses to hypothetical sexual aggression (Flowe et al., 2007). The procedure was utilized as a means of increasing participant involvement in the scenario. Specifically, the procedure enabled the participant to control the level of intimate contact taking place in the hypothetical encounter. The participant was told that the scenario would unfold in a line-by-line format (i.e., one sentence at a time). A question would follow after each line, asking him whether he wanted to remain in the situation being described or instead wanted the activity to stop and to “call it a night.” Each line of the encounter was numbered and presented on a single A4 page to discourage the participant from reading ahead. There were 29 lines in total. The participant recorded his response to a given line on a separate answer sheet. The answer sheet provided the response options (i.e., remain in the situation or call it a night) for each scenario line, and the participant indicated his answer by circling one of the options. The participant was instructed that if he wanted to “call it a night,” then he was to record his

answer on the response sheet, close the scenario booklet, and proceed to the next form in the packet. Otherwise, he was to record that he wanted to remain in the situation on his answer sheet and then proceed to the next page in the scenario booklet.

Each line of the scenario described an increasingly intimate activity (i.e., kissing, petting above the waist, petting below the waist, sexual intercourse). Key lines in the scenario were as follows: At line 1, the participant arrives at the woman's house ("You arrive at her house and you sit down on the couch"). Sexual contact begins at line 8 ("Whilst massaging you she kisses your neck, and her hands travel from your back to your chest and stomach"). At line 12, the woman begins to display subtle sexual refusal cues ("Not wanting to have her shirt unbuttoned, she takes your hands and places them on her hips"). The next lines of the encounter portray consensual sexual activity, including the participant and the woman kissing and him petting her above the waist. The woman indicates at line 18, however, that she is uncomfortable in the situation ("As you try to untie her pyjama pants, she smiles, but says that she feels uncomfortable"). At line 23, she asks the participant to stop ("As you pull down her pants she says that this is going too far and she wants to stop"). All subsequent sexual activity portrayed in the scenario thereafter was described as non-consensual (e.g., "She is pushing you away but you remove your own clothing and rub against her"; "She tries to keep your hands off her but you run your hand up her thigh and remove her underwear"; "She struggles and tries to push you away, but you pull her even closer and pull her legs apart"). At line 28 non-consensual digital penetration of her vagina was described, and at line 29, non-consensual penile-vaginal sexual intercourse was described.

Several scenario manipulation checks were carried out in pilot tests, which involved samples of participants who did not take part in the main study. First, a group of 24 sober

people (50% male) naïve to the study hypotheses were recruited from the public houses to read the scenario in its entirety and to indicate whether or not the sexual intercourse that took place was consensual. 100% indicated that it was not. Another naïve group of sober people ( $n = 28$ ; 50% male) read the scenario and evaluated each line of the encounter with respect to the degree of sexual contact taking place using a 7-point scale, anchored at '0', 'not at all sexual', and '7', 'extremely sexual'. The ratings were averaged for each line. The correlation between scenario line number and the sexual contact ratings was positive and significant ( $r_s = .83, p < .01$ ), suggesting that the sexual contact portrayed in the scenario was perceived as becoming increasingly sexual as the scenario lines progressed. Lastly, this group of participants indicated 'yes' or 'no' to each scenario line regarding whether the activity taking place was consensual; 100% of participants indicated that the sexual activity taking place in scenario lines 1-22 was consensual, except for line 18, wherein the woman indicates that she is uncomfortable in the situation. 91% of participants thought that the sexual contact described on line 18 was consensual, whereas 9% of participants thought that the activity described on line 18 was not consensual. 100% agreed that the woman stopped consenting to any sexual contact on line 23 and thereafter. Given these high levels of agreement in terms of defining the point at which the woman in the scenario stopped consenting, a participant was coded as engaging in sexual aggression if he did not withdraw from the scenario by line 23.

*Post Scenario Questionnaire.* Following the scenario, participants indicated on a questionnaire form whether a number of sexual activities (ranging from kissing to penile-vaginal intercourse) occurred in the scenario and whether they felt that the woman in the scenario consented to the activity.

*Participant Intoxication Measurement.* After participants completed the forms in their study packet, BAC levels were measured with the AlcoHAWK Slim, which is an electronic breath alcohol tester. To assure the accuracy of measurement, the person being tested must refrain from drinking, smoking and eating for at least 20 minutes before testing. We were unable to obtain a reading for every participant using the AlcoHAWK. Therefore, the AlcoHAWK BAC scores were supplemented by having participants report their weight, the time they began drinking, and the number and type of alcoholic drinks they had. This information was used to calculate BAC following the Widmark formula (Stowell & Stowell, 1998). In total, 86% of participants had both an AlcoHAWK and a Widmark score. The AlcoHAWK and Widmark scores were highly correlated ( $r = .86$ ), suggesting that the BAC measurement procedures were reliable. Indeed, previous research investigating the relationship between self-reported BAC and actual BAC have also found that the two measures are highly correlated (Carey & Hustad, 2002; Kraus et al., 2005). This research also finds that BAC estimated from self report data becomes increasingly discrepant as actual BAC levels increase. For example, Kraus and colleagues (2005) examined the relationship between BAC estimated from self report data and actual BAC, following a methodology similar to ours. Participants recruited in a field study were asked to self report their drinking behaviour that evening and then they were breathalysed. At the levels of intoxication found in the current study (BAC  $M = .04$ ,  $SD = .03$ , Median = .03, range: .00 - .10), the data from their research suggests that estimated and actual BAC are highly correlated (see Figure 1 from Kraus et al. 2005). Carey and Hustad (2002) also breathalysed participants, but contacted them the next day to ask them to retrospectively report their drinking behaviour from the night before. At BAC levels of .08 or less, estimated and actual BAC were highly correlated. These results suggest that estimated BAC scores we obtained could be reliably

substituted in place of actual BAC scores. Therefore, to avoid the problem of having missing BAC data for some participants, the Widmark BAC scores were used to estimate BAC levels.

*Participant Debrief.* Given that participants would be under varying levels of alcohol intoxication, procedures were adopted to provide participants with the opportunity to withdraw their data when they became sober and were fully aware of the aims of the study. Toward this end, each participant was asked to allocate himself a 4 digit PIN and to record it at the top of his data sheets. The participant then put his data sheets inside a nondescript envelope and gave it to the experimenter, who then randomly placed the envelope among other completed envelopes. Participants were told that they could call or email the researcher and quote their PIN if they later decided to withdraw their data. Participants were verbally debriefed about the research aims and thanked for their time. Participants were also given an information sheet to take away with them, which reiterated the aims of the study and the fact that they could either call or email the experimenter if they wished to withdraw their data at a later date. Participants were also asked to write their PIN at the top of the debrief sheet. All recruited participants completed the study procedures, and no participant withdrew his data at a later date. Finally, participants were asked to not tell others in the public house about the study procedures or the purpose of the study.

## Results

### *Preliminary Analysis*

As a means of validating the use of the participant choice procedure to examine intimate behaviour and sexual aggression, men's self-reported sexual behaviour was correlated with

their behavior in the scenario. Men's engagement in intimate contact in the scenario was consistent with their self-reported real life sexual behavior: Self-reported number of lifetime sexual partners (median = 4,  $M = 7.54$ ,  $SD = 7.59$ , range: 1-30) was positively correlated ( $r_s = .56$ ,  $p < .001$ , two-tailed) with the line at which men withdrew from the scenario (median = 18,  $M = 15.97$ ,  $SD = 7.67$ , range: 1 – 29). Men's engagement in sexual aggression was also consistent with their self report behavior. 8% of the sample self-reported that they would be willing to engage in nonconsensual sexual intercourse with a woman if there would be no legal repercussions. With respect to their scenario behaviour, 12% ( $n = 19$ ) of the sample remained in the scenario after line 23, which is the point at which the woman stopped consenting. Across the sample, 9% engaged in a legally definable act of hypothetical sexual assault and 3% engaged in a legally definable act of hypothetical rape. The association between men's self-reported willingness to engage in nonconsensual sexual intercourse and hypothetical sexual aggression in the scenario were significantly related,  $\phi = .46$ ,  $p < .001$ , two-tailed, suggesting that behaviour in the hypothetical scenario was consistent with self-reported attitudes towards committing sexual aggression.

Other preliminary analyses indicated that a number of research findings in the sexual aggression literature were replicated in the pub sample. There was a positive correlation between number of lifetime sexual intercourse partners and whether participants engaged in hypothetical sexual aggression in the scenario,  $r_{pb} = .44$ ,  $p < .001$ , two-tailed. This result is consistent with previous research that has found that men who engage in sexual aggression report that they are more sexually experienced (e.g., Abbey et al., 2001). A significant association was found between BAC and self-reported willingness to engage in nonconsensual sexual intercourse ( $r_{pb} = .30$ ,  $p < .05$ , two-tailed), and the relationship between BAC and lifetime sexual partners was also significant and positive ( $r_s = .33$ ,  $p < .001$ ,

two-tailed). These results are in keeping with previous research that has found that increased levels of alcohol use are associated with sexual promiscuity and engaging in sexual aggression (e.g., Abracen, Looman, & Anderson, 2000).

Finally, several validity checks were performed to analyse whether the study procedures had any unanticipated effects on the measures. Engagement in hypothetical sexual aggression in the scenario did not vary depending on whether men completed the personal questionnaire before or after the scenario ( $\phi = .04$ ,  $p = .61$ ), or participant age ( $r_{pb} = .04$ ,  $p = .53$ ), nor was it related to the public house in which the scenario was completed ( $\chi^2(4) = 2.92$ ,  $p = .57$ ). Additionally, the particular woman pictured in the photograph was not associated with engagement in hypothetical sexual aggression ( $\chi^2(3) = .08$ ,  $p = .99$ ); the rate of sexual aggression ranged from .10 to .14 across the 4 women. Finally, BAC scores were submitted to a 2 (woman's clothing) x 2 (woman's intoxication) factorial ANOVA, and no significant effects were found (all  $F$ 's < 1). Taken together, the preliminary results supported the reliability of the procedures and measures; therefore, we proceeded to test the study's hypotheses.

### *Data Analysis Overview*

The relationship between each of the experimental variables (woman's clothing and woman's intoxication) and sexual aggression was initially examined by Kaplan–Meier survival analysis. The relationship between sexual aggression and the predictor variables was then modeled using Logistic Regression.

### *Associations between the Experimental Factors and Hypothetical Sexual Aggression*

*Woman's Clothing.* Hypothetical sexual aggression was committed by 21.6% of

participants when the woman wore revealing clothing and by 3.6% of participants when she wore conservative clothing. This pattern of results was observed across all 4 women who were portrayed in the scenario; hence, data were collapsed across women in all of analyses that are reported in this section and subsequent sections of the Results.

The association between woman's clothing and sexual aggression was statistically significant, Log Rank  $\chi^2(1) = 9.21, p < 0.05$ , with those participants in the revealing condition remaining in the scenario longer ( $M = 17.53, SEM = .98, \text{Median} = 17$ ) than those in the conservative condition ( $M = 13.89, SEM = .80, \text{Median} = 14$ ). The association between clothing and hypothetical sexual aggression is displayed in Figure 1 (right panel).

*Woman's Intoxication.* Sexual aggression was committed by 15.1% of participants in the hypothetical scenario in which the woman was intoxicated and by 9.5% of participants in the condition in which the woman was portrayed as sober. The association between sexual aggression and the woman's level of intoxication was not statistically reliable, Log Rank  $\chi^2(1) = 2.40, p = .12$ . The association between intoxication and hypothetical sexual aggression is displayed in Figure 1 (left panel).

#### *Multivariate Modeling of Sexual Aggression*

Logistic regression models were fit to the data to assess the association between the predictors and sexual aggression. First, sexual aggression was modeled as a function of revealing clothing, the woman's intoxication, and BAC scores. The woman's clothing variable was coded as 1 if the woman in the scenario was wearing revealing clothing, and 0 if she was wearing conservative clothing. Woman's intoxication level was coded as 1 if the woman in the scenario was drinking, and 0 if she was not. A second model was also fit, which included the individual predictors and their interaction terms. The interactions were followed up with simple slope analysis (Aiken & West, 1991). The results are presented in

Table 1.

The overall fit of the first model was statistically significant,  $\chi^2(3) = 31.82, p < .001$ . As can be seen in Table 1, BAC and the woman's clothing were each positively associated with hypothetical sexual aggression, but woman's intoxication was not. The second model, which included the BAC, woman's clothing and woman's intoxication variables as well as the interaction terms was also statistically significant overall ( $\chi^2(7) = 44.61, p < .01$ ), and it produced a significantly better fit to the data compared to the first model,  $\chi^2(4) = 12.42, p < .05$ . As indicated in Table 1, only the interaction between woman's clothing and BAC was significantly associated with hypothetical sexual assault in the second model. These results indicate that hypothetical sexual aggression was more likely if BAC was relatively high and if the woman in the scenario was wearing revealing clothing. Figure 2 indicates that in the revealing clothing condition BAC levels were positively related to committing hypothetical sexual aggression, whereas in the conservative clothing condition there was little to no relationship between BAC levels and sexual aggression. A simple slope analysis indicated that the revealing clothing slope was significantly greater than zero ( $\beta = .50, SE = .12, p < .001$ ), whereas the conservative clothing slope did not significantly differ from zero ( $\beta = -.19, SE = .22, p > .05$ ).

#### *Consent Misperception*

Men's responses to the post scenario questionnaire were analyzed to determine whether or not they thought that the sexual contact that took place was consensual. Among the men who engaged in sexual aggression in the hypothetical scenario, 100% believed that all of the sexual contact that occurred was consensual.

#### Discussion

The AMT framework predicts that sexually aggressive behaviour will vary depending on whether inhibitory or disinhibitory cues are more salient to the intoxicated person. For example, if a person is focusing on cues that disinhibit sexual aggression, they will not have the cognitive capacity to also take into account cues that would inhibit sexual aggression if they are intoxicated. Previous laboratory research has found that AMT predicts sexual aggression in hypothetical situations. These laboratory studies have demonstrated that men can be more likely to condone sexual aggression in the presence of inhibiting cues when they are under the influence of alcohol. The present study was carried out to test whether the AMT sexual aggression framework could be generalised to a naturalistic setting that is often antecedent to sexual aggression.

The results indicated that pub patrons were more likely to engage in hypothetical sexual aggression if their BAC was relatively high, but only when the woman was wearing revealing clothing. This result suggests that revealing clothing was a disinhibiting factor for sexual aggression. Intoxicated men attended more to the clothing the woman wore rather than inhibiting factors portrayed in the scenario, such as the woman verbally indicating that she did not want to engage in sexual contact and physically pushing the male away. Moreover, all of the men who committed hypothetical sexual assault reported that they thought the woman in the scenario had consented to all of the sexual contact that took place. Taken together, the results suggest that in deciding whether they should continue their sexual advances, the woman's revealing clothing was more influential than the woman's protestations for a subset of the participants who had drunk more heavily. Thus, the AMT sexual aggression framework was found to generalise to a sample of patrons from public houses.

The findings from this study are important because they demonstrate that AMT can be generalised to a field setting that is often antecedent to sexual aggression. Field research that examines whether a given theory applies to the types of situations to which the theory intends to be applied is essential. Strengths of the current approach were that men elected to be in a bar environment on the day of testing, and they also self-determined their intoxication level and how much sexual activity took place in the hypothetical scenario. However, having said that, enhanced external validity often comes at the expense of a study's internal validity. The present study's results do not demonstrate that BAC level caused the pub patrons to engage in hypothetical sexual aggression at a higher rate, as participants were not randomly assigned to alcohol conditions. Rather, the results of the study demonstrate that the relationship between alcohol intoxication level and sexual aggression in a field setting can be predicted by AMT, a theory of sexual aggression that was developed in the laboratory. What is more, previous research conducted in the lab has found that alcohol expectancies can influence men's assessments of sexual aggression scenarios (Wydra, Marshall, Earls & Barabee, 1983). Namely, men who are told to expect to receive alcohol are more likely to view sexual aggression as an appropriate response. However, expectancy effects tend to be smaller compared to the effect of actually receiving alcohol or not (regarding expectancy effects also see Johnson, Noel, & Sutter-Hernandez, 2000; Norris, Davis, George, Martell, & Heiman, 2002; Marx, Gross, & Adams, 1999). Nevertheless, it is possible that pub patrons' alcohol expectancies coupled with their having consumed alcohol influenced scenario responses.

A particularly disturbing finding in the present study was that higher BAC levels were associated with increased reporting that one would be willing to engage in non-consensual

sexual intercourse with a woman if there would be no legal repercussions. This association might indicate that sexually aggressive men self-intoxicate to higher levels compared to their counterparts. There is research to suggest that sex offenders are more likely to be problem drinkers than non-offenders (Abracen, Looman, & Anderson, 2000; Borowsky, Hogan, & Ireland, 1997; McKeown, Jackson, & Valois, 1998). Moreover, among undergraduate men, just over half who self-reported that they had engaged in sexual violence met the diagnostic criteria for alcohol abuse or dependence, whereas only 25% of men who did not report sexual violence met such criteria (Ouimette, 1997). Our findings underscore the utility of research that examines factors that moderate the relationship between alcohol use and sexual aggression. For example, in controlled laboratory research, the relationship between alcohol intoxication and engaging in aggression has been found to be stronger in men and women who believe that aggression is personally and socially acceptable (Levinson, Giancola, & Parrott, 2011). Additionally, hostility and the tendency to misinterpret a woman's sexual intentions have been found to moderate the relationship between alcohol intoxication and hypothetical sexual aggression (Abbey et al., 2009).

Given that alcohol use on the part of victims and perpetrators is frequently found in reported rape cases (see Brecklin & Ullman, 2001 and Feist, Lawrence, McPhee, & Wilson, 2007), the application of these findings can be far reaching in terms of educating the general public and in terms of stimulating further research. Previous research has demonstrated that perpetrators of rape are excused from committing rape because of their alcohol intake (Maurer & Robinson, 2008), which is problematic given the present study's finding that higher BAC levels in males are associated with a reported increased willingness to engage in sexual aggression. Similarly, within criminal justice personnel, the presence of alcohol within rapes has been associated with police officers defining the rape as dubious (Krahe,

1991) and with judges using it as a mitigating factor in sentencing decisions (Coates & Wade, 2004).

Public health campaigns that focus people's attention on cues that inhibit sexual aggression can be used to prevent sexual aggression. For example, in keeping with one of Giancola and colleagues (2009, 2010) suggestions for reducing aggression in intoxicated persons, drinking establishments can have posters and drink coasters that have slogans such as, "Drink, rape, go to jail". Such campaigns may even suppress aggression to a larger extent in intoxicated compared to sober individuals, as AMT predicts that intoxicated individuals who are focused on inhibitory cues will not have the cognitive capacity to attend to and process disinhibitory cues (see Giancola & Corman, 2007). Additionally, involving law enforcement in launching such campaigns would teach criminal justice personnel about AMT and perhaps thereby promote greater objectivity in the processing of rape cases that involve alcohol.

Licensed establishments, of course, are not in and of themselves determinants of behaviour. For instance, alcohol establishments may attract people who are aggressive, as there is evidence to suggest that people who are hostile and prone to aggression are more likely to drink in bars rather than elsewhere (Treno et al., 2008). However, drinking establishments may elicit aggressive behavioural tendencies. Bars and nightclubs may prime sexual expectations, leading some men to expect that female patrons, especially if they are drinking, are keen to engage in sex (Parks & Scheidt, 2000). Additionally, drinking environments may activate aggressive behavioural scripts, especially when a drinking establishment is located within an impoverished and socially disorganised neighbourhood (Sampson, Raudenbush, & Earls, 1997). Finally, it is probably the case that not all drinking

establishments are equally likely to elicit social deviance. For example, evidence suggests that aggression is more likely in crowded and poorly ventilated drinking establishments (Graham et al., 2004), perhaps because people in these types of venues drink alcohol at a faster rate, which in turn leads them to aggress in response to their discomfort (see Anderson et al., 2007).

It should be kept in mind that sexual aggression in the present study was measured in a hypothetical scenario for obvious ethical reasons. Of course, what men do in a hypothetical situation might very well differ from how they would behave in real life. Having said that, other research has found that men's self-reported willingness to engage in sexual aggression corresponds with behavioural measures of arousal to rape depictions (Malamuth, 1983). Additionally, although the use of a scenario as a stimulus for sexual aggression allows for controlling numerous variables, the situation that we presented to participants only captured a small portion of potential inhibitors and disinhibitors of sexual aggression. In particular, alcohol intoxication on the part of the woman in the scenario and hypothetical sexual aggression were not significantly related, though the association was in the expected direction. One possible reason why the association was not found is because visual cues rather than just a verbal description of a woman acting intoxicated might be needed to elicit the association. Additionally, future research is needed to address whether the relationships observed in this study would hold in scenarios in which the woman is not portrayed as a stranger. Men may be more likely to make inferences about a woman's sexual desires based on stereotypical cues if she is an acquaintance rather than a stranger. Finally, additional research is needed to determine whether the difference in strength between a given sexual assault inhibitor and disinhibitor affects the likelihood of sexual

assault. A particularly strong inhibitor might possibly lead men to focus their attention away from a disinhibiting sexual contact cue.

In sum, Alcohol Myopia Theory was found to generalise to a sample of participants obtained from public houses. Hypothetical sexual aggression was linked with BAC when the woman in the scenario was wearing revealing clothing. These results suggest that some men with relatively high BAC levels might focus on clothing as a cue for judging a woman's sexual availability rather than cues that inhibit sexual aggression.

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Table 1. Logistic Regression Analysis of Hypothetical Sexual Aggression as a Function of Blood Alcohol Level (BAC), Woman's Clothing, and Woman's Drinking.

	$\beta$	<i>SE</i>	Wald	<i>df</i>	Sig	Exp( $\beta$ )
Model 1:						
BAC	0.35	0.09	14.68	1	0.00	1.41
Woman's Clothing	2.38	0.69	11.77	1	0.00	10.77
Woman's Drinking	0.55	0.57	0.94	1	0.33	1.74
Constant	-5.27	0.87	36.28	1	0.00	0.01
Model 2:						
BAC	-0.10	0.25	0.16	1	0.69	0.91
Woman's Clothing	-3.19	2.58	1.53	1	0.22	0.04
Woman's Drinking	0.37	1.76	0.04	1	0.84	1.44
BAC x Woman's Clothing	0.79	0.38	4.35	1	0.04	2.20
BAC x Woman's Drinking	-0.54	0.85	0.41	1	0.52	0.58
Woman's Clothing x Woman's Drinking	2.40	3.07	0.61	1	0.43	11.07
BAC x Woman's Clothing x Woman's Drinking	0.31	0.91	0.12	1	0.73	1.36
Constant	-2.63	0.64	9.67	1	0.00	0.07

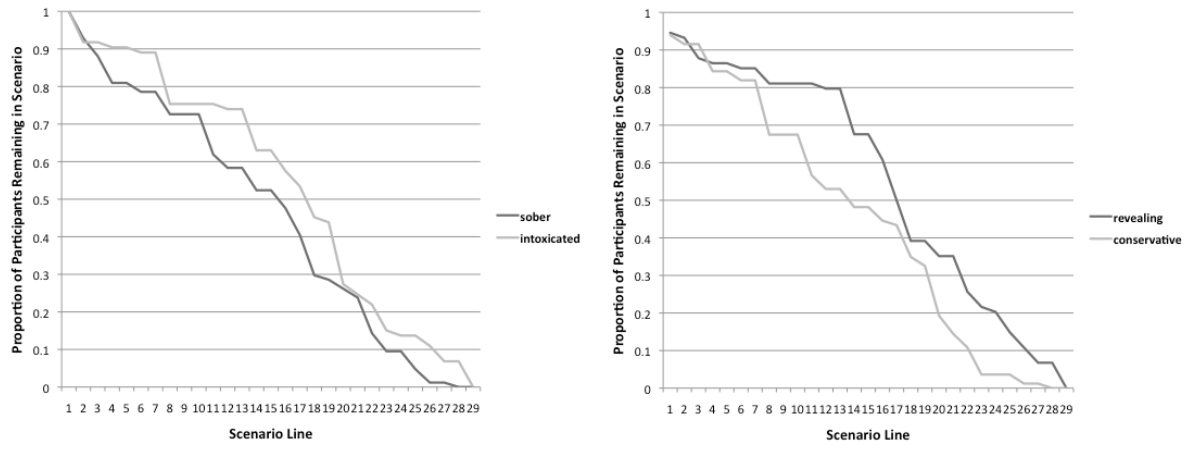
## Figure Caption

Figure 1. Kaplan-Meier survival plots of the experimental factors in relation to hypothetical sexual aggression. The plot on the left displays the results for the sobriety condition, the graph on the right the clothing condition. At line 23 of the hypothetical intimate encounter, the woman stopped consenting to sexual contact. Therefore, the hypothetical sexual activity that took place after line 23 would constitute a legally definable act of sexual aggression.

Figure 2. The interaction between woman's clothing and BAC on the probability of engaging in hypothetical sexual aggression in the scenario.

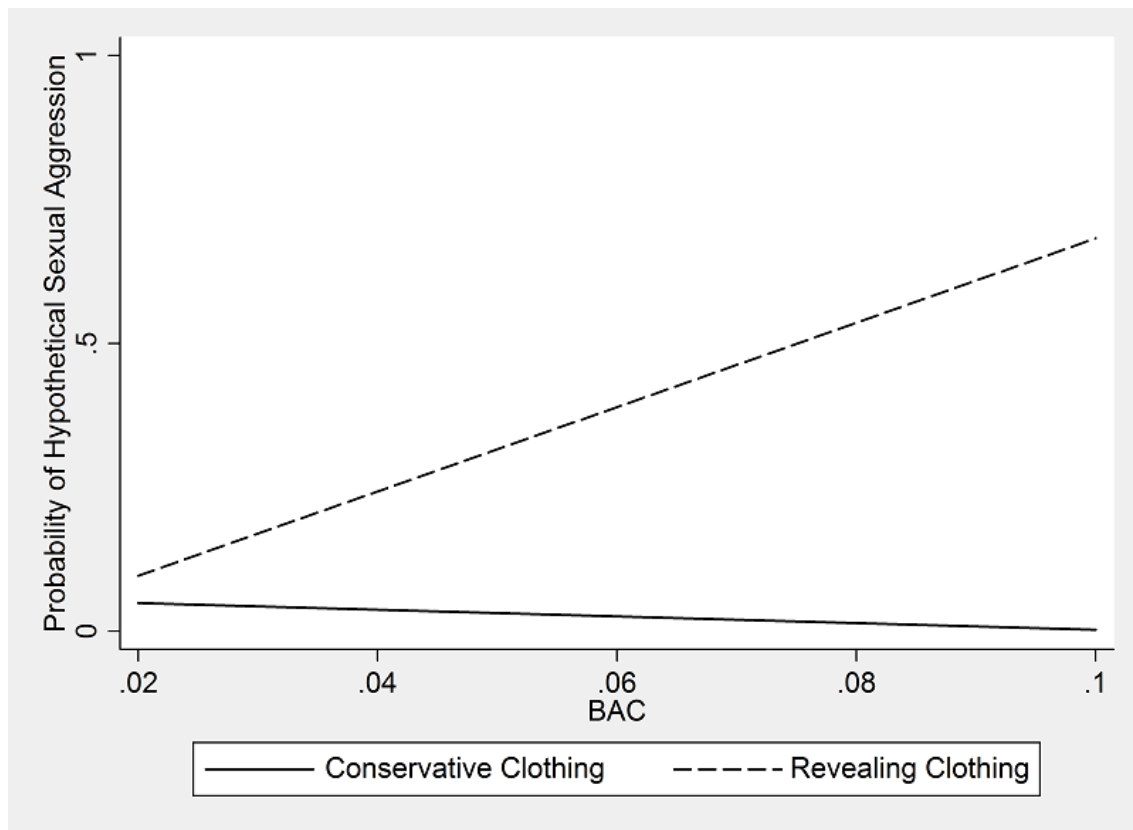
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Figure 1



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Figure 2



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