

Pluralistic Ignorance and College Student Perceptions of Gender-Specific Alcohol Norms

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Students' perceived norms and personal concern about alcohol use were examined in 4 (N = 971) experiments. Men reported that same-sex peers were less concerned about campus alcohol practices than themselves or female students; women believed that they were more concerned about campus alcohol practices than both same- and opposite-sex peers (Experiments 1 and 2). Additional evidence suggested that students were not merely engaging in impression management. Men reported more social pressure to drink and greater embarrassment about expressing drinking-related concerns; women expected more severe consequences if they drank excessively (Experiment 3). A male student (vs. female student) expressing concerns about alcohol was believed to experience greater difficulties fitting in (Experiment 4). Implications for peer influence and drug use intervention are discussed.

Key Words college student, alcohol use, pluralistic ignorance, social influence, substance abuse

Recent surveys indicate that almost half of college students frequently consume alcohol in excessive amounts (e.g., Wechsler, Davenport, Dowdall, Moeykens, & Castillo, 1994; cf. Weingardt et al., 1998). This problem pertains to both genders, although men tend to consume more alcohol and experience more adverse consequences than do women (O'Hare, 1990; Wechsler, Dowdall, Davenport, & Castillo, 1995). Excessive alcohol consumption on college campuses, because of its role in motor vehicle fatalities, unsafe sex, unintentional injuries, and poor academic performance (Perkins & Berkowitz, 1986; P. Wood, Sher, Erickson, & DeBord, 1997), has received widespread attention and concern from public health officials, university administrators, parents, and the media (e.g., Wechsler et al., 1995). Virtually all theories consider active social pressure to try alcohol, social modeling (Collins, Parks, & Marlatt, 1985), stress

(1997), and the misperception of peer substance use behavior to be important for adoption of risky health-related behaviors (Borsari & Carey, 2001; Graham, Marks, & Hansen, 1991; Kandel, 1980; Perkins, 2002; Sher, Bartholow, & Nanda, 2001). The last route, the construal of social norms concerning campus alcohol practices, is the focus of the present research.

One form of norm construal concerns estimates of how much and how frequently others use alcohol; Borsari and Carey (2001) referred to these as "descriptive norms" (see also Cialdini, Reno, & Kallgren, 1990). Survey evidence indicates that young adults tend to overestimate the level of alcohol consumption and illicit drug use among their peers (Baer, Stacy, & Larimer, 1991; Sherman, Presson, Chassin, Corty, & Olshavsky, 1983; Suls, Wan, & Sanders, 1988). Overestimation of campus drinking may result from the vividness and availability of flagrant abuses (Kahneman & Tversky, 1973) and/or the desire to see one's own behavior in a more favorable light (Suls & Wan, 1987). The overestimation bias is important because numerous studies also show that one of the most consistent predictors of adolescent alcohol use is perceived alcohol use by peers (e.g., Marks, Graham, & Hansen, 1992; Sher et al., 2001; Stein, Newcomb, & Bender, 1987).

Perceptions of prevalence should be distinguished, however, from estimates of personal support for campus alcohol norms. Perceptions of others' approval of drinking may be considered "injunctive norms" (Borsari & Carey, 2001). Public behavior among college students appears to support alcohol use, but students privately may have misgivings about excessive drinking because of exposure to its negative consequences (e.g., sick roommates). Because excessive drinking at bars and parties on campus is highly visible, but individuals might be inhibited about sharing their private

private feelings about alcohol may result. Everyone may conclude (erroneously) that their peers have no serious qualms about alcohol. This represents a case of *pluralistic ignorance*, in which students "assume that their own privately held attitudes are more conservative than those of other students" (Schroeder & Prentice, 1998, p. 2152).¹ Consistent with this reasoning, in a study conducted at Princeton University, college students rated themselves as less comfortable with drinking on campus than the average student and their friends (Prentice & Miller, 1993). Perkins and Berkowitz (1986) reported similar findings: Students thought they personally were less permissive about alcohol than were other college students.

The present experiments were conducted to assess how personally concerned college men and women attending a large midwestern public university were about alcohol practices relative to same- and opposite-sex peers. Although Prentice and Miller (1993, Study 1) found that both genders estimated that their comfort levels were lower than those of the average student, the gap was larger for women than for men. Also, in a prospective study (Prentice & Miller, 1993, Study 3), women were less apt to change their attitudes or their drinking in the direction of what they perceived to be the campus norm. These results are suggestive of a gender difference in the perception and role of pluralistic ignorance in campus drinking. However, only opinions about "the average student" and "friends" have been assessed in prior studies, so whether men and women hold gender-specific norms for personal concern about alcohol on campus remains unknown.

We predicted that both genders would perceive men to be less concerned about campus alcohol practices because college men consume more alcohol than do women (O'Hare, 1990; Wechsler et al., 1995). Also, because any discomfort that men privately experience about excessive drinking may seem blatantly contradicted by the dominant role that alcohol plays in men's campus social life (Prentice & Miller, 1993; M. Wood, Nasgoshi, & Dennis, 1992), they may be especially reluctant to communicate their concerns

impression formation experiment to assess gender-specific norms about campus alcohol practices.

EXPERIMENT 1

Method

Participants College students ($n = 344$) enrolled in a large midwestern university participated as part of a large group testing session that counted as research credit for the students' Elementary Psychology requirement. Of the participants, 145 (42%) were men and 199 (58%) were women. Elementary Psychology fulfills a general education requirement and draws a broad spectrum of first- and second-year students at the university. No identifying information was written on the questionnaire, and participants' anonymity was assured. The surveys were administered along with several unrelated inventories included by other researchers.

Procedure and Materials Five questions assessed pluralistic ignorance regarding concern about alcohol consumption on campus. The item assessing personal concern was "How do you feel about the level of alcohol consumption by students at the university?" Level of concern was indicated by circling a number on an 11-point Likert-type scale ranging from 0 (*It doesn't bother me at all*) to 10 (*It bothers me very much*). Other items inquired about concern of other reference groups, such as "How do you think the average male student at this university feels about the level of alcohol consumption on this campus?," with responses made on an 11-point scale ranging from 0 (*It doesn't bother them to all*) to 10 (*It bothers them very much*). This was followed by questions using the same format about the concern of "the average female student," "male friends," and "female friends."

To assess perceptions about frequency of excessive alcohol consumption, we asked participants how often they got drunk, followed by questions about how often they thought the average male student, the average female student, male friends, and female

drunk 1–2 times a month), 4 (*I get drunk 1–2 times a week*), 5 (*I get drunk 3–4 times a week*), and 6 (*I get drunk almost every day*) as possible response alternatives. The alternatives for the average students and friends items were the same as above except for changes in pronouns.

Items about concern and frequency of driving under the influence of alcohol also were included. Personal concern was assessed in response to the question, “How do you feel about the amount of drunk driving occurring in [name of the small midwestern city where the university was located]?” with responses rated on an 11-point scale ranging from 0 (*It doesn't bother me at all*) to 10 (*It bothers me very much*). Participants also used similar scales to rate their impressions of the views of other reference groups—average male student, average female student, male friends, and female friends—concerning drunk driving. Frequency of driving under the influence was assessed with the question, “How often do you drive after having more than 2 alcoholic drinks?” Responses were made on a 6-point scale, with 1 (*I never drive after drinking alcoholic beverages*), 2 (*I've driven a couple of times after drinking alcohol*), 3 (*Once or twice in the past year*), 4 (*Once or twice in the past month*), 5 (*Once or twice in the past week*), and 6 (*I always drive no matter how much I've had to drink*) as alternatives. (Data from participants who reported not having a driver's license, not having access to an automobile, and/or rarely having the opportunity to drive were excluded.) Participants also were asked to rate frequency of driving under the influence of the average male student, the average female student, male friends, and female friends on campus.

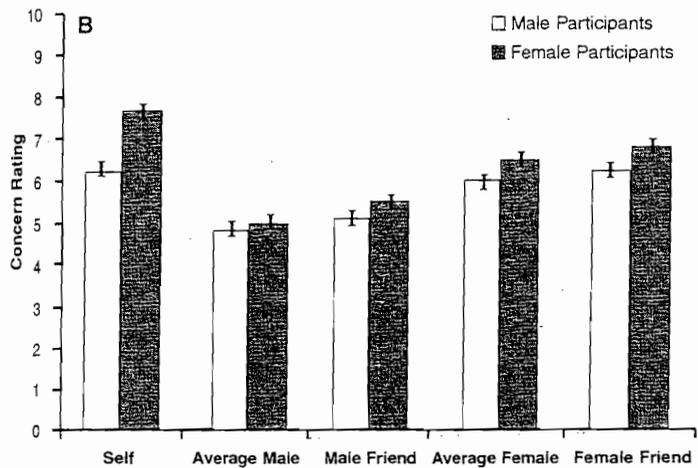
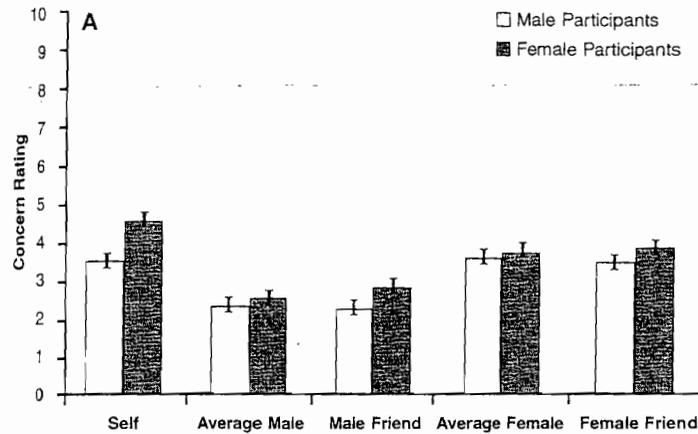
A fixed order was used, with the frequency questions preceding the concern questions, because Prentice and Miller (1993) found that self-comfort was rated lower than estimates of others, regardless of order. Driving under the influence items and excessive alcohol consumption items were counterbalanced across participants.

age female student, or female friends) analysis of variance (ANOVA), with repeated measures on the second factor. Gender, $F(1, 342) = 4.06, p < .05$, and target, $F(4, 1368) = 87.30, p < .001$, main effects were significant, as was the Gender \times Target interaction, $F(4, 1368) = 4.63, p < .001$ (see Figure 1). Simple effects analyses, $F(4, 1368) = 32.79, p < .001$, indicated that men reported having as much personal concern about excessive alcohol consumption as their best female friend and the average female student, and they reported having more concern than that predicted for the average male student ($d = 1.04$) and best male friend ($d = 1.01$). In contrast, female students reported being more concerned than all reference groups (although closer to other women than to men), $F(4, 1368) = 64.11, p < .001$ (d s ranged from 0.65 to 1.50).

A 2×5 ANOVA of the frequency of intoxication estimates for self- and other targets indicated a significant main effect of target, $F(4, 1368) = 107.91, p < .001$, with participants reporting that they drank to intoxication less frequently than did peers or friends. However, female friends were perceived to be closer to self than were the other groups. The main effect of gender was not significant ($F < 1$), but there was a Gender \times Target interaction, $F(4, 1368) = 10.93, p < .001$. The form of the interaction indicated that male students' own estimates of excessive drinking ($M = 3.07, SD = 1.18$) were lower than their estimates for all groups (average male student, $M = 3.77, SD = 0.85$; male friend, $M = 3.48, SD = 1.56$; average female student, $M = 3.33, SD = 0.86$; d s ranged from 0.24 to 0.85) except female friends ($M = 3.11, SD = 1.09$), $F(4, 1368) = 26.47, p < .001$. Female students ($M = 2.64, SD = 1.14$) reported that they drank to intoxication less frequently than all others (average male student, $M = 3.92, SD = 0.83$; male friend, $M = 3.43, SD = 1.13$; average female student, $M = 3.51, SD = 0.78$; female friend, $M = 2.99, SD = 1.09$; d s ranged from 0.84 to 1.40), $F(4, 1368) = 104.20, p < .001$.

Driving under the Influence The number of partici-

FIGURE 1 / Mean Self- and Perceived Other Concern Ratings (with Standard Errors Bars) by Male and Female Participants for Level of Alcohol Consumption on Campus (A) and for Drunk Driving (B)



For frequency estimates, the results for driving drunk were similar to those found for intoxication. (The degrees of freedom differ from those reported earlier because 7 participants provided incomplete data regarding frequency.) There was a main effect of target, $F(4, 1208) = 89.42, p < .001$, and a significant Gender \times Target interaction, $F(4, 1208) = 5.21, p < .001$. Men reported that they drove drunk as frequently ($M = 2.63, SD = 1.29$) as their female friends ($M = 2.58, SD = 1.32$) but less than all other groups (male friend, $M = 3.14, SD = 1.36$; average male student, $M = 3.50, SD = 1.21$; average female student, $M = 2.85, SD = 1.18$), $F(4, 1208) = 27.44, p < .001$ (d s ranged from 0.30 to 0.82). Women ($M = 2.08, SD = 1.03$) reported engaging in drunk driving less frequently than all groups (p s $< .05$), although they thought their rate was closest to that of female friends (average male student, $M = 3.44, SD = 1.28$; male friend, $M = 3.03, SD = 1.38$; average female student, $M = 2.86, SD = 1.07$; female friend, $M = 2.34, SD = 1.16$; d s ranged from 0.20 to 0.91).

Discussion

College students at a large public midwestern university believed that large segments of the campus were not as concerned about alcohol practices as they personally were; however, there were noteworthy gender differences. Male students reported being more concerned about excessive alcohol consumption on campus than other male students and believed their personal feelings were closer in sentiment to those of their female friends. Also, male students reported engaging in excessive drinking less frequently than their same-sex peers and at the lower rate estimated for female peers. The pattern of men's concern ratings implies that they felt deviant from their same-sex peers; that is, personal concern about excessive drinking was inconsistent with the stereotype of the campus male student. Female students, however, believed that they think and behave more responsibly than both same- and opposite-sex reference groups. Although

norm perceptions, however, were seen with respect to both excessive consumption and driving under the influence.

EXPERIMENT 2

Although college students reported being more concerned than their peers, one might ask whether they were reporting their true feelings or merely trying to make a more socially responsible impression. A reason to doubt the impression management account is that all surveys were collected under conditions of anonymity; however, even under such conditions, people may try to present a more positive image. An impression management explanation for the previous results, therefore, cannot be completely discounted.

Experiment 2 directly assessed whether impression management posed an interpretational problem for previous findings. Participants were led to believe their survey responses would be shared with groups that should have been perceived to differ in friendliness about expressing concerns or reporting excessive drinking (i.e., university administrators, fraternity and sorority groups, or researchers). If impression management is operating, even when responding anonymously students should present themselves as least concerned when they complete surveys that are expected to be seen by fraternal groups and most concerned when the surveys are expected to be seen by university administrators, who in public meetings and in the college newspaper were considering making alcohol policies on campus more restrictive.

In Experiment 1, students were asked how "bothered" they were about the level of drinking on campus. Prentice and Miller (1993), however, asked participants to rate how "comfortable" they felt about alcohol drinking habits. To ensure that the phrasing of the questions was not responsible for the obtained gender differences, in Experiment 2 we had students complete items comparable with those used by Prentice and Miller (1993). Also, instead of asking about frequency of intoxication, we asked questions about

others. Asking about the number of alcoholic drinks consumed seemed less susceptible to idiosyncratic interpretation.

Method

Participants College students ($n = 190$) enrolled in a large Elementary Psychology course took part in a group testing session involving the completion of a series of unrelated surveys under anonymous conditions. Of the participants, 74 (39%) were men and 116 (61%) were women.

Procedure and Materials One third of the survey booklets contained instructions stating that “the data may be shared with University Administrators. As you know, the University administration is concerned about the role of alcohol on campus.” Another third contained instructions stating that “the data may be shared with fraternity and sorority organizations. As you know, fraternities and sororities are concerned about possible changes in campus alcohol policies.” The final third of the surveys contained instructions stating that “the data are being obtained exclusively for research purposes.” Surveys for the three conditions were randomly assigned.

Concern about campus drinking was assessed with the question, “How comfortable do you feel with alcohol drinking habits of students at this university?” Participants also answered similar questions with respect to “your male friends” and “your female friends.” Responses were made on 11-point scales ranging from 1 (*Not at all*) to 11 (*Very comfortable*). Unlike in Experiment 1, participants were asked only about male friends and female friends because they should be more important sources of influence than the average student (the latter also might have had a negative connotation).

Three items concerning quantity of alcohol consumed on a typical occasion were adapted from Wechsler et al. (1994). Participants were asked to answer

female friend using the same response categories. Instructions indicated that “one drink = a 12 oz can or bottle of beer, a 4 oz glass of wine, or a shot of liquor in a mixed drink.” After completion of the questionnaire booklets, participants were debriefed about the deception.

Results

Manipulation Check After completing the alcohol surveys, participants were asked to check whether survey results would be shared with administrators, would be shared with fraternal and sorority organizations, or were collected only for research purposes. A total of 183 participants (96%) checked the correct recipient mentioned in the survey instructions, with no difference across conditions. Thus, the vast majority of participants paid attention to and remembered the cover story.

Comfort A 2 (gender) \times 3 (recipients: administrators, fraternal organizations, or researchers) \times 3 (target: self, male friends, or female friends) ANOVA was conducted with repeated measures on the last factor. The main effect for participant gender was nonsignificant, but there was a referent main effect, $F(2, 368) = 69.55, p < .0001$, and a Gender \times Referent interaction, $F(2, 368) = 7.38, p < .01$. Estimates differed depending on the gender of the participant. As in Experiment 1, men reported discomfort levels ($M = 7.81, SD = 2.75$) comparable with their estimate of those for women ($M = 8.04, SD = 2.47$) but significantly higher than their estimate for male friends ($M = 8.91, SD = 2.37; d = 0.51$), $F(2, 368) = 13.50, p < .001$. Women described themselves as significantly less comfortable ($M = 7.20, SD = 2.34$) than their female friends ($M = 8.16, SD = 1.86; d = 0.59$), who were perceived as more uncomfortable than their male friends ($M = 9.22, SD = 1.81; d = 0.70$), $F(2, 368) = 84.48, p < .001$. Women also saw themselves as less comfortable than male friends ($d = 1.09$). Most im-

an alternative explanation for the concern or discomfort reported by the students.

Quantity A similar analysis was conducted on the number of drinks measure. (The degrees of freedom differ from the preceding analyses because some participants did not complete all quantity items.) There was no significant effect or interaction involving instructional condition ($F_s < 1$). Men did make higher estimates overall ($M = 4.15$, $SD = 1.17$) than did women ($M = 3.80$, $SD = 1.24$), $F(1, 169) = 10.15$, $p < .002$ ($d = 0.21$). Estimates significantly differed across self, male friends, and female friends, $F(2, 338) = 15.73$, $p < .001$. Most notable, the Participant Gender \times Target interaction was significant, $F(2, 338) = 13.39$, $p < .001$. Simple effects analyses and Newman-Keuls post hoc tests indicated that men perceived themselves as drinking less ($M = 4.34$, $SD = 0.86$) than their same-sex friends ($M = 4.60$, $SD = 0.67$; $d = 0.45$), but more than their female friends ($M = 3.56$, $SD = 0.78$; $d = 0.95$), $F(2, 338) = 59.91$, $p < .001$. (This pattern differs somewhat from Experiment 1 in which men estimated they got intoxicated as frequently as women.) Men's estimates for same-sex friends were also significantly greater than their estimates for female friends ($d = 1.34$). Women estimated that they drank less ($M = 3.29$, $SD = 1.04$) than other women ($M = 3.53$, $SD = 0.78$; $d = 0.27$) and much less than male students ($M = 4.56$, $SD = 0.72$; $d = 1.28$), $F(2, 338) = 137.46$, $p < .001$. The women's estimate for male friends was also significantly greater than that for their same-sex friends ($d = 1.28$).

Discussion

Students' reports of personal concern were similar to those in the prior experiment even when we manipulated the recipients of the surveys from unfriendly (i.e., university administrators) to friendly (i.e., fraternal organizations) concerning campus drinking. These data lend no support to the idea that students reported being more personally concerned merely because they were trying to make a socially desirable impression. Also, as in Experiment 1, men reported

than male and female friends. These patterns were found with the question format originally used by Prentice and Miller (1993), showing the gender effects were not a function of the way the questions were asked in Experiment 1.

EXPERIMENT 3

We hypothesized that believing that others do not share one's misgivings about alcohol stems from individuals' embarrassment about disclosing their concerns (Prentice & Miller, 1993). This should be especially problematic for men because drinking is integral to masculine social identity on most campuses. To the extent the illusion of belief uniformity is not dispelled, campus men should feel more social pressure to drink. College women also should find themselves in an awkward position because they apparently see themselves as deviant from both same- and opposite-sex peers. (At least men find some similarity with their female friends.) One reason women may accommodate to this situation is that alcohol plays a lesser role in campus life for women. There also is evidence that female alcohol use is condoned less (Huselid & Cooper, 1992). In addition, women may anticipate experiencing more severe negative consequences (e.g., unintended sex, rape, or pregnancy) if they drink excessively, which places a check on their drinking. To examine these possibilities, we surveyed college students about feelings concerning social pressure, embarrassment, and consequences concerning alcohol.

Method

Participants College students ($N = 223$; 111 men, 50%; 112 women, 50%) were recruited for a large group testing session involving administration of a large series of psychological measures completed anonymously. They received credit toward their Elementary Psychology research exposure requirement.

Materials and Procedure Three questions were embedded in a larger packet. To assess perceptions of

inclined to do on social occasions?" To assess potential embarrassment about disclosure, we asked, "Would college women or men tend to be more embarrassed if they expressed concerns about drinking too much or too frequently?" We used the question, "Do college men or women tend to experience more severe negative consequences if they engage in excessive drinking?" to assess consequences. Responses were made on 7-point scales with 1 (*women experience more*), 4 (*about the same*), and 7 (*men experience more*) as scale anchors.

Results and Discussion

Social Pressure Both men and women perceived that men experienced more social pressure to drink; men's mean responses differed from the midpoint, $t(110) = 53.26, p < .001$, as did women's, $t(111) = 38.89, p < .001$. In addition, the men's ratings were more extreme ($M = 5.23, SD = 1.04$) than the women's ($M = 4.83, SD = 1.31$), $F(1, 221) = 6.49, p < .01$ ($d = 0.24$).

Embarrassment Both genders also perceived that men would be more embarrassed about expressing concerns about drinking; men's mean responses differed significantly from the midpoint, $t(110) = 33.50, p < .001$, as did women's, $t(111) = 32.43, p < .001$. Men did not differ in their perceptions ($M = 5.03, SD = 1.58$) from women ($M = 4.91, SD = 1.60$; $F < 1$).

Negative Consequences Men and women thought that women would suffer more aversive consequences as a result of excessive drinking; men's mean responses differed significantly from the midpoint, $t(110) = 25.50, p < .001$, as did women's, $t(111) = 24.19, p < .001$. Women's ratings ($M = 3.04, SD = 1.39$) also were more extreme than men's ($M = 3.45, SD = 1.33$), $F(1, 221) = 5.05, p < .03$ ($d = 0.21$).

Consistent with predictions, college men were

men may have greater difficulty resisting the practice of excessive drinking whereas women may be able to resist, despite seeing themselves as deviant.

EXPERIMENT 4

The perceived drinking norm for college men is higher than that for college women, but expressing reservations about alcohol appears to be viewed as being more embarrassing for men. In contrast, women are aware that their drinking norm is lower and believe that the dangers associated with excessive drinking may be more severe for them. An impression formation experiment was conducted to test the hypothesis that men (vs. women) perceive same-sex peers who voice misgivings about alcohol consumption as suffering more serious social consequences.

Method

Participants College undergraduates ($N = 216$; 86 men, 40%; 130 women, 60%) were recruited from the same large midwestern university used in prior studies and received credit toward their Elementary Psychology research requirement.

Materials and Procedure Materials for this experiment were completed as part of a larger packet of unrelated questionnaires. Each participant received a 1-page sheet with the title "Impression Formation Study." The sheet explained that "sometimes people form impressions on the basis of limited information." Participants were asked to assume that an undergraduate at the university had responded to the questionnaire item written below. The item was "How do you feel about the level of alcohol consumption by students at this university?" An 11-point scale with endpoints of 0 (*doesn't bother me at all*) and 11 (*bothers me very much*) was also printed below the question, and one of two response alternatives was circled: either 3 or 7. Male participants read that the questionnaire had been completed by another male

ative social consequences for someone of their own gender who voiced strong concerns about alcohol. Participants were randomly assigned to the 3 or 7 Likert-type response conditions.

Participants were asked to judge, "Compared to other undergraduate [males/females] at the University, how typical is this undergraduate?" Ratings were made on a 7-point Likert-type scale ranging from 1 (*very atypical*) to 7 (*very typical*). This was followed by "How well do you think this undergraduate would 'fit in' with other [male/female] undergraduates at the university?" Responses were made on a 7-point Likert-type scale ranging from 1 (*Not at all*) to 7 (*Very much*).

Results and Discussion

The ratings of typicality were analyzed with a 2×2 between-subjects ANOVA with participant gender and manipulated concern rating (3 vs. 7) as independent factors. The main effects for gender, $F(1, 212) = 28.12, p < .0001$, and concern, $F(1, 212) = 8.12, p < .001$, were significant, as was the interaction, $F(1, 212) = 8.13, p < .001$. Men's ratings of typicality ($M = 4.29, SD = 2.01$) were lower than women's ($M = 4.86, SD = 1.40; d = 0.23$). Post hoc tests indicated that men and women evaluated a same-sex peer who was relatively unconcerned comparably ($M = 5.20, SD = 1.80$, vs. $M = 5.18, SD = 1.29$). Men, however, perceived a concerned male student as less typical ($M = 3.38, SD = 1.58$) than women perceived a female student who expressed a comparable level of concern ($M = 4.55, SD = 1.52; p < .05; d = 0.24$).

Ratings of how well the target was perceived to 'fit in' with his or her same-sex peers showed similar effects. The main effects of gender, $F(1, 212) = 3.83, p < .05$, concern, $F(1, 212) = 45.19, p < .0001$, and the Gender \times Concern interaction, $F(1, 212) = 5.88, p < .01$, were significant. Both male and female students' assessments of how well a target with few mis-

a female target who expressed a similar level of concern ($M = 4.67, SD = 1.28; p < .05; d = 0.35$).

Both men and women thought a same-sex undergraduate who voiced misgivings about campus alcohol practices was less typical and would have more difficulty fitting in on campus. More critical, extreme impressions were formed about a male student with strong misgivings about alcohol, suggesting that men who do not accede to social pressure encounter more social problems.

GENERAL DISCUSSION

In two survey experiments, several hundred college students at a large Midwestern university reported that their personal misgivings about alcohol practices were not shared with large segments of the campus. Confidence in the authenticity of these reports is bolstered by finding (in Experiment 2) that manipulating the friendliness of recipients (fraternal organization vs. university administration) of the survey responses did not modify students' responses. College men perceived their personal concerns about general campus alcohol practices and drunk driving and their frequency of drinking were closer to what they estimated for women than for other men. Women, in contrast, believed that their concerns and drinking frequency were not shared with same- or opposite-sex friends and peers. College men may be reluctant to publicly admit their concerns about excessive alcohol consumption because it figures more prominently in their campus social lives (Capraro, 2000; Huselid & Cooper, 1992; M. Wood et al., 1992). Furthermore, publicly admitting discomfort about alcohol may signal a lack of 'machismo' that is socially damaging. Consistent with this idea, men were perceived to be subject to more social pressure to drink and to experience more embarrassment if they expressed concerns about drinking (in Experiment 3). Male students were also rated as incurring more negative social consequences if they voiced strong concerns about alco-

fortable with alcohol" (Prentice & Miller, 1993, p. 249). Theories of small-group social influence emphasize the strength of in-group norms (Crandall, 1988; Schachter, 1951). Same-sex norms should be considered more appropriate and influential than opposite-sex norms (e.g., Deaux, 1998). Of no surprise, Prentice and Miller (1993) found increased consistency of attitudes, norms, and behavior concerning alcohol for men over time on campus, although not for women. Because men tended to think that they share more with college women than with other college men (as we found in Experiments 1 and 2), men's identification with the opposite-sex reference group may operate much like a negative reference group and intensify perceived pressure to comply publicly with the same-sex norm (e.g., Carver & Humphries, 1981; Suls, Martin, & Wheeler, 2000). Although women also appear to think they feel and behave differently from their peers, they may be better able to resist the public norm because excessive drinking does not carry as positive a connotation for women; in fact, they perceive less social pressure to drink and are more concerned about (nonsocial) consequences, such as unprotected sex, pregnancy, and so forth (Experiment 3).

Identification of gender differences in alcohol norms may provide useful information for the development of educational interventions to reduce pluralistic ignorance. Particularly relevant is a recent study by Schroeder and Prentice (1998; see also Donaldson, Graham, Piccinin, & Hansen, 1995) who exposed freshman college students to an intervention involving peer-oriented discussion focusing on pluralistic ignorance versus an individually oriented discussion. Evidence of less drinking was found among students in the peer-oriented condition 4–6 months later, especially among participants who were very concerned about negative social evaluations. The study also reported that over time men perceived more agreement with their peers but that women's beliefs

the present results, peer-oriented discussions to dispel pluralistic ignorance (Perkins, 2002) should recognize and address the different meanings that alcohol has for men versus women in college life.

Exclusive reliance on self-report measures is a limitation of the experiments, although comparable measures have shown adequate reliability and validity (Wechsler et al., 1994). Reliance on cross-sectional data also restricts discussion about causal mechanisms. It seems likely that perceptions of other's concerns and consumption are reciprocally related to self-concern and self-use. Furthermore, alcohol consumption is multiply determined; our focus was exclusively on construal of social norms, but personality variables, family history, alcohol expectancies, and so forth, also contribute. It remains for future research to ascertain whether the degree of pluralistic ignorance varies as a function of these other factors. We also should acknowledge that we could not distinguish periodic heavy drinkers from those with the riskiest or worst abuse problems. The latter may not be basing their drinking patterns on the drinking of others and are thus less influenced by normative interventions, a consideration needing further study.

One interesting paradox should be noted. Experiment 4 showed that male students recognize that there are considerable situational pressures on their fellow male students not to express concerns for fear of being socially excluded, but this did not lead male students in Experiments 1 and 2 to appreciate the implication that other male students' level of concern may be higher than they convey publicly. This failure to take into account situational pressures, however, is entirely consistent with the classic fundamental attribution error (Ross, 1977).

In conclusion, men saw their concerns about alcohol and sometimes their drinking behavior as more consistent with those of female students than with those of other male students. Women perceived themselves to be deviant in attitude and behavior

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ENDNOTE

1. Miller and Nelson (2002) have recently proposed another general explanation for pluralistic ignorance—mainly that there is a strong tendency to assume others' choices are approach rather than avoidance motivated. In other words, students may recognize that they drink more than they are personally inclined to do to avoid being socially excluded but assume their peers must drink because they enjoy it. This explanation is not mutually exclusive of the embarrassment idea; both may be operating.

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CRITICAL THINKING QUESTIONS

1. This article found that alcohol norms and perceptions are gender specific, suggesting that different intervention strategies are needed for men and for women. What may account for these differences in alcohol norms and perceptions? What differences in intervention strategies do these gender differences suggest? Explain.
2. Do the issues and processes presented in this article apply to areas other than alcohol, such as engaging in sexual activity? Explain your answer.
3. The subjects in this study were all college students. Given this, are the findings limited to college students, or do they apply to 18- to 22-year-old noncollege students, as well? Why or why not? How would you go about answering this question with data?
4. The purpose of advertising is to sell a product. Examine television and print ads for alcohol advertising. What images and messages do they convey, and how might these concepts contribute to a sense of pluralistic ignorance regarding alcohol norms?
5. What personality factors, family background, or prior history with alcohol could influence someone's perception of alcohol consumption? Examine literature on the topic in developing your answer.