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The effects of public self-consciousness and embarrassability on college student drinking:
Evidence in support of a protective self-presentational model

Lizabeth A. Crawford, Katherine B. Novak

Abstract

In this article we examine the effects of public self-consciousness (PSC) and a cross-situational reactivity to embarrassing encounters (EMB) on college students' levels of alcohol consumption by levels of perceived peer drinking. The analysis of self-report data from two undergraduate samples ($n = 118$ and $n = 195$) yielded virtually identical results and suggests that PSC and EMB affect alcohol use primarily among students with friends who drink heavily. Among these individuals, our findings are consistent with a protective self-presentational model. While PSC increased levels of alcohol consumption among students who believed drinking to be prevalent within their social circle if they were low in EMB, a susceptibility to embarrassment in response to the transgressions of self and others counteracted this tendency.

Recent figures suggest that almost half of college undergraduates abuse alcohol (Hingson, Zha, & Weitzman, 2009). Although students drink for a variety of reasons (Baer, 2002), the desire for social acceptance is a primary motivating factor. When drinking heavily is perceived as normative, college undergraduates frequently use alcohol to convey positive impressions to their peers (Borsari & Carey, 2001). Given this, self-presentational theories speak directly to the issue of campus drinking. In general, these models focus on people's tendencies to avoid negative affective experiences by strategically adopting behaviors designed to enhance others' evaluations of their public performances (e.g., Baumeister, 1982; Goffman, 1956).

Within the social psychological literature, Fenigstein, Scheier, and Buss's (1975) public self-consciousness scale has often been used to measure concerns about the images one conveys to others. These seven items assess the degree to which people recognize that they are the potential objects of others' scrutiny across public settings (Fenigstein et al., 1975). Given their chronic focus on others' evaluations, people high in public self-consciousness are more attuned to external standards (Buss, 1980), more susceptible to social anxiety (Leary, 1991) and embarrassment (Edelmann, 1985)—emotions specifically tied to the process of impression management (Goffman, 1956; Leary, 1986), and more likely to conform to social norms than individuals low in this form of awareness (Froming & Carver, 1981).

Despite this, public self-consciousness itself is not related to levels of alcohol consumption among college undergraduates (Crawford & Novak, 2000; LaBrie, Pedersen, Neighbors, & Hummer, 2008). This attributional tendency may, however, affect alcohol use among certain subgroups of students. In particular, high public self-consciousness has been associated with low levels of alcohol consumption among males who belong to fraternities and other campus

organizations (LaBrie, Hummer, & Neighbors, 2008; Park, Sher, & Krull, 2006), individuals at risk for alcohol abuse who are likely to be concerned about their identities and the potential social damage associated with drinking to excess.

The latter results are consistent with the protective self-presentational framework. This model, developed with reference to shyness (Arkin, 1981), focuses on the link between a fear of social disapproval and the use of protective self-presentation strategies, such as the expression of neutral or non-threatening attitudes and conformity to situational norms (see Arkin, Lake, & Baumgardner, 1986). Given alcohol's propensity to impair the higher-level cognitive processes underlying the capacity for the self-regulation of behavior, the protective self-presentational model also suggests that people concerned about gaining others' approval will limit their drinking in order to avoid engaging in socially inappropriate behavior in public settings (Bruch, Rivet, Heimberg, & Levin, 1997).

Studies documenting a negative relationship between shyness and alcohol consumption support this perspective (Bruch et al., 1992; Bruch et al., 1997). An inverse association between social anxiety, the affective component of shyness (Leary, 1986), and levels of drinking has also been established (e.g., Eggleston, Woolaway-Bickel, & Schmidt, 2004; Ham & Hope, 2005).

Unlike social anxiety, which is rooted in social awkwardness and concerns about what might occur, embarrassment occurs following the violation of social norms and can happen to anyone (Miller, 1996). Although the inhibition and social anxiety that characterize shyness may make people prone to embarrassment (Bruch et al., 1997), individuals with a dispositional susceptibility to embarrassment (embarrassability) do not typically exhibit the self-presentational concerns associated with shyness (Miller, 1995). Thus embarrassability is distinct from both shyness and social anxiety, and it is likely to influence behavior only when there is a risk for impropriety. Regardless of their social competence, people high in embarrassability worry about violating social norms and readily become flustered whenever they do so (Miller, 2009).

Consistent with the tenets of the protective self-presentational perspective, Parrish and colleagues (1990) have linked embarrassment due to alcohol-induced facial flushing to low levels of drinking among individuals of Asian descent. Similarly, reactivity to conspicuousness, a particular subtype of embarrassability (Miller, 1996; Modigliani, 1968), has been associated with reductions in the risk for binge drinking (Crawford & Novak, 2000) and low levels of alcohol consumption among students who expect alcohol to make them more assertive socially (Crawford & Novak, 2004).

Embarrassability may also affect the relationship between public self-consciousness and drinking. People high in public self-consciousness are more likely than other individuals to engage in self-protective impression management strategies such as self-handicapping (Shepperd & Arkin, 1989) and to withdraw from embarrassing social encounters (Froming, Corley, & Rinker, 1990). Given this, students with a dispositional susceptibility to embarrassment may be another subset of individuals among which public self-consciousness is inversely related to

levels of alcohol consumption for self-presentational reasons. Like the males high in public self-consciousness who were involved in campus organizations (LaBrie, Hummer, et al., 2008; Park et al., 2006), and thus had a stake in avoiding public intoxication, students high in public self-consciousness with a susceptibility to embarrassment may seek to avoid heavy drinking in order to reduce their risks for engaging in socially inappropriate behavior.

Given their focus on various subtypes of embarrassability, in particular reactivity to conspicuousness, none of the studies reviewed earlier considered the relationship between alcohol use, public self-consciousness, and a general susceptibility to embarrassment. We assess the effects of public self-consciousness on college students' use of alcohol by levels of embarrassability in this paper.

We also examine the role of peer drinking as a conditioning variable. Prior work by LaBrie, Hummer, and colleagues (2008) suggests that the relationship between public self-consciousness and drinking behavior is complex and may be influenced by other variables, including drinking norms. Crawford and Novak's (2000) earlier study on the effects of public self-consciousness and embarrassability on undergraduate drinking was based on the assumption that students in general perceive alcohol use to be a common activity, but their analysis did not include indicators of perceived peer drinking.

Peers' alcohol use is an important determinant of college undergraduates' personal drinking habits (Borsari & Carey, 2001). Insofar as students' use of alcohol is motivated by self-presentational concerns, the belief that alcohol use is normative may make drinking more viable as an impression management strategy (Sharp & Getz, 1996). Regardless of their dispositional attributes, students who perceive drinking as uncommon in their social environment are unlikely to use alcohol for self-presentational reasons. Thus, the belief that alcohol use is normative should moderate the relationship between public self-consciousness, a susceptibility to embarrassment, and drinking.

Hypotheses

Given the self-presentational concerns associated with public self-consciousness, we hypothesize that this form of awareness will increase levels of alcohol consumption among students who believe that drinking is common among their peers, but only if they are low in embarrassability. Among those students high in embarrassability, the desire to avoid the social disinhibition and potentially embarrassing transgressions associated with alcohol intoxication should counteract this tendency. We expect that public self-consciousness will reduce levels of alcohol consumption among these high-embarrassability individuals, despite their belief that drinking is normative, as the avoidance of heavy drinking is a way to protect against self-threatening encounters associated with the violation of social norms.

Perceived norms supportive of alcohol use are presumed to create the context within which individuals are likely to use alcohol to enhance their self-presentations. Thus, we do not

anticipate strong effects of public self-consciousness and embarrassability on levels of drinking among respondents who do not perceive the use of alcohol to be a common activity among their peers.

Sample 1

Sample and Procedures

Students enrolled in introductory sociology courses at a mid-sized private university completed standardized questionnaires, including a range of social-psychological indicators and measures of drinking, in classroom settings. Although this sample may not represent all undergraduates at this university, the classes surveyed were general education courses which attract a broad range of students. Typical of the students at this university, all but eight of the 164 survey respondents were of traditional college age. Given our focus on contextual as well as social-psychological characteristics as determinants of undergraduates' levels of alcohol consumption, we excluded the 8 nontraditional students. Students who indicated that they abstained from alcohol ($n = 26$), and one respondent who did not report whether he or she was a drinker, were also dropped, yielding a study sample size of 129 (46 males and 83 females).

Measures

Public self-consciousness. Public self-consciousness was measured using the seven relevant items from Fenigstein and colleagues' (1975) self-awareness inventory. Diverging from the standard 5-point scale used to score these questions (0 = *extremely uncharacteristic* to 4 = *extremely characteristic*), responses to the public self-consciousness items ranged from 1 (*strongly disagree*) to 4 (*strongly agree*), with possible scores on this measure ranging from 7 to 28 ($\alpha = .72$).

Embarrassability. Respondents' susceptibilities to embarrassment were measured using a revised version of Modigliani's (1968) embarrassability scale (Edelmann, 1985). This measure consists of a series of 22 items that present hypothetical situations designed to elicit varying levels of embarrassment (e.g., "You trip and fall while entering a bus full of people"). Subjects were asked to rate each event on a scale of 0 (*not the least embarrassing*) to 9 (*extremely embarrassing*), with potential scores on this measure ranging from 0 to 198 ($\alpha = .87$).

Peer drinking. Respondents' perceptions of their friends' use of alcohol was based on their answers to the following question. "My friends tend to drink heavily." Response categories for this item ranged from 1 (*strongly disagree*) to 4 (*strongly agree*).

A second measure of peer drinking, reflecting broader campus patterns, was constructed using three questions requiring participants to estimate the number of alcoholic drinks the "typical" student at their university drinks during an average week, the number of drinks a "typical" student drinks at one sitting, and the number of times a "typical" student drank to intoxication

during the month prior to the administration of the survey (see Baer, Stacy, & Larimer, 1991 for a similar operational definition of perceived campus drinking norms). These three variables were standardized to give an equal weight to each item and then combined into a composite index ($\alpha = .82$).

Alcohol use. Four items addressed alcohol use: average number of drinks consumed per week, average number of drinks consumed per sitting, number of times five or more drinks were consumed per sitting during the past two weeks, and number of times intoxicated during the month prior to the completion of the survey. Scores on each of the four drinking variables were standardized and added together into a composite measure of alcohol consumption ($\alpha = .90$).

Sample 2

Sample and Procedures

A survey was administered using a procedure similar to that described earlier to 318 undergraduate students enrolled in introductory social science courses at a (second, slightly smaller) private university. The study sample was comprised of 215 undergraduates of traditional college age who were drinkers (100 males and 115 females) and thus excluded older students ($n = 2$) and abstainers ($n = 85$). Five students who did not report their age and 11 respondents who did not report whether they drank alcohol were also excluded. Ninety percent of the 11 individuals missing on the indicator of drinking status reported that they did not consume alcohol when they were in high school, versus 27% among the self-identified drinkers, suggesting that some of these missing cases were likely to have been abstainers and would have been dropped for this reason anyway.

Measures

With two minor variations, the measures used in this analysis were constructed in a manner identical to the variables in Sample 1. In this second sample, Fenigstein and colleagues' (1975) public self-consciousness items were scored using a four-point scale, ranging from 1 "extremely uncharacteristic of me" to 4 "extremely characteristic of me." The question concerning friends' drinking was also worded somewhat differently than the item described earlier. Here the question read, "My friends drink a lot." Response options were the same as in sample 1 (1 = *strongly disagree* to 4 = *strongly agree*). Internal consistency coefficients for the indices used in sample 2 were as follows: public self-consciousness ($\alpha = .81$), embarrassability ($\alpha = .85$), perceived campus drinking norms ($\alpha = .80$), and composite drinking scores ($\alpha = .89$).

Results

Descriptive statistics and bivariate correlations for both samples are presented in Table 1. Typical of college-age samples, students in both studies exhibited relatively high levels of public self-consciousness (e.g., Knapp & Deluty, 1987) and moderate levels of embarrassability (e.g.,

Miller, 1996). As shown in Table 1, mean scores on the measure of campus drinking norms and on the drinking index were slightly higher in Sample 2. Additional analyses indicated that these differences were not due to extreme scores or the greater proportion of males in the second sample. Thus, they may reflect differences in the drinking behaviors of students across the two campuses.¹ The correlation between embarrassability (EMB) and alcohol use in Sample 2 (Table 1) was not significant when the measure of campus drinking norms was held constant (data not shown).

Table 1. Summary of Intercorrelations, Means, and Standard Deviations for Scores on Measures of PSC, EMB, Perceived Peer Drinking, and Alcohol Use

Measure	1	2	3	4	5	<i>M</i>	<i>SD</i>	<i>Range</i>
1. PSC	—	.25**	.15	-.02	.08	20.28	2.72	12 - 27
2. EMB	.31***	—	.01	-.06	-.04	94.31	28.76	26 - 146
3. FD	.00	-.02	—	.40***	.51***	2.74	.83	1 - 4
4. CN	-.11	-.19**	.17*	—	.43***	19.96	10.65	4 - 63
5. AU	-.07	-.17**	.47***	.50***	—	16.97	18.00	1 - 124
<i>M</i>	20.01	95.39	2.88	23.21	20.23			
<i>SD</i>	4.11	25.77	.73	11.08	16.73			
<i>Range</i>	7 - 28	6 - 158	1 - 4	4 - 67	1 - 70			

Note. Intercorrelations for sample 1 ($n = 118$) are presented above the diagonal, and intercorrelations for sample 2 ($n = 195$) are presented below the diagonal. Means and standard deviations for sample 1 are presented in the vertical columns, and means and standard deviations for sample 2 are presented in the horizontal rows. Means and standard deviations on CN and AU are unstandardized. PSC = public self-consciousness, EMB = embarrassability, FD = friends' drinking, CN = campus norms, and AU = alcohol use.

* $p < .05$

** $p < .01$

*** $p < .001$

A series of OLS regressions were used to assess the relationship between public self-consciousness (PSC), embarrassability (EMB), peers' use of alcohol and composite drinking scores in each of the two samples. As recommended by Aiken and West (1991), we centered our independent variables before computing the requisite cross-products (controls for PSC \times EMB, PSC \times peer drinking and EMB \times peer drinking, as well as the variable representing the PSC \times EMB \times peer drinking interaction).

Fewer than 5% of the respondents were missing on any one measure in either sample. Moreover, further inspection of the two datasets suggested that the data were missing at random. Thus, we used multiple imputation to generate values for the missing data. As recommended by Allison (2002), the cross-product interactions were computed prior to the imputations.

We examined the independent and pooled effects for five imputed datasets for each regression analysis. In both samples, the patterns of results were the same as those obtained using the

¹ While our use of non-representative samples may have contributed to these discrepancies, the manner in which we obtained our respondents (students enrolled in lower-level social science courses) was the same in the two studies.

observed data with listwise deletion of missing cases. Thus, we present results based on the analysis of the actual data ($n_{\text{sample 1}} = 118$, $n_{\text{sample 2}} = 195$).

Overall, the results across samples were strikingly similar. Given this, we discuss the two sets of findings in conjunction.

Neither PSC nor EMB was directly related to alcohol use in either sample. The three way interaction between PSC, EMB, and friends' drinking was, however, significant and sizable in both samples ($b_{\text{sample 1}} = -0.21$, $p = .010$; $b_{\text{sample 2}} = -0.23$, $p < .001$). This was not the case for the cross-product of PSC, EMB and the more general measure of descriptive drinking norms. Thus, this latter interaction was dropped from the analysis.

For ease of interpretation, we divided each sample by level of friends' drinking (low = *disagree* or *strongly disagree with statement that friends drink heavily/a lot*, high = *agree* or *strongly agree with statement that friends drink heavily/a lot*) and examined the interaction between PSC \times EMB within each subgroup. Among students who believed their friends drank moderately or avoided alcohol altogether, the cross product of PSC \times EMB was not statistically significant in either of the two analyses. Although the subsamples upon which these regressions were based were relatively small ($n = 46$ and 55 , respectively), the results were consistent and of minimal magnitude ($b_{\text{sample 1}} = 0.05$, $p = .761$; $b_{\text{sample 2}} = 0.01$, $p = .941$).

As predicted, the interaction coefficients for PSC by EMB were strong enough to reach statistical significance among the subsample of respondents with heavy drinking friends in both studies. These results are presented in Table 2. As shown here, the addition of the cross-product interaction into the statistical model substantially increased the percentage of explained variation in students' drinking behaviors (approximately 6% across samples).²

We used the procedures suggested by Aiken and West (1991) to determine the direction of the significant interaction between PSC, EMB and alcohol consumption among respondents with heavy drinking friends. PSC and EMB were varied from low (one standard deviation below the mean) to high (one standard deviation above the mean). The predicted drinking scores generated using this procedure are presented in Figure 1.³

As shown here, the effects of PSC and EMB on alcohol use among students with heavy drinking friends were similar across campuses. Among students with heavy drinking friends, PSC substantially increased levels of alcohol consumption if they exhibited little reactivity to potentially embarrassing circumstances. Conversely, PSC reduced drinking among students with

² Regressions based on five datasets in which missing data were replaced with imputed values yielded the same pattern of results among both subgroups of respondents (those with friends who were moderate drinkers or abstained from alcohol and those with heavy drinking friends) in both studies.

³ Additional analyses (data not shown) revealed that the slope coefficients for the effects of PSC on drinking at low (one SD below the mean) and at high (one SD above the mean) EMB, shown in Figure 1, were statistically significant in both samples.

Table 2. Multiple Regression Analyses Predicting Alcohol Use From Public Self-Consciousness and Embarrassability Among Students With Heavy Drinking Friends

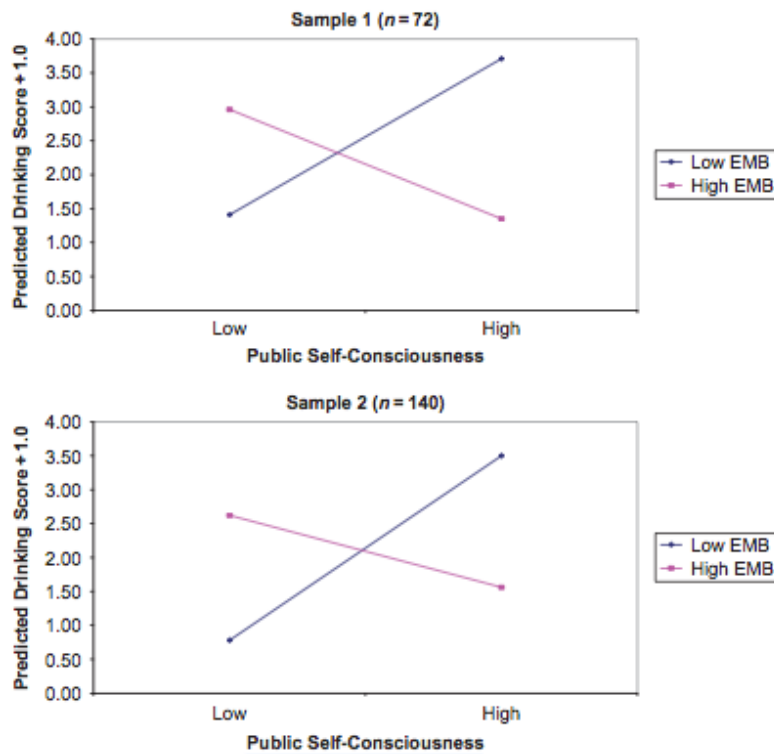
Predictor	Levels of alcohol consumption				
	Sample 1		Sample 2		
	<i>b</i> *	<i>sr</i> ²	<i>b</i> *	<i>sr</i> ²	
Female	-0.40***	.14	-0.38***	.12	
Public self-consciousness	0.04	.00	0.12	.01	
Embarrassability	-0.05	.00	-0.01	.00	
Campus drinking norms	0.38***	.14	0.43***	.17	
Public self-consciousness × embarrassability	-0.26*	.06	0.26***	.07	
Total <i>r</i> ²	.34*		.44***		
<i>n</i>	72		140		

* *p* < .05

** *p* < .01

*** *p* < .001

Figure 1. Interactions between PSC, EMB, and alcohol use among students with friends who drank heavily.



friends who drank heavily if respondents themselves were high in embarrassability. Thus, individuals high in both PSC and EMB had among the lowest levels of alcohol consumption, while students high in PSC but low in EMB were the heaviest drinkers.

Discussion

The purpose of this paper was to test a protective self-presentational model linking public self-consciousness and embarrassability to students' levels of alcohol consumption. Given the importance of contextual factors, in particular perceived normative drinking practices, in shaping college undergraduates' drinking behaviors we examined the role of peer drinking as a conditioning variable.

Consistent with earlier research (e.g., LaBrie, Pedersen, et al., 2008), public self-consciousness was not associated with levels of alcohol consumption in an additive fashion. Embarrassability itself was also unrelated to students' patterns of drinking when the other variables of interest were held constant. Higher-order interactions between PSC, EMB, friends' drinking and alcohol use were, however, statistically significant in both samples.

On the other hand, more general perceptions of peer drinking, based upon estimates of average levels of alcohol consumption among other students at their school, had little influence on the relationship between PSC, EMB and respondents' personal drinking behaviors. This is consistent with prior research suggesting that friends' use of alcohol exerts a stronger influence than broader campus norms on students' drinking habits (Campo et al., 2003).

There was little evidence of a relationship between public self-consciousness, embarrassability, and alcohol use among individuals with friends who drank moderately or abstained from alcohol altogether. This confirmed our hypothesis that the perception that heavy drinking is acceptable would be necessary to activate the self-presentational concerns associated with PSC and EMB, as they relate to college student drinking. It is, once again, interesting to note that it was members of students' immediate social networks, and not simply others on their campus, whose perceived drinking moderated the effects of PSC and EMB on respondents' levels of alcohol consumption.

The estimated effects of PSC and EMB on alcohol use among individuals with friends who drank heavily were strong and in the predicted direction. While PSC was associated with increased levels of alcohol consumption among students who believed drinking to be prevalent within their social circle if they were low in EMB, reactivity to potentially embarrassing transgressions appeared to counteract this tendency. Among individual high in EMB, there was an inverse relationship between PSC and levels of alcohol consumption. Thus, students aware of others' evaluations in public settings who were especially sensitive to negative affect arising from the violation of social norms drank substantially less than high PSC–low EMB individuals, the group with the highest levels of alcohol use.

Overall, our findings are highly consistent with the tenets of the protective self-presentational perspective. They suggest that, like the shy and the socially anxious, individuals high in public self-consciousness with a susceptibility to embarrassment may limit their drinking for impression management reasons. They also suggest that a relative immunity to the form of socially induced affect that facilitates the self-regulation of public behavior puts low embarrassability students high in public self-consciousness at risk for alcohol abuse when they perceive heavy drinking as common within their friendship group. Thus, they point to a subgroup of students who, given their social-psychological attributes, should be especially likely to benefit from prevention efforts targeting perceptions of drinking norms within their immediate social networks.

The similarity in results across our two samples is striking and lends credit to their validity. Nonetheless, this study has a number of limitations that render our conclusions tentative. In particular, our reliance on convenience samples calls into question the generalizability of the patterns we observed across the two campuses. The non-experimental design of our analyses also makes it impossible to reach definitive conclusions about causality.

College drinking is largely a social activity. Respondents high in both public self-consciousness and embarrassability may have consumed less alcohol than other students because a fear of embarrassing encounters made them less likely to affiliate with others, which would have limited their opportunities for drinking (see Bruch et al., 1992 for a similar argument pertaining to shyness and drinking). Since prior use of alcohol may influence college students' selection of peer groups (e.g., Sher & Rutledge, 2007), it is also possible that respondents' drinking behaviors affected, as well as reflected, whether they associated with friends who drank heavily.

Additional research is needed to determine how this, as well as respondents' levels of sociability, might have contributed to our findings. Future studies might also consider the extent to which the patterns observed in this analysis (in particular, the moderating influence of friends' use of alcohol) extend to other dispositional characteristics associated with self-protective drinking practices, such as social anxiety and shyness.

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