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Reducing Alcohol-Related Aggression: Effects of a Self-Awareness Manipulation and Locus of Control in Heavy Drinking Males

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Abstract

Alcohol Myopia Theory (AMT; Steele & Josephs, 1990) purports that alcohol facilitates aggression by narrowing attentional focus onto salient and instigatory cues common to conflict situations. However, few tests of its counterintuitive prediction – that alcohol may decrease aggression when inhibitory cues are most salient – have been conducted. The present study examined whether an AMT-inspired self-awareness intervention manipulation would reduce heavy drinking men's intoxicated aggression toward women and also examined whether a relevant individual variable, locus of control, would moderate this effect. Participants were 102 intoxicated male heavy drinkers who completed a self-report measure of locus of control and completed the Taylor Aggression Paradigm (Taylor, 1967). In this task, participants administered electric shocks to, and received electric shocks from, a fictitious female opponent while exposed to an environment saturated with or devoid of self-awareness cues. Results indicated that the self-awareness manipulation was associated with less alcohol-related aggression toward the female confederate for men who reported an internal, but not an external, locus of control. Findings support AMT as a theoretical framework to inform preventative interventions for alcohol-related aggression and highlight the importance of individual differences in receptivity to such interventions.

Keywords

Alcohol consumption; Attention-allocation model; Physical aggression; Prevention; Intervention

There has been a call for research to examine interventions for men's alcohol-related aggression *during* episodes of acute intoxication (Gallagher & Parrott, 2011; Giancola, Duke, & Ritz, 2011; Giancola, Josephs, DeWall, & Gunn, 2009; Giancola, Josephs, Parrott, & Duke, 2010). Proposed approaches to intervention are grounded in the attention-allocation

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model (AAM) of Alcohol Myopia Theory (Steele & Josephs, 1990), which asserts that intoxicated individuals allocate their attention such that they perceive and process only the most salient cues of a situation. Accordingly, in situations that involve conflict, the AAM would predict that intoxicated individuals are more likely to attend to cues of provocation (e.g., a verbal insult), as opposed to cues of inhibition (e.g., legal consequences of aggression). However, the AAM allows for the counterintuitive hypothesis that inebriated persons will behave *less aggressively* than sober individuals if their attention is redirected away from cues of instigation by more salient cues of inhibition.

This counterintuitive prediction has compelling implications for interventions designed to prevent aggression among acutely intoxicated individuals. Giancola and colleagues (2009, 2010) posit that interventions can inhibit alcohol-related aggression by shifting attention away from aggression promoting internal states (e.g., negative affect, anger, rumination) and/or toward aggression inhibiting internal states (e.g., empathy, self-awareness). The present investigation focused specifically on the putative self-awareness mechanism, wherein exposure to self-awareness cues has been shown to inhibit alcohol-related aggression (Bailey, Leonard, Cranston, & Taylor, 1983; Berman, Bradley, Fanning, & McCloskey, 2009). However, these studies did not examine for whom self-awareness interventions have the greatest impact. This is a key weakness, as pertinent literature suggests that individuals can differ in their perceived salience of and response to self-awareness cues (e.g., Carver, 1974; 1975). For instance, objective self-awareness theory (Duval & Wicklund, 1972) posits that self-focused attention will facilitate behavior(s) which conform to salient personal- or situational-based norms. As such, individuals who possess personal norms which emphasize self-awareness and discourage aggression should perceive self-awareness cues as highly salient and be predisposed toward non-aggressive responses to such cues. One such construct is locus of control. Rotter (1966; 1975; 1990) defined locus of control as the extent to which individuals believe that the outcomes of their behavior are a function of internal factors (e.g., own behavior, personal characteristics) versus external factors (e.g., other people's behavior, situational characteristics). Extant research has demonstrated that individuals who endorse an internal, relative to an external, locus of control evidence lower levels of physical aggression (e.g., Gallagher & Parrott, 2010; Schmidt, Lisco, Parrott, & Tharp, in press; Whitaker, 2013).

The present study sought to examine the effects of a self-awareness manipulation and self-reported locus of control on heavy drinking men's alcohol-related aggression toward women. Heavy drinkers were intentionally recruited because they are most at-risk for perpetrating alcohol-related aggression (Chermack et al., 2000; Parrott & Giancola, 2006) and formative research in this area has not exclusively sampled this population. It was hypothesized that the self-awareness manipulation would reduce intoxicated aggression to a greater extent in men with an internal, relative to an external, locus of control.

1. Method

1.1 Participants

Participants were 109 self-identified heterosexual male heavy drinkers who were recruited from Atlanta, GA through newspaper and online advertisements. Heavy drinking was

defined as consumption of at least five drinks per occasion a minimum of two times per month (NIAAA, 2004). Participants were excluded if they reported attempts to seek treatment for an alcohol use disorder or any medical condition for which alcohol consumption is contraindicated, or perpetration of severe physical aggression toward women in the last year. Of these participants, one did not comply with the experimental protocol, one became nauseous during the experimental procedure, one requested that his data be deleted, and four were not deceived (see below). This left a final sample of 102 participants (see Table 1). This study was approved by the university's institutional review board.

1.2 Belief in Personal Control Scale (BPCS; Berrenberg, 1987)

This 45-item Likert-type scale assesses multiple dimensions of control. The well-validated 19-item General External Control subscale was used to measure locus of control. Participants rate items on a 1 (always true) to 5 (never true) scale, with higher scores indicating a greater internal locus of control. An alpha reliability of .84 was obtained.

1.3 Self-Awareness Manipulation

This manipulation was informed by techniques proposed by Giancola and colleagues (2009, 2010) and adapted from a well-validated self-awareness manipulation (Berman et al., 2009). In the self-awareness condition, the participant sat at a table with a monitor and a keyboard. The 8 × 10 room was equipped with two large mirrors mounted on adjacent walls about three feet in front of the participant. Three cameras were also visible which ostensibly monitored study procedures. One camera was linked to a television which displayed the participant's behavior in real-time. The other cameras were mounted on the wall to the left of the participant's desk. Participants also received a drink coaster that read "What does my behavior say about me?" In the control condition, the participant's room was devoid of these self-awareness cues.

1.4 Procedure

Participants completed a questionnaire battery containing the BPCS (Session 1). Within two weeks, they presented to the laboratory for Session 2. Urn randomization (Stout, Wirtz, Carbonari, & Del Boca, 1994) was used to randomly assign participants to a self-awareness ($n = 50$) or control group ($n = 52$). Instructions for the Taylor Aggression Paradigm (TAP; Taylor, 1967) were provided. In this well-validated task (Giancola & Parrott, 2008), participants were led to believe that they would engage in a reaction time competition in which electrical shocks are administered to and received from a female "opponent." The hardware and software for the task was developed by Coulbourn Instruments (Allentown, PA) and Vibranz Creative Group (Lexington, KY), respectively. All participants were then administered a dose of .99g/kg of 95% alcohol mixed at a 1:5 ratio with Tropicana orange juice over a 20 minute period (Duke, Giancola, Morris, Holt, & Gunn, 2011). Participants' pain thresholds were then assessed to determine the intensity parameters for the shocks they would receive. Shocks were administered in an incremental stepwise intensity method from the lowest available shock setting, which was imperceptible, until the shocks reached a reportedly painful level. All shocks were administered through two finger electrodes. The

experimenter was in the adjacent control room and communicated with the participant through an intercom.

Upon reaching a breath alcohol concentration (BrAC) of .08, a gender-relevant provocation was delivered (Cohn, Seibert, & Zeichner, 2009). Participants received a fictitious, pre-constructed paper graph of their personality profile which indicated that they possessed traits typically seen in women and few traits typically seen in men. The female confederate then provided an emasculating written message related to the participant's ostensible profile. The TAP procedure commenced immediately thereafter and consisted of two successive 16-block trials. Participants were told that they had a choice of 10 different shock intensities to administer at the end of each winning trial for a duration of their choosing. At the end of a losing trial, participants received shock intensities between "1" and "2" (Block 1) and between "9" and "10" (Block 2). Following each trial, a specially designed "volt meter" and the illumination of one of the 10 "shock lights" [ranging from 1 (low) to 10 (high)] on the computer screen signaled to the participant the shock that he or the opponent selected. Direct physical aggression was operationally defined as the average intensity of the shocks participants selected. Upon completion of the TAP, BrACs were measured, participants were debriefed, provided with psychoeducational materials about the hazards of heavy drinking, compensated, and escorted to prearranged transportation.

2. Results

2.1 Manipulation Checks

During a brief post-TAP interview, all participants in the self-awareness condition reported attending to the intervention cues. Four participants reportedly did not believe they were competing against another individual and/or that the task was a measure of reaction time. With BrAC as the dependent variable, a 2 (Condition) x 2 (Time) mixed model ANOVA detected a significant main effect of time, $F(1, 100) = 4.88, p = .029$, which indicated that participants' BrACs increased significantly from pre-TAP ($M = .099\%$, $SD = .078\%$) to post-TAP ($M = .115\%$, $SD = .021\%$). A significant interaction was not detected, which indicated that BrAC levels did not differ between the self-awareness and control conditions across time. A series of one-way ANOVAs and chi-square analyses did not detect group differences for any demographic or study variables.

2.2 Aggression Data

Mean centered locus of control, the dummy coded condition variable (self-awareness condition = 0, control condition = 1), and their interaction were entered hierarchically into a linear regression model. At this stage of research, our goal was to identify the practical significance of a theoretically-based self-awareness manipulation on heavy drinking men's perpetration of alcohol-related aggression toward women. Thus, the strength of observed effects was emphasized to prevent sole reliance on traditional statistical significance in null hypothesis testing, which is not ideal to theory testing (Vilicer et al., 2008) given well-documented weaknesses (Chow, 1996; Hunter & Schmidt, 1996).

A moderately sized main effect of self-awareness condition was detected ($\beta = .256, p < .01$). This finding indicated that participants in the self-awareness condition displayed lower

levels of aggression than participants in the control condition. The Condition x Locus of Control interaction was small-to-moderately sized but not statistically significant ($\beta = .171$, $p = .200$). Subsequent plotting of the interaction's simple slopes (Cohen, Cohen, West, & Aiken, 2003) demonstrated that the relation between locus of control and aggression was negative, significant, and moderately sized for participants in the self-awareness condition ($\beta = -.256$, $p < .05$), which reflects a 62% decrease in intoxicated aggression ($OR = .38$, 95% $CI = .19, .78$; Borenstein, Hedges, Higgins, & Rothstein, 2009). This relation was essentially zero and not significant for participants in the control condition ($\beta = -.008$, $p = .955$). This effect was driven by lower levels of aggression in men with an internal locus of control who were exposed to the self-awareness condition (see Figure 1).

3. Discussion

This investigation provides preliminary data to support activation of self-awareness as an effective intervention for heavy drinking men's alcohol-related aggression toward women. Results are consistent with past findings that self-awareness manipulations reduce alcohol-related aggression (Bailey et al., 1983) and that AAM-inspired manipulations reduce attention toward aggression stimuli and physical aggression among intoxicated men (Gallagher & Parrott, 2011). Moreover, findings substantially extend this work by utilizing a sample of heavy drinking men and a gender-relevant masculinity threat from a female confederate.

Results further evidence that the self-awareness manipulation was associated with less alcohol-related aggression toward the female confederate for men who reported an internal, but not an external, locus of control. These data suggest the perceived salience of and/or receptivity to self-awareness cues was stronger among men with an internal locus of control, perhaps due to their tendency to attribute behavioral outcomes to internal factors. This attentional shift presumably led to lower levels of aggression. Consistent with studies which indicate that individuals differ in their response to self-awareness cues (Carver, 1975), the present data suggest that interventions which aim to shift attention toward the self are particularly effective for individuals who are predisposed to self-focused attention.

Though novel in approach, several limitations merit attention. First, the observed interaction effect did not reach statistical significance. Though this effect was small-to-medium in size by conventional definitions (Cohen, 1992), it was substantially larger ($f^2 = .03$) than median interaction effect sizes observed using regression with categorical moderators ($f^2 = .002$; Aguinis, Beaty, Boik, & Pierce, 2005). Thus, although this finding requires replication with a larger sample size, it appears to have clear practical significance. Second, only one theoretical mechanism of alcohol-related aggression was examined (Giancola et al., 2009). Moreover, this putative self-awareness mechanism was not directly tested. Thus, it was not possible to confirm that self-focused attention mediated reductions in alcohol-related aggression. Future studies that employ *in vivo* measures of attention, cognition, and affect will be better suited to directly test this and other mechanisms (Eckhardt, Parrott, & Sprunger, 2015).

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Highlights

- Tested effect of a self-awareness intervention on men's intoxicated aggression (IA)
- Tested locus of control as moderator of this relation
- The intervention reduced intoxicated aggression toward women
- This effect was found only among men with an internal locus of control
- Results indicate importance of individual differences in prevention of IA

Figure 1.

Effect of locus of control on alcohol-related aggression among participants exposed to self-awareness or control cues.

Table 1

Descriptive Data for Demographic and Study Variables

Measure	<i>M</i>	<i>SD</i>	<i>Range</i>
Age	36.05	11.40	21–59
Years of education	14.13	2.4	10–20
Income	\$20,347	\$17,759	\$2,500–\$70,000
Average drinking occasions per week	3.26	109.96	30–365
Average drinks per drinking day	7.47	3.44	3.5–25
External locus of control	67.83	10.6	22–88
Average shock intensity	5.08	2.57	1–10
Race (%)			
African American	75		
Caucasian	16		
Other racial background	9		

Note: $n = 102$; Possible scale range for Locus of Control = 19–95.