

# Pluralistic Ignorance and Alcohol Use on Campus: Some Consequences of Misperceiving the Social Norm

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Four studies examined the relation between college students' own attitudes toward alcohol use and their estimates of the attitudes of their peers. All studies found widespread evidence of pluralistic ignorance: Students believed that they were more uncomfortable with campus alcohol practices than was the average student. Study 2 demonstrated this perceived self-other difference also with respect to one's friends. Study 3 tracked attitudes toward drinking over the course of a semester and found gender differences in response to perceived deviance: Male students shifted their attitudes over time in the direction of what they mistakenly believed to be the norm, whereas female students showed no such attitude change. Study 4 found that students' perceived deviance correlated with various measures of campus alienation, even though that deviance was illusory. The implications of these results for general issues of norm estimation and responses to perceived deviance are discussed.

Few issues have fascinated social psychologists as much or for as long as the relation between private attitudes and social norms. Conventional wisdom has it that when individuals perceive their attitudes to be different from the normative attitudes of their social group, they will experience discomfort and will resolve the discrepancy, usually by changing their attitudes in the direction of the norm. This analysis rests on an assumption that has gone largely unexamined by social psychologists: that people can accurately identify the social norm. In this article, we report four studies that challenge the generality of this assumption and document the consequences of its violation.

Although social influence has been a major topic of research for the past century (see Moscovici, 1985; Turner, 1991), the question of how people identify the social norm has scarcely arisen. Laboratory investigators have typically created situations in which the norm either is formed by subjects as part of the experimental task or is given unambiguously by the experimental procedure. For example, subjects in Sherif's (1936) auto-kinetic experiments were in a situation in which no norm existed. As part of the judgment task, they jointly (or individually) developed perceptual norms. Subjects in Asch's (1951) conformity studies, on the other hand, were in a situation with a strong and unambiguous norm: They were asked to give a judgment after hearing numerous "other subjects" give the same (objectively incorrect) answer. Sherif's subjects were free to negotiate the norm; Asch's subjects were provided with a clear, consensual group norm. In neither of these prototypical cases was it the subject's task to identify a preexisting norm.

Field research on social influence might logically be ex-

pected to have more to say about how people identify the social norm. However, most field studies have focused primarily on the effects of norms to the exclusion of considerations about how people locate those norms. For example, in Newcomb's (1943) study of attitude change among students at Bennington College, the fact that the prevailing norms of the college were liberal was presented as an unambiguous property of the social context. Presumably, the newcomer to Bennington found enough evidence of liberal views in the outward behavior of the residents to ascertain that these views were, in fact, the norm. Similarly, Festinger, Schachter, and Back's (1950) investigation of pressures toward uniformity in the Westgate and Westgate West housing projects examined adherence to prevailing norms without providing any evidence of how those norms were established or communicated. More recent investigations have shown a similar tendency to focus on the effects, rather than on the identification, of norms (e.g., Cialdini, Kallgren, & Reno, 1991; Crandall, 1988).

Despite the dearth of direct evidence regarding how people identify existing norms, the classic influence studies do suggest two general properties of norms that determine how they are perceived and communicated. First, social norms are defined by people's public behavior. The negotiated reality of Sherif's subjects, the public judgments of Asch's confederates, the liberal views expressed by Bennington students, and the attitudes expressed by the residents of Westgate and Westgate West all were public statements that defined the social norm. To the extent that public statements accurately reflect the private attitudes and judgments of their proponents, the subjective norm that they instantiate will coincide with the actual norm of the group. To the extent that they misrepresent people's private views, the subjective norm will diverge from the actual norm.

In addition to their public nature, norms are imbued with an impression of universality: People assume that all members of a group endorse that group's social norms (Allport, 1924), and, in turn, the power of norms to affect an individual's attitudes and behavior is heavily dependent on their perceived universality.

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The preparation of this article was facilitated by National Institute of Mental Health Grant MH44069 to Dale T. Miller. We thank Jenifer Lightdale and Carolyn Oates for their assistance with data collection and analysis.

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As consensus (or the appearance of consensus) breaks down, the norm loses its influence. The Asch (1951) studies provide clear evidence of the importance of universality: When just one confederate deviated from the normative response (even by giving an alternative wrong answer), conformity dropped to nearly zero.

### Pluralistic Ignorance

Although the social psychological literature offers little evidence of how people identify social norms, it does provide some striking examples of systematic errors in norm estimation. Many of these examples come from research on pluralistic ignorance. *Pluralistic ignorance* is a psychological state characterized by the belief that one's private attitudes and judgments are different from those of others, even though one's public behavior is identical (Miller & McFarland, 1991). It develops most commonly under circumstances in which there is widespread misrepresentation of private views. In these cases, people's tendency to rely on the public behavior of others to identify the norm leads them astray, for the social norm that is communicated misrepresents the prevailing sentiments of the group. If participants understood this state of affairs, the situation would be self-correcting. However, they typically make the mistake of assuming that even though others are acting similarly, they are feeling differently. Their own behavior may be driven by social pressure, but they assume that other people's identical behavior is an accurate reflection of their true feelings.

Although many studies have demonstrated pluralistic ignorance, both in and out of the laboratory (see, e.g., Breed & Ktsanes, 1961; Miller & McFarland, 1987; O'Gorman, 1975; Packard & Willower, 1972; Schanck, 1932), little research has addressed the question of how victims of pluralistic ignorance respond to the perceived discrepancy between their private attitudes and the social norm. These individuals have several strategies available to them for reducing the discrepancy: They can move their private attitudes closer to the (perceived) norm, bring the norm closer to their attitudes, or reject the group altogether. Given that the last two of these options will often appear too costly or too difficult to effect, at least in the short run, the simplest way for individuals to eliminate the discrepancy is to change their private attitudes. This internalization of the norm will most often occur in situations in which private attitudes or judgments are not well established (see Kelman, 1958). One such situation is the classic case of the unresponsive bystander. In seeking to explain why bystanders fail to help a victim of an emergency, Latané and Darley (1970) suggested that pluralistic ignorance is at the root of this inaction. They argued that individual bystanders fail to act because they are unsure about the seriousness of the situation; however, these same bystanders often assume that the inaction of others reflects a high degree of confidence that the situation is not serious. In this case, pluralistic ignorance is easily resolved through internalization of the social norm: Bystanders will adopt a consensual (if erroneous) definition of the situation as a nonemergency.

In other cases of pluralistic ignorance, private attitudes and judgments are well established; here, individuals will be unable

to internalize the normative position. One such case is a classroom dynamic investigated by Miller and McFarland (1987, 1991). The situation is as follows: A professor who has just presented difficult material will typically ask students if they have any questions. This request for students to acknowledge their confusion often fails to elicit a response, even though confusion is widespread. The students' inaction is driven by pluralistic ignorance: Individual students are inhibited from raising their hands out of fear of asking a stupid question, but they interpret their classmates' identical behavior as an indication that everyone else understands the material. In this situation, pluralistic ignorance will not be resolved by students deciding that they actually do understand the material. They have ample and irrefutable evidence that they do not understand it. Instead, pluralistic ignorance will likely persist, leaving students feeling deviant and alienated from each other.

The research reported in this article was designed to explore these consequences of pluralistic ignorance. In all four studies, we examined pluralistic ignorance in the context of students' attitudes toward alcohol drinking on campus. We chose this particular issue because attitudes toward drinking are currently in a period of transition at Princeton, as the university becomes more sensitive to the negative effects of alcohol use on academic and social life. Many theorists have argued that pluralistic ignorance frequently accompanies such periods of social change, with private attitudes changing more quickly than social norms (see Breed & Ktsanes, 1961; Fields & Schuman, 1976; Miller & McFarland, 1991). Thus, we expected the issue of alcohol use to provide an excellent context for our empirical studies.

### Alcohol Use on Campus

Alcohol use by college undergraduates has become a major concern of university administrators and public health officials across the country (Berkowitz & Perkins, 1986; Maddox, 1970; Straus & Bacon, 1953). A recent survey revealed that whereas the use of other recreational drugs has dropped significantly over the past 2 decades, alcohol use has declined more slowly (Barringer, 1991). According to the College Health Association, alcohol is the single greatest risk to the health of university students. One powerful predictor of adolescent alcohol use, and of other forms of substance use, is peer influence (e.g., Graham, Marks, & Hansen, 1991; Kandel, 1980; Perkins, 1985; Stein, Newcomb, & Bentler, 1987). Moreover, the impact of peers appears to increase, rather than decrease, as adolescents mature (Huba & Bentler, 1980; Zucker & Noll, 1982).

The alcohol situation at Princeton is exacerbated by the central role of alcohol in many of the university's institutions and traditions. For example, at the eating clubs, the center of social life on campus, alcohol is on tap 24 hours a day, 7 days a week. Princeton reunions boast the second highest level of alcohol consumption for any event in the country after the Indianapolis 500 (Clitherow, 1991). The social norms for drinking at the university are clear: Students must be comfortable with alcohol use to partake of Princeton social life.

In the face of these strong norms promoting alcohol use, we suspected that students' private attitudes would reveal substantial misgivings about drinking. Within their first few months at

college, students are exposed to vivid and irrefutable evidence of the negative consequences of excessive alcohol consumption: They nurse sick roommates, overlook inappropriate behavior and memory losses, and hear about serious injuries and even deaths that result from drinking. They may have negative experiences with alcohol themselves and may notice its effects on their academic performance. This accumulating evidence of the ill effects of alcohol is likely to affect their private attitudes but not the social norm: Indeed, believing that others are still comfortable with alcohol, students will perpetuate that norm by continuing to adopt a nonchalant demeanor that masks their growing concerns. If this analysis is, in fact, correct, we should find clear evidence of pluralistic ignorance regarding students' comfort with alcohol use on campus.

The present studies sought to document the existence of pluralistic ignorance regarding alcohol use and to investigate some of its consequences for individuals' attitudes and behavior. Study 1 was designed to demonstrate pluralistic ignorance by showing a divergence between private attitudes and the social norm as well as a belief in the university of that norm. Study 2 extended this effect by showing a similar divergence between private attitudes and perceptions of the attitudes of one's friends. Study 3 explored the extent to which individuals respond to pluralistic ignorance by internalizing the social norm over time. Study 4 examined the behavioral manifestations of alienation produced by feeling deviant from the norm. The first three studies focused on comfort with alcohol use; the fourth study examined attitudes toward the university's policy banning beer kegs on campus.

### Study 1

In our first study, we tested the assumption that students' attitudes toward alcohol drinking on campus are characterized by a divergence between private attitudes and perceptions of the social norm. We also examined the extent to which social norms are imbued with an illusion of universality by asking subjects to estimate the variability, as well as the central tendency, of other students' attitudes.

### Method

**Subjects.** Subjects were 132 undergraduates, who voluntarily attended a mass testing session in which they participated in this and other short studies for pay. The sample included 69 women and 63 men, with approximately even distribution of women and men across the 1st- through 4th-year classes.<sup>1</sup>

**Procedure.** Subjects responded to a brief, one-page questionnaire that was included in a large booklet. The questionnaire was preceded by a page of instructions on how to use the response scales. The first question asked the following:

- How comfortable do you feel with the alcohol drinking habits of students at Princeton?

Subjects indicated their own comfort by circling a number on the corresponding 11-point scale (1 = *not at all comfortable* and 11 = *very comfortable*). Then they were asked to estimate the comfort of other students:

- How comfortable does the average Princeton undergraduate feel with the alcohol drinking habits of students at Princeton? (Please circle

the average student's response and then bracket the two values between which the attitudes of 50% of students fall.)

Again, subjects indicated the average student's comfort by circling a number on the corresponding 11-point scale and then bracketed the two numbers on the same scale within which they believed the attitudes of 50% of students fall.

### Results and Discussion

We expected that students would vary in their own comfort with alcohol drinking on campus but that they would believe other students to be uniformly more comfortable than they are. Means and standard deviations for the two comfort questions are presented in Table 1. Subjects' ratings indicated a sharp divergence between their own comfort and their subjective estimates of the comfort of others. A 2 (sex)  $\times$  2 (target) analysis of variance (ANOVA) revealed a highly significant main effect of target,  $F(1, 130) = 55.52, p < .0001$ : Respondents were much less comfortable with the alcohol drinking habits of Princeton undergraduates than they believed the average student to be. This main effect of target was qualified by a significant Sex  $\times$  Target interaction,  $F(1, 130) = 9.96, p < .005$ , indicating that the gap between ratings of own and others' comfort was substantially larger for women than for men. Nevertheless, the self-other difference was significant for both male,  $F(1, 62) = 10.35, p < .005$ , and female subjects,  $F(1, 68) = 51.95, p < .0001$ .

A closer analysis of the distributions of comfort ratings indicated that students' perceptions of the attitudes of others converged on a highly consistent norm. Although their own comfort ratings spanned the entire 11-point scale in a relatively uniform distribution, their estimates of the average student's comfort assumed an almost perfectly normal distribution, with high agreement on an average of approximately 7. A statistical comparison of the variances of the two distributions revealed a highly significant difference,  $F(131, 131) = 2.99, p < .0001$ .

In addition, subjects' estimates of the variability of others' attitudes provided strong evidence for the illusion of universality. The median estimate of the range within which the attitudes of 50% of students fell (i.e., the interquartile range) was 4, with a lower bound of 5 and an upper bound of 9. (We use medians here to facilitate comparison with the actual distribution. The means are very close to the medians in all cases.) Thus, students' subjective distributions of attitudes toward drinking on campus had a mean of approximately 7, with an interquartile range from 5 to 9. By contrast, the actual distribution of attitudes, as reflected by subjects' own comfort ratings, had a mean of 5.33, with an interquartile range from 3 to 8. These distribu-

<sup>1</sup> The data for Studies 1, 2, and 4 were collected at Questionnaire Day sessions, which are organized by the psychology department each semester. These sessions are advertised in the student newspaper with notices posted around campus and are also announced in the large introductory-level psychology courses. Students come to a large lecture hall anytime during the afternoon or evening, fill out a questionnaire booklet anonymously, and receive \$6 for their participation. To ensure that participants feel completely anonymous, we collect demographic information regarding only their sex and class. Although the samples are self-selected, they typically represent a cross-section of the undergraduate population in terms of these demographic characteristics.

**Table 1**  
*Ratings of Own and Average Student's Comfort With Alcohol Drinking in Study 1*

Measure	Self	Average student
Women		
M	4.68	7.07
SD	2.69	1.68
Men		
M	6.03	7.00
SD	2.76	1.57
Total		
M	5.33	7.04
SD	2.73	1.63

*Note.* All ratings were made on 11-point scales (1 = *not at all comfortable* and 11 = *very comfortable*).

tions demonstrate the two defining features of pluralistic ignorance: A divergence of subjective from actual norms and an illusion of universality.

### Study 2

The results of Study 1 provided strong support for our expectation that students' attitudes toward campus alcohol practices would be characterized by pluralistic ignorance. However, two methodological features of the study allowed for alternative interpretations of the results. First, our question about the social norm asked students to rate the comfort of the average Princeton undergraduate with alcohol drinking on campus. Although we believed that ratings of the average student would provide a good indication of the perceived norm, it is also possible that the category "average student" lacked psychological reality for our subjects. Second, we asked the two comfort questions in a fixed order, with the question about the self always preceding the question about the average student. It is possible that subjects rated the average student as more comfortable simply because they made that rating second.

To preclude these alternative explanations for the findings of Study 1, we conducted a second study, in which we manipulated the order of the self and other questions and included an additional question that assessed the comfort of the respondent's friends with alcohol drinking on campus. Unlike ratings of the average student, ratings of friends were certain to be made with a group of real people in mind.

### Method

**Subjects.** Subjects were 242 undergraduates, who voluntarily attended a mass testing session in which they filled out this and other questionnaires for pay. The sample included 145 women and 97 men, with an approximately even distribution of women and men across the 1st- through 4th-year classes.

**Procedure.** Subjects answered the two questions asked in Study 1 (minus the variability estimates) and a third question that asked them to rate how comfortable their friends feel with the alcohol drinking habits of students at Princeton. Half of the subjects (77 women and 44 men) rated themselves first and the average student second; the other

half (68 women and 53 men) rated the average student first and themselves second.

### Results and Discussion

Means and standard deviations for the three comfort questions are shown in Table 2. A 2 (sex)  $\times$  3 (target)  $\times$  2 (question order) ANOVA revealed a highly significant effect of target,  $F(2, 476) = 54.52, p < .0001$ . Pairwise comparisons of the three means indicated that ratings of own comfort were significantly lower than ratings of friends' comfort or of the average student's comfort (using Tukey tests, with  $p < .05$ ). The main effect of target was qualified by a significant Target  $\times$  Order interaction,  $F(2, 476) = 3.45, p < .05$ , indicating that the differences between comfort ratings for the three targets were greater when the question about the average student came first. However, separate pairwise comparisons within each form of the questionnaire showed that ratings of own comfort were significantly lower than ratings of the other two targets for both question orders. Friends' comfort was rated as intermediate between own comfort and the average student's comfort in all cases, but the difference between ratings of friends and of the average student was significant only when the average student question came first (for all reported differences,  $p < .05$ ).

Students' perceptions of the comfort of the average student again converged on a highly consistent norm. Ratings of the average student were significantly less variable than ratings of the self,  $F(241, 241) = 3.14, p < .0001$ , and of friends,  $F(241, 241) = 2.46, p < .0001$ . Not surprisingly, ratings of friends' comfort showed considerable variability across subjects, although still not quite as much variability as self-ratings.

**Table 2**  
*Ratings of Own and Others' Comfort With Alcohol Drinking in Study 2*

Measure	Self	Friend	Average student
<b>Self-question first</b>			
Women			
M	5.84	6.49	6.96
SD	2.69	2.42	1.41
Men			
M	6.02	6.82	7.11
SD	2.66	2.12	1.20
Total			
M	5.91	6.61	7.01
SD	2.68	2.32	1.34
<b>Other-question first</b>			
Women			
M	5.06	6.13	7.16
SD	2.47	2.34	1.72
Men			
M	5.87	6.94	7.47
SD	2.54	2.12	1.37
Total			
M	5.41	6.49	7.30
SD	2.50	2.24	1.57

*Note.* All ratings were made on 11-point scales (1 = *not at all comfortable* and 11 = *very comfortable*).

These results, especially concerning perceptions of friends, raise some interesting questions about the relation between local (friend) and global (campus) norms and about the role of these norms in producing pluralistic ignorance. In the case of alcohol use on campus, both types of norms are on the side of greater comfort with alcohol than students privately feel, and thus it is difficult to disentangle them. In theory, however, local and global norms may be quite distinct and may contribute independently to producing the perceived self-other differences. Misestimation of the local norm may occur because, as in the bystander and classroom cases, students base their estimates on observations of their friends' public behavior and erroneously assume that that behavior is diagnostic of their private attitudes. Misestimation of the global norm may be driven, in part, by a similar process but may also be influenced by the collective representation of Princeton as a drinking campus and by the importance of a liberal position on alcohol to the college student identity. We return to a consideration of the mechanisms underlying pluralistic ignorance in the general discussion.

In summary, the results of Studies 1 and 2 confirmed our intuition that students' comfort with alcohol use on campus would manifest the classic characteristics of pluralistic ignorance. Although the subjects in these studies were volunteers and thus may not have been representative of the student body (a weakness we remedy in the next study), we believe that the phenomenon demonstrated here is quite general: Undergraduates believe that everybody is more comfortable with drinking than they are themselves (see also Perkins & Berkowitz, 1986). The situation of drinking on campus shares much in common with the classic examples of pluralistic ignorance cited in the introduction. In all cases, individuals assume that others' outward display of comfort and ease reflects their actual feelings, even though those individuals' own identical behavior is somewhat at odds with their internal states.

### Study 3

Armed with evidence for the validity of our assumptions about the alcohol issue, we designed the next two studies to explore some of the consequences of pluralistic ignorance. Study 3 addressed the question of how individuals respond to pluralistic ignorance over time. One prediction is that when individuals perceive their attitudes to be different from the normative attitudes of their social group, they will gradually change their attitudes in the direction of the group norm, either because they are persuaded by the group's position or because they internalize the sentiments that they originally expressed inauthentically. This conformity prediction has considerable precedent in the social influence literature, which has always placed a heavy emphasis on conformity as a means of resolving self-group discrepancies (see Moscovici, 1985). However, in the case of alcohol use on campus, the presence of irrefutable evidence of the ill effects of excessive drinking might make it very difficult for students to decide that they are, in fact, comfortable with the drinking norms. If students are unable to internalize the (perceived) normative position, we should observe no reduction in pluralistic ignorance over time.

To examine the extent to which students would change their attitudes to reduce pluralistic ignorance, we surveyed a random sample of college sophomores at two time points: Initially, in September, when they had just returned from summer vacation and had had little recent exposure to college drinking norms, and then again in December, after they had spent several months as active members of the college community. We assumed that 8 to 9 weeks between interviews would be sufficient to observe internalization effects, if such effects existed. In addition, we asked two questions to assess their recent and typical levels of alcohol consumption. Although we expected no gross changes in drinking habits over the course of the semester, we were interested in the relation of drinking behavior to both private attitudes and estimates of the norm. These behavioral questions were included in both interviews.

We tested for internalization effects in two ways. Our first expectation was that students would increasingly adopt the normative position toward alcohol use on campus over the course of the semester. Thus, we predicted that their private attitudes would show a change in the direction of greater comfort over time. Our second expectation was that internalization would result in greater consistency among private attitudes, estimates of the norm, and drinking behavior. Thus, we predicted that the correlations among these variables would increase over time.

### Method

**Subjects.** Fifty 2nd-year undergraduates (25 women and 25 men) participated in this study. We chose 2nd-year students because we assumed that they would be familiar with student culture and, in particular, with norms for drinking but that they would still be new enough at the university to be concerned about fitting in. Subjects were selected at random from the student telephone directory and were each interviewed twice over the telephone.

**Procedure.** Subjects were contacted for the first interview during the 2nd or 3rd week of the fall term. They were asked to participate in a telephone survey of students' attitudes toward the university's alcohol policies. The interviewer explained that their telephone numbers had been chosen at random from the telephone directory and that their responses would be completely anonymous. Over 90% of the students contacted agreed to participate.

The interview began with several questions about the university's alcohol policies that are irrelevant to the present investigation. The critical questions regarding their own attitudes toward drinking and their estimates of the average student's attitude were as follows:

1. Now, I'd like to know how you feel about drinking at Princeton more generally. How comfortable do you feel with the alcohol drinking habits of students here? I'd like you to use a 0-to-10 scale, where 0 means you're not at all comfortable and 10 means you're very comfortable.
2. How comfortable would you say the average Princeton undergraduate feels with the alcohol drinking habits of students here at Princeton, where 0 means not at all comfortable and 10 means very comfortable?

Subjects responded to each question by giving the interviewer a number from 0 to 10. Finally, subjects were asked about their own drinking habits. After reassuring them of their anonymity, the interviewer asked two open-ended questions:

3. How many alcoholic drinks have you had in the last week?

4. How many alcoholic drinks do you have in a typical week during the semester?

Subjects estimated their weekly alcohol intake. At the conclusion of the interview, subjects were informed that we would be calling back later in the term to find out whether people's attitudes had changed over time. The interviewer explained that "When we do [call back], we would like to talk to you again, so if you could let your roommates know that you're the survey person, we'd really appreciate it."

Approximately 8 weeks after the first interview, subjects were recontacted for the second interview. All 50 students again agreed to participate. They were asked the same questions as in the first survey, including the questions about their own comfort with drinking, the average student's comfort with drinking, and their recent and typical alcohol intake.

## Results

**Attitudes and norms.** The social psychological literature contains many compelling demonstrations of the power of social influence to move individual attitudes in the direction of the social norm. We tested the prediction that people will internalize what they perceive to be the social norm by examining changes in subjects' ratings of their own comfort and the average student's comfort with alcohol drinking over the course of the semester. Means and standard deviations for the two comfort questions are shown in Table 3. (We added 1 point to each observation to make the scales comparable with those used in Study 1.) Inspection of the means suggests that in the face of relatively stable social norms, men, but not women, did indeed bring their own attitudes into line.

Inferential statistics confirmed this observation. A  $2(\text{sex}) \times 2(\text{target}) \times 2(\text{time})$  ANOVA revealed a significant three-way interaction,  $F(1, 48) = 3.92, p = .05$ . Female subjects rated themselves as significantly less comfortable with alcohol drinking than the average Princeton undergraduate across both interviews; for target main effect,  $F(1, 24) = 11.94, p < .005$ ; Target  $\times$  Time interaction,  $F < 1$ . Male subjects showed a similar self-other difference in the first interview,  $F(1, 24) = 8.24, p < .01$ ;

by the second interview, the difference was eliminated,  $F(1, 24) = 1.69, p > .10$ ; Target  $\times$  Time interaction,  $F(1, 24) = 3.92, p = .06$ . Thus, men behaved in the way social influence theorists would expect: They changed their own attitudes toward drinking in the direction of the social norm. Women, on the other hand, showed no change in attitudes over time.

Correlational analyses provided further evidence of internalization among male, but not among female, subjects. If individuals respond to perceived deviance by bringing their attitudes into line with their perceptions of the norm, we would expect the correlation between attitudes and norms to increase over time. Male subjects showed just such an increase. Correlations between attitudes and norms are presented in the top line of Table 4. For men, the correlation between attitudes and norms increased from .34 in the first interview to .76 after 8 weeks. For women, the attitude-norm correlation showed a substantial decrease from .60 in the first interview to -.08 in the second interview.

Again, as in Studies 1 and 2, estimates of the comfort of the average Princeton student with alcohol were much less variable than subjects' own comfort ratings. A statistical comparison of the variances of the two distributions yielded a highly significant difference at both time points,  $F_{s}(49, 49) = 3.36$  and  $5.51$  for the first and second interviews, respectively,  $p < .0001$ .

**Drinking behavior.** We examined the relation of private attitudes and social norms to drinking behavior as well. Subjects' estimates of the number of drinks they had had in the past week and the number of drinks they had in a typical week correlated highly ( $r = .78$  for the first interview and  $.93$  for the second interview) and so we averaged them to form a single index of drinking behavior at each interview. Means and standard deviations for this index are shown in Table 5.<sup>2</sup> We expected drinking habits to be reasonably stable among our sophomore subjects, and indeed an initial ANOVA revealed a significant gender difference in drinking ( $M = 2.69$  for women and  $6.16$  for men),  $F(1, 46) = 5.17, p < .05$ , but no change in drinking over time ( $F < 1$ ) nor any Sex  $\times$  Time interaction,  $F(1, 46) = 1.61, p > .10$ .<sup>3</sup> However, correlational analyses provided some indirect evi-

Table 3  
*Ratings of Own and Others' Comfort With Alcohol Drinking in Study 3*

Group	September		December	
	Self	Average student	Self	Average student
<b>Women</b>				
<i>M</i>	6.08	7.16	5.94	7.74
<i>SD</i>	2.47	1.55	3.10	1.20
<b>Men</b>				
<i>M</i>	5.84	7.48	7.08	7.58
<i>SD</i>	3.01	1.45	2.70	1.27
<b>Total</b>				
<i>M</i>	5.96	7.32	6.51	7.66
<i>SD</i>	2.75	1.50	2.91	1.24

*Note.* All ratings were made on 11-point scales (0 = *not at all comfortable* and 10 = *very comfortable*). We added 1 point to each observation to make the scale comparable with the scale used in Studies 1 and 2.

<sup>2</sup> Initial exploration of the distribution of scores on the drinking measure (separately for men and women at each time point) revealed several outliers: Two men and one woman in September and one man and one woman in December reported levels of drinking that were extremely high compared with the rest of their distribution. To ensure that these points did not unduly affect the results, we analyzed the data three ways: (a) including these values, (b) replacing them with the closest values that were not outliers (i.e., with the value of the inner fence; see Tukey, 1977), and (c) excluding them. The patterns of results from these three sets of analyses were identical and led to the same substantive conclusions. Thus, in the text, we report the results of the analyses with all values included; the results of the two alternative analyses are provided in footnotes.

<sup>3</sup> With replacement of outliers: in September, women ( $M = 3.22, SD = 4.06$ ), men ( $M = 5.13, SD = 7.04$ ); in December, women ( $M = 1.61, SD = 2.31$ ), men ( $M = 6.46, SD = 7.16$ ). With exclusion of outliers: in September, women ( $M = 2.72, SD = 3.64$ ), men ( $M = 3.53, SD = 4.51$ ); in December, women ( $M = 1.39, SD = 1.95$ ), men ( $M = 4.70, SD = 5.76$ ). For all analyses, the sex difference was the only significant effect.

**Table 4**  
*Correlations Among Drinking Behavior, Own Attitudes, and Estimates of Others' Attitudes*

Measure	Women		Men	
	September	December	September	December
Own and others' attitudes	.60**	-.08	.34†	.76***
Behavior and own attitudes	.56**	.45*	.28	.59**
Behavior and others' attitudes	.13	-.16	-.11	.34†

†  $p < .05$ , one-tailed. \*  $p < .05$ , two-tailed. \*\*  $p < .01$ , two-tailed. \*\*\*  $p < .001$ , two-tailed.

dence of increased consistency of attitudes, norms, and behavior again among male, but not among female, subjects.

Correlations of behavior with attitudes and norms are shown in the last two lines of Table 4. For female subjects, both sets of correlations remained fairly stable over time. The attitude-behavior correlation was around .5 at both interviews, and the norm-behavior correlation was not significantly different from zero at either time point. For male subjects, both the attitude-behavior and the norm-behavior correlations increased over the course of the semester: The attitude-behavior correlation went from .28 at the first interview to .59 at the second interview, and the norm-behavior correlation went from -.11 at the first interview to .34 at the second interview.<sup>4</sup> Of course, we can draw no causal inferences on the basis of these results. Still, the pattern of correlations for men is quite consistent with the operation of conformity pressures to bring attitudes, norms, and behavior into line.

One final set of analyses lent further support to this conclusion. We performed separate multiple regression analyses for men and women within interviews to test a model of individual attitudes as a joint function of drinking behavior and social norms. The results of these analyses are shown in Table 6. For women, their own comfort with drinking was predicted quite well from their drinking habits and their estimates of others' comfort with drinking at the start of the term; that prediction grew substantially worse over time. For men, the opposite was true: Their alcohol drinking habits and their estimates of others' comfort with drinking provided a relatively poor prediction of their own comfort at the start of the term, but that prediction became much better over time.<sup>5</sup> Again, these results for men are consistent with theorizing about conformity pressures in social groups; the results for women, on the other hand, suggest increasing alienation over the course of the semester.

### Discussion

The pattern of results in this study clearly indicates internalization on the part of men and alienation on the part of women. The obvious question raised by these results is why men and women responded to pluralistic ignorance so differently. Because these gender differences were not predicted, we have no ready-made explanation for them. However, one potential explanatory factor is suggested by the finding that male subjects reported an alcohol consumption rate over double that reported by female subjects. One interpretation of this difference is that alcohol consumption is a more central or integral aspect of

male social life than of female social life. If so, men might be expected to feel greater pressures to learn to be comfortable with alcohol. By contrast, women, and particularly women at historically male institutions, may be accustomed to finding themselves at odds with the social norm concerning alcohol. As a result, they may have come to view that norm as less relevant to their behavior than to the behavior of men.

Another possibility is that men are simply more inclined to react to feeling deviant from the norm with conformity, whereas women react to deviance with alienation. Although this suggestion that men conform more readily than women runs contrary to previous theorizing about gender differences in influenceability (see Eagly, 1978), there is some supporting evidence for it in the literature on gender differences in ego defenses. Considerable research suggests that in the face of ego threat, men react with externalizing defenses, such as projection and displacement, whereas women react with internalizing defenses, such as repression and reaction formation (Cramer, 1987; Levit, 1991). In the case of pluralistic ignorance, these differences in ego defenses may translate into a greater tendency of men to internalize the norm: Whereas women turn against themselves for being deviant, men take constructive steps to be less deviant.

One final point deserves consideration. Although men appear to have been able to resolve pluralistic ignorance through internalization, it is important to note that at the beginning of their 2nd year in college, both men and women were experiencing pluralistic ignorance in equal measure. Furthermore, Studies 1 and 2 provided evidence of pluralistic ignorance in a cross-section of the male population, including older as well as younger students. These findings suggest that internalization

<sup>4</sup> With replacement of outliers: attitude-behavior correlations in September and December, respectively, for women were .57 and .44 and for men .26 and .59; norm-behavior correlations in September and December, respectively, for women were .11 and -.22 and for men -.17 and .33. With exclusion of outliers, attitude-behavior correlations in September and December, respectively, for women were .50 and .31 and for men were .00 and .53; norm-behavior correlations in September and December, respectively, for women were .06 and -.30 and for men were -.42 and .26.

<sup>5</sup> With replacement of outliers: women in September ( $R = .77$ ), in December ( $R = .33$ ); men in September ( $R = .45$ ), in December ( $R = .82$ ). With exclusion of outliers: women in September ( $R = .73$ ), in December ( $R = .10$ ); men in September ( $R = .32$ ), in December ( $R = .80$ ).

Table 5  
*Self-Reported Drinking Behavior*

Group	September	December
<b>Women</b>		
<i>M</i>	3.60	1.79
<i>SD</i>	5.28	2.92
Interquartile range	0-5	0-3
<b>Men</b>		
<i>M</i>	5.74	6.44
<i>SD</i>	8.74	7.26
Interquartile range	0-9	1-9

*Note.* Drinking behavior was measured by averaging subjects' estimates of the number of alcoholic drinks they had in the past week and the number they had in a typical week.

of the norm may provide only a temporary resolution of the perceived self-other discrepancy in comfort with alcohol; when social pressures are less immediate (e.g., during school breaks) or when those pressures change (e.g., as they do in students' 3rd and 4th years at Princeton), men may experience recurring concerns about students' excessive drinking habits.

#### Study 4

Study 3 provided evidence that, at least for women, pluralistic ignorance cannot easily be resolved through internalization. In Study 4, we explored the link between pluralistic ignorance and feelings of alienation from an institutional norm and from the institution itself. We were particularly interested in testing Noelle-Neumann's (1986) contention that people will be unwilling to express their opinions publicly when they feel that those opinions are deviant. This hypothesis, applied to a context of pluralistic ignorance, yields a provocative prediction; namely, even when people's private attitudes are in line with the norm of the group, they should be hesitant to express those attitudes if they mistakenly believe they are deviant.

To test this hypothesis, we needed a case of pluralistic ignorance in which the attitude in question had clearly available means of public expression. Such an issue arose in the fall of 1991 when the university instituted a campus-wide policy banning kegs of beer. The keg ban was imposed unilaterally by the president of Princeton, who saw it largely as a symbolic act designed to demonstrate the university's concern about drinking on campus. The policy was immediately unpopular: Editorials appeared in the student newspaper and other publications, and there was even protest from alumni groups (who would no longer have kegs at reunions).

Despite the apparent consensus around a negative attitude toward the keg ban, we suspected that private sentiments were not nearly so negative. It was a time of great concern about alcohol use on campus, and many students privately expressed approval that the president of the university was willing to take action on the issue. Also, because the ban affected only kegs, students would still be free to drink bottled beer and other forms of alcohol if they wished. In short, it was a symbolic act that was unlikely to have dire consequences for social life at Princeton.

Thus, the keg ban provided the perfect issue for our investigation of the behavioral manifestations of alienation. We expected that we would find evidence of pluralistic ignorance on the keg ban issue, with people's private attitudes being much less negative than the prevailing social norm. In addition, unlike general comfort with alcohol, attitudes toward the keg ban had a clear means of public expression: We could ask students how willing they were to participate in social actions designed to protest the ban. Our hypothesis was that regardless of their actual attitude toward the keg ban, feeling deviant from the norm would inhibit students from taking any action to protest the ban and might produce more general symptoms of alienation from the university as well.

#### Method

*Subjects.* Ninety-four undergraduates voluntarily attended a mass testing session, in which they participated in this and other short studies for pay. The sample included 52 women and 42 men, with approximately even distribution of women and men across the 1st- through 4th-year classes.

*Procedure.* Subjects responded to a brief, two-page questionnaire that was included in a large booklet. The questionnaire was presented as a study of attitudes about the keg ban, about alcohol use on campus, and about life at Princeton more generally. The first question assessed their attitudes toward the keg ban:

- How do you feel about the university's new policy banning kegs on campus? Please indicate your feelings by circling a number from 0 to 10.

Subjects circled a number on the accompanying scale, with 0 labeled *totally opposed* and 10 labeled *totally in favor*. Next, they were asked to estimate the attitudes of other students, using a comparative scale:

- Compared to you, how does the average Princeton undergraduate feel about the university's policy banning kegs on campus?

Subjects circled a number from 1 to 5 on the accompanying scale, with the numbers labeled *much more negative*, *somewhat more negative*, *about the same*, *somewhat more positive*, and *much more positive*. The next two questions concerned their willingness to take social action to protest the keg ban:

- How many signatures in protest of the ban would you be willing to go out and collect? Please circle a response from 0 signatures to 100 or more signatures.

- How much of your time would you be willing to spend discussing ways to protest the ban? Please circle a response from no time to 10 or more hours.

Subjects circled a number from 0 to 100 (in increments of 10) to indicate how many signatures they would be willing to collect and a

Table 6  
*Predicting Own Attitudes From Drinking Behavior and Estimates of Others' Attitudes*

Group	Adjusted <i>R</i>	Adjusted <i>R</i> <sup>2</sup>
<b>Women</b>		
September	.75**	.56
December	.36†	.13
<b>Men</b>		
September	.44*	.20
December	.85**	.73

† *p* < .05, one-tailed. \* *p* < .05, two-tailed. \*\* *p* < .001, two-tailed.

number from 0 to 10 (in increments of 2) to indicate how many hours they would be willing to discuss. Finally, they answered two questions that were designed to measure their connection to the university:

5. What percentage of reunions do you expect to attend after you graduate from Princeton?
6. How likely are you to donate money to Princeton after you graduate?

Subjects circled a number from 0 to 100 (in increments of 10) to indicate the percentage of reunions they expect to attend and a number from 1 (*not at all likely*) to 9 (*very likely*) to indicate how likely they are to donate money to Princeton after graduation.

## Results

We divided subjects into two categories on the basis of their responses to the question of how the average student feels about the keg ban compared with themselves. Forty women and 29 men indicated that the average student was either much more negative or somewhat more negative about the keg ban than they were; these subjects constituted the *others-more-negative* group. Eleven women and 11 men indicated that the average student felt about the same as they did; these subjects constituted the *others-the-same* group. (Two men and 1 woman indicated that the average student was more positive than they were; because this group was too small to analyze, the responses of these subjects were discarded.) The distribution of subjects into these two categories confirmed our expectation that students' attitudes toward the keg ban, like their general comfort with alcohol, would be characterized by pluralistic ignorance: They showed a systematic tendency to believe that the average student felt more negatively about the keg ban than they did.

We predicted that subjects who believed themselves to be different from the average student would be less likely to take social action against the keg ban and would be less connected to the university compared with subjects who believed themselves to be the same as the average student, controlling for actual attitudes toward the ban. Means and standard deviations for the attitude and behavior questions are shown in Table 7. Not surprisingly, subjects' own attitudes toward the ban corresponded to their comparative ratings of others' attitudes: Subjects in the others-more-negative group expressed more favorable attitudes toward the ban than did subjects in the others-the-same group,  $F(1, 90) = 48.26, p < .0001$ . However, even controlling for this difference in private attitudes, subjects who felt that their attitude was different from the norm still were less willing to take action against the ban.<sup>6</sup> A 2 (sex)  $\times$  2 (comparison group) analysis of covariance, controlling for attitudes, yielded a significant effect of comparison group on willingness to collect signatures,  $F(1, 90) = 18.94, p < .0001$ , willingness to work hours,  $F(1, 90) = 10.99, p < .005$ , and percentage of reunions expected to attend,  $F(1, 89) = 8.10, p < .01$ . The effect of comparison group on likelihood of donating money was not significant,  $F(1, 90) = 1.08, p > .10$ , although the means were in the expected direction. There was also a significant gender difference in willingness to collect signatures,  $F(1, 90) = 4.57, p < .05$ , and a marginally significant gender difference in willingness to work hours,  $F(1, 90) = 3.42, p < .07$ . None of the Sex  $\times$  Comparison Group interaction effects were significant.

## Discussion

These results provide clear evidence that people who feel deviant from the norm of their social group are inhibited from acting. Regardless of their actual position on the keg ban, subjects who believed that others felt more negatively than they did were less likely to act on the ban and were also less connected to the university, as measured by their plans to attend reunions after graduation. These results demonstrate that mistakenly believing oneself to be deviant is associated with considerable alienation from the group. However, it is also important to note that the results of this study are correlational and do not enable us to make causal statements about the precise role of feeling deviant on the keg ban issue in producing the observed effects.

The results of this study, combined with those of Study 3, provide an interesting picture of the consequences of pluralistic ignorance regarding alcohol use for male and female students. For men, the pattern of results followed quite closely the predictions of the social influence literature: When they perceived their attitudes to be different from the normative attitudes of their group, men showed signs of alienation (Study 4) and responded to their perceived deviance by changing their attitudes in the direction of the norm (Study 3). For women, the pattern of results was more anomalous: They also showed signs of alienation when they perceived their attitudes to be deviant, but did not respond by moving toward the norm. Indeed, if anything, they appeared to grow more alienated over time (Study 3).

We believe that the most parsimonious account for these results focuses on the different relations of men and women to both the norm in question and to the group. As noted in connection with Study 3, norms related to alcohol use are likely to be much more central for men than for women. Likewise, fitting in at the university is likely to be more critical for men than for women. Even though Princeton had admitted female students for more than 2 decades, male students are still both the statistical and the psychological norm. (Many of the university's institutions and traditions were developed when it was an all-male school.) Thus, whereas Princeton men are likely to feel strong conformity pressures, Princeton women may have less ability and less motivation to conform to the norms of the group. They may see some degree of deviance and alienation as inherent in their position within a historically male institution. Of course, this explanation is speculative, but it is consistent both with previous theorizing about social groups (e.g., Festinger et al., 1950) and with the present results.

## General Discussion

In pursuit of an answer to the question of how people respond to perceived differences between themselves and the group, social psychologists have largely ignored the more preliminary questions of how, and with what degree of accuracy, people identify social norms. In most laboratory investigations

<sup>6</sup> The use of analysis of covariance as a way of equating the two groups on attitudes is a reasonable but not perfect strategy; see Huijtema (1980) for a full discussion of the assumptions and limitations of this statistical approach.

Table 7

*Ratings of Attitude Toward the Keg Ban, Willingness to Take Action, and Connection to the University of Comparative Attitude of the Average Student*

Measure	Average student's attitude			
	Women		Men	
	More negative	Same	More negative	Same
<b>Keg ban attitude</b>				
<i>M</i>	4.70	0.64	4.97	1.09
<i>SD</i>	2.55	0.92	2.61	1.30
<b>Signatures</b>				
<i>M</i>	6.05	49.09	3.14	30.00
<i>SD</i>	19.04	27.00	8.48	33.47
<b>Hours</b>				
<i>M</i>	0.40	2.55	0.34	1.45
<i>SD</i>	1.03	1.57	0.94	1.81
<b>% reunions</b>				
<i>M</i>	33.88	57.27	34.29	47.27
<i>SD</i>	22.37	25.73	24.10	29.70
<b>Donations</b>				
<i>M</i>	4.65	6.27	4.69	6.00
<i>SD</i>	2.28	2.32	2.54	2.49

of social influence, the task of identifying group norms is eliminated by fiat of experimental design. (If the norm is measured at all, it is only done so as a manipulation check.) In real-world social groups, however, the task of identifying the group norm can be highly complex and demanding, so much so that members' estimates of the norm are often seriously in error. The present studies documented significant errors in college students' estimates of social norms relating to comfort with alcohol (Studies 1, 2, and 3) and attitudes toward a new university-mandated policy to reduce alcohol abuse (Study 4). Especially interesting was the systematic nature of the errors: Students erred by overestimating their fellow students' support for the status quo. Indeed, they assumed that the average other student was more in favor of the status quo than they themselves were. In short, students were victims of pluralistic ignorance: They believed that the private attitudes of other students were much more consistent with campus norms than were their own.

#### *Norm Misperception: Possible Interpretations*

The reported discrepancy between students' own attitudes and those they attribute to their friends and peers may have many sources. The least interesting interpretation, from a psychological standpoint, is that the reported discrepancy is merely that: a reported discrepancy that does not reflect true perceptions. By this impression management account, students may not actually think they are deviant but only portray themselves as such. Their descriptions of themselves as deviating from the status quo could simply constitute strategic attempts to present themselves as nonconformists, as people who are less supportive of their group's norm than the average group member. By presenting themselves in this way, the students might have hoped to convey the impression (if they assumed

that the researcher disapproved of the group's norm) that they were more mature, more progressive, or more enlightened than their peers.

An impression management account could be applied to virtually all the studies that have reported erroneous perceptions of one's own attitudinal or behavioral deviance. The form that pluralistic ignorance takes in these studies is almost always the same: Subjects report that they are more sympathetic to the positions or concerns of some out-group than are their peers. For example, Whites portray themselves as more sympathetic to Blacks than their fellow Whites (Fields & Schuman, 1976), teachers portray themselves as more sympathetic to students than their fellow teachers (Packard & Willower, 1972), and prison guards portray themselves as more sympathetic to prisoners than their fellow guards (Kauffman, 1981).

Although it is possible that students in the present studies were motivated to portray themselves as more sympathetic to the position of the university administration than their fellow students, there are a number of reasons to doubt this self-presentational account. First, the anonymous nature of the data collection provided subjects with very little incentive to self-present. Second, the finding in Study 4 that subjects' estimates of their attitudinal deviance correlated positively with various measures of alienation, even when equating for their own attitudes, is hard to reconcile with a self-presentational interpretation. Subjects not only described themselves as being out of step with the social norm, but also they acted as though they were out of step with this norm. Even more problematic for the self-presentational account is the finding in Study 3 that male subjects moderated their perception of their deviance over time by shifting their attitudes toward their estimates of the social norm. If these subjects were attempting to present themselves as being more progressive or enlightened than their peers, it is unlikely that they would have reported their attitudes to be

closer to the norm at one time than another. In short, the present findings are much more consistent with the view that the pluralistic ignorance observed in the present studies represented authentic perceptions of deviance and not just ones offered for public consumption.

Another possible interpretation of students' perceived deviance focuses on the representativeness of the public data from which they inferred others' attitudes. These data may have been skewed in the direction of the perceived norm. For example, campus publications may have tended to express more pro-norm opinions than antinorm opinions. Similarly, students who strongly supported campus norms may have expressed their attitudes more vociferously than those who only weakly supported them or who disapproved of them. Korte (1972) offered the following general summary of this process:

The side of an issue representing a cultural (or subcultural) value is more prominent, more frequently and loudly advocated by its adherents. From the point of view of the individual, this source of bias constitutes an unrepresentative sampling of the relevant population. (p. 586)

Through an accurate reading of a biased distribution of publicly expressed opinions, students may have been led to erroneous perceptions of their peers' attitudes. Interestingly, this account implies that pluralistic ignorance could arise without students misrepresenting their true opinions. It suggests that pluralistic ignorance may require a silent majority but not a dissembling one.

We cannot rule out the biased sample hypothesis, but it has difficulty accounting for the data on friends' attitudes in Study 2. There, we found that subjects revealed pluralistic ignorance not just when estimating the attitudes of the average Princeton student but also when estimating the attitudes of their friends. It seems implausible that students would use the public expressions of their vocal friends to infer the private attitudes of their silent friends. Inferences concerning the population of a campus must be estimated from a sample of that population, but inferences concerning the population of one's friends need not depend on sample-to-population generalization.

Two other possible accounts of the pluralistic ignorance observed in these studies focus on students' interpretation and encoding of their own and others' behavior. The first of these accounts, which we call the *differential interpretation hypothesis*, suggests that students display pluralistic ignorance in their reactions to alcohol issues because they (a) present themselves as being more supportive of campus norms than they are and (b) fail to recognize that others are also misrepresenting their true feelings. The first of these points is well documented: Many authorities have noted that group members often display more public support for group norms than they privately feel (Goffman, 1961; Matza, 1964; Schanck, 1932). As Goffman (1961) stated, "when the individual presents himself before others, his performance will tend to incorporate and exemplify the officially accredited values of the society, more so, in fact, than does his behavior as a whole" (p. 35).

Comfort with alcohol and opposition to alcohol restrictions may not be "officially accredited" campus values, but they may serve a similar function. Alcohol on most college campuses,

and certainly on the Princeton campus, is not simply a critical feature of social life: It is also an important source of in-group-out-group polarization. Nothing is more central to the power struggle between students and the administration, faculty, and larger community than campus alcohol policy. Thus, even if students do not privately support the student position on alcohol, they may feel compelled to do so publicly out of a sense of group loyalty. Acknowledging that the other side has a point, or is not all bad, can carry a stiff social penalty.

There may be many reasons for students to exaggerate publicly their support for campus alcohol norms, but why do they not assume that their peers' public behavior is similarly inauthentic? One possibility, suggested by Miller and McFarland (1987, 1991), is that people hold a general belief that they are more fearful of appearing deviant than is the average person. Thus, students may be disposed to accept as authentic the public pronorm behaviors of their peers, despite recognizing that their own public pronorm behaviors are inauthentic.

A final explanation for the observed pluralistic ignorance points to potential differences in the way students encode their own and others' behavior. According to this differential encoding account, students may fail to recognize how pronorm their public behavior actually is, mistakenly believing that their private discomfort with alcohol practices is clear from their words and deeds. If students do suffer from an *illusion of transparency* (Miller & McFarland, 1991), they might reasonably assume that because the words and deeds of others signal more comfort than they themselves feel (and supposedly express), they must be alone in their discomfort.

Although both the differential interpretation and differential encoding hypotheses are plausible accounts of pluralistic ignorance in the present context, we have no direct evidence to support or to distinguish between them. It is quite possible that the two operate in parallel, along with other biases, to make pluralistic ignorance an overdetermined phenomenon. Future research could shed light on these accounts by determining whether students do (a) misrepresent their private attitudes in their public pronouncements or (b) generate different interpretations for what they saw as similar public behavior in themselves and others.

Before leaving our analysis of pluralistic ignorance effects, we should comment briefly on the apparent inconsistency between this phenomenon and the well-documented *false consensus effect*: people's tendency to overestimate their similarity to others (Marks & Miller, 1987; Ross, Greene, & House, 1977). The two phenomena are different but are not incompatible (see Suls, 1986). The norm misperception that arises in cases of pluralistic ignorance is most appropriately operationalized as a mean difference between the actual group norm and the perceived group norm; false consensus, on the other hand, is most appropriately operationalized as a positive correlation between ratings of the self and ratings of others. Theoretically, it is possible for there to be both a positive correlation between people's judgments of self and others and a mean difference in self-other ratings. Indeed, we found precisely this pattern of results in Study 1 (for the self-other correlation,  $r = .37, p < .001$ ) and in Study 2 ( $r = .27, p < .01$ ). Thus, although students anchored their estimates of the average student's level of comfort on their

own (hence the positive correlation), they also perceived there to be a systematic difference between their comfort level and the comfort of others. Nisbett and Kunda (1985) provided numerous other examples in which subjects displayed both false consensus effects and systematic biases in central tendency estimates.

### *Norm Misperception: Social and Psychological Consequences*

What are the consequences of mistakenly assuming that the views of one's peers are different from one's own? Although illusory norms may not have the force of overt social pressure behind them, they still can have powerful social and psychological consequences.

*Social consequences.* Pluralistic ignorance has traditionally been linked to two consequences: the social construction of emergency situations as nonemergencies and the perpetuation of unsupported social norms. Defined broadly, the pluralistic ignorance found in the present studies may have had both of these consequences. Consider emergency nonintervention first. We obviously did not focus on emergency situations directly in these studies, but it is quite possible that most of our subjects had witnessed situations involving alcohol abuse that they viewed as potentially serious. If so, we can surmise that the pluralistic ignorance dynamic described by Latané and Darley (1970) may have been replicated frequently on the Princeton campus, resulting in (a) the withholding of assistance to inebriated students about whom all members of groups were concerned and (b) increased confidence on the part of nonacting, but nonetheless concerned, bystanders that they were much less cool about the consequences of excessive drinking than were their friends and fellow bystanders.

The role of pluralistic ignorance in perpetuating unsupported or weakly supported social norms in the present context is also easy to sketch. Alcohol may have continued to play a central role in campus life not because students wanted it that way but because they thought that everyone else wanted it that way. For example, students themselves might often, or even generally, be indifferent to the availability of alcohol at a party, but they may assume that most other students have a strong preference for parties at which alcohol is present. This logic could have many consequences, the most obvious of which is that students, assuming that more people will come to parties that serve alcohol, will seek out parties with alcohol. It also suggests that students hosting parties will assume that they must provide alcohol to satisfy their guests. In short, attempts to institute alcohol-free social activities or institutions may fail to generate support because students mistakenly (and self-fully) assume they will not be widely supported.

One additional social consequence illustrated by the present findings is that individuals may actually conform to their mistaken estimates of the group norm. Previous research on substance use has shown that people's estimates of the prevalence of drug use among their peers influences their own use, whether these estimates are accurate or inaccurate (Kandel, 1980; Marks, Graham, & Hansen, 1992; Sherman, Presson, Chassin, Corty, & Olshavsky, 1983). Similarly, in Study 3, male

subjects modified their private attitudes over time in the direction of the position they mistakenly assumed was held by the average student. In effect, they achieved a level of comfort that few students initially felt simply because they thought that everyone felt that way. This analysis highlights the fact that the norms of a social group may be largely independent of the norms of the group members (Turner & Killian, 1972). The desire to be correct and to fit in may lead people to conform, even without social pressure, to what they (mis)perceive to be the norm of the group. In these cases, pluralistic ignorance will be highly ephemeral. If people come to believe what they mistakenly attribute to everyone else, then an originally erroneous perception of the situation will become accurate at the private, as well as the public, level. Misjudgments of others will drive out correct judgments of the self.

*Psychological consequences.* Our discussion suggests that the social consequences of pluralistic ignorance are significant. However, as the present research indicates, pluralistic ignorance has powerful psychological consequences as well. As documented in our studies, many of the consequences of mistakenly perceiving oneself as deviant are not much different from the consequences of accurately perceiving oneself as deviant. Discomfort, alienation, and an inclination to move in the direction of the majority appear to characterize the phenomenology of illusory deviants as well as real deviants. Indeed, because victims of pluralistic ignorance will typically be involuntary deviants, they may experience the pain of their deviance quite acutely. They may lack the comforting belief that they chose to march to the beat of a different drummer.

Whether victims of pluralistic ignorance do or do not experience their deviance more acutely than voluntary deviants, we have evidence that they manifest real symptoms. For the male subjects in Study 3, for example, the pain of perceiving themselves as deviant may have been a critical factor motivating them to conform to the (illusory) norm of their social group. Moreover, the present findings suggest that people may be much less inclined to conform to majority influence, real or imagined, than is generally assumed by social psychologists. Female subjects in Study 3 retained their (self-perceived) deviant attitudes, a response consistent with other signs of alienation found in both male and female subjects in Study 4. These results raise the possibility that conformity may not play as dominant a role in resolving self-group discrepancies as most psychological equilibrium models have posited.

### *Conclusions*

The reported studies illustrate a number of important points about the relation between private attitudes and social norms. Taken together, they indicate that people can often err considerably in situating their attitudes in relation to those of their peers and that these errors have real consequences, both for the individual and for the group. Because little research attention has been given to questions of norm estimation, we know very little about the processes through which individuals identify and represent the norms of their social groups. The present results suggest that further attention to these questions may lead to a

better understanding of the ways in which norms can perpetuate social problems, like alcohol use, and can inhibit social change.

The findings of these studies have practical implications as well. In particular, our analysis of the role of pluralistic ignorance in perpetuating dysfunctional social norms has clear implications for programs designed to effect social change. Programs aimed at the individual, such as informational campaigns or individual counseling sessions, may change private attitudes, but they are likely to leave social norms, and in many cases public behavior, untouched. Indeed, our research suggests that recent attempts by universities to raise consciousness about alcohol abuse on campus may have been effective at changing the attitudes of individual students (see also Trice & Beyer, 1977) but not at changing their perceptions of the attitudes of their peers. A more effective way to facilitate social change may be to expose pluralistic ignorance in a group setting and to encourage students to speak openly about their private attitudes within the group. Such an approach would promote social change by demonstrating that it has, in effect, already occurred at the individual level and simply needs to be acknowledged at the social level.

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Received May 1, 1992

Revision received August 19, 1992

Accepted September 16, 1992 ■

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