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# We Think You Agree: The Detrimental Impact of the False Consensus Effect on Behavior

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Two studies were designed to examine the impact of the false consensus effect on behavior (FCE; Ross, Greene, & House, 1977). False consensus is a form of social projection whereby individuals overestimate the degree to which others share their characteristics or beliefs. In a modified test of the theory of reasoned action, Study 1 demonstrated that the FCE independently predicts behavioral intentions regarding important social issues in a sample comprised of 205 college students. Further, results indicated that self-monitoring moderates the extent to which the FCE predicts behavioral intentions (specifically, as hypothesized, the FCE is a stronger predictor of behavior for high self-monitors). Because of the prevalence of the FCE among college students regarding potentially harmful social behaviors, Study 2 was designed to eliminate the FCE by differentially presenting students ( $N = 280$ ) with alternative viewpoints regarding various issues. Presenting both sides of an argument using video-based stimuli effectively reduced the FCE. Recommendations for interventions that effectively promote beneficial social norms are discussed.

The false consensus effect (FCE; Ross, Greene, & House, 1977), or the tendency to overestimate the degree to which others share our attitudes and traits, is one of the most robust and well-documented social judgment biases (see review by Mullen et al., 1985). The FCE can also be viewed as a special case of the inaccurate assessment of social norms. Extensive research in social psychology has demonstrated that people use others as sources of information regarding social reality (Asch, 1955; Festinger, 1954). However, these judgments of social reality may, in fact, be distorted interpretations caused, at least partially, by this tendency to overestimate support for one's own beliefs. Further, people's behaviors may be derived from these potentially erroneous social norms. Fishbein and Ajzen's (1975) theory of reasoned action provides a useful model with which to understand how people's interpretations of social norms might incorrectly bias their attitudes and subsequent behavior. The scope of the current research is to assess the potential impact that inaccurate social norms derived from FCE have on behavioral intentions.

Further, as the FCE may lead people to engage in potentially dangerous peer-influenced behaviors, a second study was conducted to assess the effectiveness of different strategies designed to reduce this bias.

With regard to the assertion that people rely on others as sources of social reality, Festinger (1954) defined social comparison as a means of establishing social norms when no objective criteria existed. He stated that individuals evaluate their opinions and abilities based on other people. In other words, they use other people to ensure that their beliefs conform to social norms and to confirm their perceptions of social reality. Festinger elucidated a number of hypotheses about the social comparison process. First, he stated that people possess a drive to evaluate their opinions and abilities. Second, he hypothesized that people would evaluate their opinions and abilities by comparison with others, only when objective, non-social means were not available. Third, social comparison decreases when the differences between the comparison groups increases (i.e., people do not use *dissimilar* people as reference groups). Based on these premises, a number of assertions can be made regarding the current project. First, attitudes about social issues clearly do not have objective criteria. Furthermore, college students most likely rely on their peers as a reference group. Thus, estimates of peers' beliefs are probably strong determinants of people's perceptions of the social norms on campus.

While Festinger's research suggests that people are motivated to seek confirmation from their peers (c.f., Suls & Wills, 1991), other research has shown that people have difficulty accurately perceiving social norms. Funder (1987) has documented several such inaccuracies in social judgment. As an example of this type of research, Prentice and Miller (1993) conducted a study examining norms regarding alcohol use on college campuses. These researchers found that typical students engaged in drinking behaviors with which they were personally uncomfortable, largely because these students misperceived the norms as supportive of this activity. This study, which addresses pluralistic ignorance, suggests that people are not always able to accurately judge the opinions of others, especially based on these others' outward behavior.

Another reason for people's documented inability to accurately perceive social norms may be the FCE. The FCE is a special case of social projection (Holmes, 1968) which exists when people attempt to validate their beliefs by projecting their own characteristics onto other individuals. In terms of attribution theory, the FCE suggests that people tend to overestimate the degree of similarity between themselves and their peers relative to people who hold an opposing view. More specifically, people who support a given position, such as abortion, would believe that more people are in favor of this position, while people who are opposed (e.g., pro-life) would estimate that fewer people are in support of it.

In the original test of this theory, participants were presented with a series of vignettes followed by two behavioral options (Ross, Greene, & House, 1977). In one scenario, people were interviewed at a grocery store and asked if their responses could be used for a television commercial. Participants were asked to indicate what percentage of similar others would choose each option (e.g., would sign the release

for the TV station or would refuse to sign the release). Following these ratings, participants indicated which outcome they would be most likely to choose. In support of the FCE hypothesis, participants who chose a particular option rated that response as more common in people in general. A meta-analysis conducted by Mullen and his colleagues (1985) supported the original conclusions regarding the FCE. In general, this finding is quite robust and well-documented in a number of domains, suggesting that people's estimates of social norms may be systematically biased in the direction of support for their own beliefs.

### *Theory of Reasoned Action*

The research presented thus far provides compelling evidence that people make systematic errors in interpreting the social norms. However, to conclude that these misperceptions can have consequences for behavior, it is important to establish direct links between social norms and people's actions. Research on Fishbein and Ajzen's (1975) theory of reasoned action provides solid evidence that perceptions of social norms do in fact moderate the relationship between attitudes and behavior.

The theory of reasoned action states that behavior can be predicted from behavioral intentions which in turn are a function of attitudes toward the behavior and subjective norms. Ajzen (1988) defined subjective norms as "the person's perception of social pressure to perform or not perform the behavior under consideration" (p. 117). Subjective norms consist of two components: normative beliefs (i.e., beliefs concerning how important others [referents] want an individual to behave) and motivation to comply (with these referents) (Fishbein, 1979). Thus, subjective norms typically arise from perceptions of friends' and family members' beliefs. Norms are experimentally assessed by asking respondents to evaluate their perceptions of various groups' approval for a particular behavior.

In a standard test of this theory, multiple regression analyses are conducted in which attitudes and subjective norms are entered as predictor variables. A series of studies conducted by Ajzen, Fishbein, and their colleagues (1980) found both predictors (i.e., attitudes and norms) to be significant in explaining the use of birth control pills, breastfeeding, church attendance, the decision to have an abortion or another child, voting behavior, and the likelihood of entering an alcohol treatment center. While attitudes explained a larger percentage of the variance in most of these areas, norms were found to be more important predictors in the decision to have an abortion or another child. These findings make sense in light of the role that referents would play in these types of decisions. Van den Putte's (1991) meta-analysis of 113 such studies demonstrated that behavioral intentions were strongly predicted by attitudes and subjective norms. Furthermore, intentions were also significantly related to actual behavior.

The theory of reasoned action implies that perceptions of norms rather than actual beliefs direct behavior, a notion that is particularly relevant when considering behaviors that are strongly influenced by peer pressure, such as drinking and drug

use. Laflin, Moore-Hirschl, Weis, and Hayes (1994) examined the influence of subjective norms on high school and college students' drug-use behavior. They utilized questions that tapped subjective norms including items such as "Drug abuse is a serious social problem." They found a strong positive correlation between drug attitudes and subjective norms, suggesting that personal acceptance of drug use is highly related to a tendency to perceive permissive social norms for engaging in illegal drug use. Furthermore, subjective norms were found to be highly predictive of drug and alcohol use. Ross and McLaws (1992) also demonstrated that subjective norms about condom usage were better predictors of actual usage than attitudes for homosexual males. While past behavior was also shown to be an important factor, personal attitudes were only weakly related to behavior. These studies emphasize the important role that norm perception (or misperception) can play on people's behavior. Consequently, it seems important to examine the impact that erroneous norm perception can have, particularly in regard to potentially harmful social behaviors.

### STUDY 1

Research conducted by Botvin, Botvin, Baker, Dusenbury, and Goldberg (1992) demonstrated clearly that the FCE can affect behavior. In a study designed to predict tobacco use from normative beliefs, it was found that students who gave higher estimates of the prevalence of smoking were more likely to smoke or begin smoking. The researchers utilized a cohort sequential design, which allowed them to establish the potential impact of false consensus beliefs on future behavior. They surveyed approximately one thousand adolescents in seventh and ninth grade. At both times, participants completed a measure of self-reported smoking and a questionnaire tapping normative expectations about smoking, including estimates of peer and adult smoking prevalence. Botvin et al. (1992) concluded that students who believed that at least 50% of peers or adults smoked were significantly more likely to smoke. Furthermore, children in the seventh grade who did not smoke were more likely to have started in the ninth grade if they overestimated the prevalence of smoking among their peers. Overall, the researchers concluded that "adolescents tend to act in a way consistent with perceived norms" (Botvin et al., 1992, p. 177). Because students are acting in ways consistent with *perceived* norms, it is likely that their possible misconceptions (as measured by the FCE) may be playing a larger role in determining their behaviors than the actual beliefs or behaviors of important others.

The present study had three basic goals: (a) to determine whether students show the FCE for various controversial social issues, (b) to assess the relationships between the tendency to demonstrate the FCE and a variety of individual difference variables, and (c) to demonstrate that the FCE relates to behavioral intentions for social issues. Based on a pilot study,<sup>1</sup> it was demonstrated that students did show the FCE across a range of issues (e.g., legalization of drugs, women's right to have an abortion). This study was designed, in part, to replicate the findings from the pilot study. Because people do demonstrate the FCE for social issues, the next step was to test if the FCE relates to behavior. Consequently, a behavioral-intention

measure was created to examine the influence of false consensus on behavioral intentions related to each issue. Based on Fishbein and Ajzen's theory of reasoned action, it was predicted that people who are in favor of a particular issue would be more likely to report a willingness to engage in related behaviors (i.e., attitudes predict intentions). According to the theory of reasoned action, these behavioral intentions should then predict actual behaviors, although it is impossible to measure this link with the issues being studied. Although employing actual behavioral or behavioroid dependent variables (e.g., Ross et al., 1977) would have been ideal, it was not deemed pragmatic in the present research due to the sensitive topics under consideration (e.g., sexual activity and drug use); importantly, these topics were chosen because of their particular relevance and importance to the college-aged sample and the potential detrimental consequences of norm misperception. Finally, a measure of certainty regarding accuracy of perceptions was included as attitudinal certainty has been shown to be predictive of behaviors by influencing people's judgments of consensus (see Trafimow, 1994).

### *Individual Difference Variables*

Many individual differences variables also have been shown to moderate the relationship between attitudes and behavior. Several of these variables were measured in this study to help obtain an understanding of the impact of personality variables on people's attitudes and behavioral intentions toward various social issues.

*Marlowe-Crowne Social Desirability (SD).* The Marlowe-Crowne scale (Crowne & Marlowe, 1960) measures the "need for approval" or the "avoidance of disapproval" when responding to questionnaires. Because of the controversial nature of the issues selected for this research, it seemed important to assess the role of socially desirable responding. If people are basing their judgments on what they perceive as socially appropriate, these beliefs should also influence their behavioral likelihood scores. However, it is difficult to predict what effect social desirability scores will have on the behavioral likelihood measure, so its impact will be assessed in an exploratory manner.

*Self-monitoring (SM).* In a meta-analysis assessing the general relationship between attitudes and behaviors in published psychological research, Kraus (1995) found that scores on self-monitoring (i.e., the tendency to base one's behavior on situational demands) significantly moderated the relationship between attitudes and behavior, such that low self-monitors had stronger correlations between their attitudes and behavior compared to high self-monitors (.50 versus .25 for low versus high self-monitors, respectively). This tendency has been supported by several studies, including research conducted by Prislin and Kovrlija (1992), who showed that class attendance was more highly related to attitudes for low self-monitors than high self-monitors. Further, subjective norms were less predictive of low self-monitors' intentions to attend class. It was predicted that high self-monitors' intentions would be moderated by their false consensus scores to a greater degree than low self-monitors' intentions.

*Social Self-Esteem (SE)*. Previous research (Dielman, Campanelli, Shope, & Butchart, 1987) has also suggested that individuals with lower self-esteem are more likely to engage in peer-pressured behaviors, including drinking and drug use, while recent research suggests that higher self-esteem is associated with these behaviors because of their role in impression management (Sharp & Getz, 1996). In other words, many high self-esteem teens engage in behaviors that they believe will make them more popular (e.g., "smoking is cool"). In an examination of alcohol and cigarette use among college students, Sharp and Getz demonstrated that people who were more likely to begin drinking scored higher in self-esteem and self-monitoring. Due to these contradictory findings, the relationship between self-esteem and behavioral intentions was assessed in an exploratory fashion in the present study.

## METHOD

### *Participants*

Two hundred three college students (49 males and 154 females) participated in this study in partial fulfillment of a course requirement. The participants ranged in age from 18 to 25 with an average age of 18.50 ( $SD = 1.95$ ). The majority of students were freshmen (85%) who were Caucasian (95%) and Catholic (58%). Additionally, 67% defined themselves as liberal, while 31% considered themselves conservative. Sixty six percent of the sample believed that they were "similar to their peers" while 78% of the students believed that "most college students try to be similar to their peers."

### *Materials*

*False consensus measure.* The questionnaire included the following issues: abortion, euthanasia, death penalty, animal testing, legalization of drugs, the insanity plea, "gays in the military," lower drinking age, foreign aid, mandatory seat belt laws, ban on gun sales, ban on smoking in public places, women in combat, immigration laws, condom distribution in high schools, racial quotas, prayer in schools, adoption rights for homosexual couples, marriage between homosexual couples, and pornography on the Internet. The questionnaire consisted of two sections: the participant's own position on each issue (for or against) and an estimate of the percentage of peers who were in favor of each issue (on a scale from 0 to 100%). A behavioral-intention questionnaire was also added to assess the likelihood that participants will engage in acts related to each issue on a 7-point Likert scale (e.g., how likely would you be to buy beer for an underage friend?). Then, a questionnaire which asked participants to answer whether they would engage in each behavior (yes/no) and to estimate the frequency of these same behaviors for their peers was included (also on a 100% scale). An 11-point rating scale (from -5 to +5, ranging from strongly disagree to strongly agree with 0 indicating a completely neutral position) was also utilized to rate the direction and strength of participants' attitudes for each issue. Finally, a measure of certainty (on a scale of 1 "very uncer-

tain" to 5 "very certain") about participants' estimates on each issue to measure their perceived accuracy was included.

*Personality scales.* The next part of the questionnaire consisted of several personality scales, including social desirability, self-monitoring, and social self-esteem. The Marlowe-Crowne scale was used to tap social desirability (Crowne & Marlowe, 1960). A high score on this scale is indicative of the participants' tendency to respond in the conventional manner or to experimental demand characteristics. Snyder's (1974) original 25-item True/False self-monitoring scale was utilized in this experiment. High scores on this measure indicate that one's behavior is dictated more by situational demands than by internal values. Also, a social self-esteem measure (Texas Social Behavior Inventory; Helmreich & Stapp, 1974) was employed to determine the influence of people's competence in social situations on their likelihood to display false consensus.

*Demographics.* The final section consisted of demographic information, including sex, age, class, number of months at the present university, religion, major, G.P.A., and SAT scores. Two additional questions were designed to assess personal awareness of social influence. These items asked if students believe that they try to be similar or different from their peers and if, in general, college students try to be similar or different than their peers.

### *Procedure*

Participants completed the questionnaire in groups of approximately thirty individuals in a classroom setting. All students answered the self ratings on the controversial issues scale first, followed by the peer estimates (as the pilot study no found no effect for order). The remainder of the information was presented in the order described in the materials section. Completion of the questionnaire took approximately 45 minutes for most participants. After finishing the packet, all participants were debriefed and thanked for their participation.

## RESULTS

### *Replication of False Consensus Effect*

It was hypothesized that participants would display a false consensus effect, which exists when people who support a particular position estimate that a greater number of their peers also support this position relative to individuals who are opposed. To test this prediction, *t*-tests were conducted on the consensus estimates between individuals who were for and against each issue. The means and standard deviations for ratings on each issue are presented in Table 1. For eighteen of the twenty issues, false consensus was demonstrated at the  $p < .05$  level. A Bonferroni correction was used to control for Type 1 error due to the large number of comparisons being made. With the correction, sixteen of the twenty issues supported the false consensus hypothesis. Compared to the pilot study (see footnote 1), the effect was replicated



with a few exceptions; in Study 1, a significant false consensus effect was obtained for "ban on gun sales" and "racial quotas for employment." These effects might be due to the larger sample that increases the power of the statistical tests used in Study 1.

A similar analysis was conducted on the behavioral items to determine if there was a false consensus effect for people who report a willingness to engage in a given behavior relative to individuals who state that they would not be willing to engage in each behavior. Instead of asking people to state their attitudes and their estimates of how many people are in favor of a particular belief, participants were asked if they would engage in a behavior. They then were asked to estimate what percentage of their peers would also engage in this behavior. Items were worded so

**TABLE 1**  
T-Test Analyses to Measure False Consensus Comparing Consensus Estimates  
Between Participants Who Support or Oppose Various Social Issues

Issues	Support			Oppose			t
	Mean	(SD)	[N]	Mean	(SD)	[N]	
	<b>Consensus Estimates</b>						
Abortion	67.41	(16.17)	[171]	62.67	(13.24)	[30]	1.52
Euthanasia	54.32	(16.60)	[134]	34.85	(18.37)	[65]	7.49**
Death penalty	58.61	(18.38)	[153]	52.50	(16.58)	[44]	1.99*
Medical research	59.89	(19.58)	[137]	43.52	(24.47)	[63]	4.67**
Cosmetic research	48.18	(23.16)	[11]	25.04	(22.42)	[189]	3.32**
Homosexual adoption	49.64	(19.54)	[120]	38.51	(20.51)	[79]	3.86**
Drugs legalized	73.41	(18.44)	[85]	58.41	(20.93)	[114]	5.26**
Pornography on the Internet	68.11	(19.92)	[72]	43.09	(24.06)	[127]	7.49**
Insanity plea	58.62	(17.63)	[81]	43.63	(18.64)	[118]	5.70**
Gays in the military	53.86	(20.19)	[171]	44.36	(20.41)	[28]	2.24*
Lower drinking age	85.30	(15.64)	[124]	72.97	(18.22)	[76]	5.08**
Foreign aid	55.32	(16.74)	[109]	44.17	(16.75)	[87]	4.63**
Mandatory seatbelt laws	64.86	(22.43)	[159]	35.76	(18.67)	[42]	7.72**
Ban on gun sales	61.60	(18.49)	[168]	48.62	(19.80)	[32]	3.60**
Ban on public smoking	43.72	(21.65)	[110]	33.53	(21.82)	[90]	3.34**
Women in combat	65.27	(18.36)	[179]	47.27	(19.44)	[22]	4.31**
Condom distribution in schools	81.69	(16.89)	[164]	61.68	(20.17)	[34]	6.07**
Racial quotas for employment	56.84	(22.62)	[62]	41.27	(20.17)	[129]	4.80**
Homosexual marriage	44.81	(19.62)	[145]	39.17	(27.44)	[53]	1.37
Prayer in public schools	44.17	(18.57)	[12]	22.50	(17.45)	[181]	4.15**

\*  $p < .05$ .

\*\* Significant with Bonferroni correction ( $p < .0025$ ).

that they would be relevant to all groups, for example, the behavioral item relating to women's right to have an abortion was "Would you go with a friend who was having an abortion?" Therefore, males and females could both answer this question. To demonstrate the false consensus effect, *t*-tests were then conducted on the average estimates of these groups. The means and standard deviations for ratings on each issue are shown in Table 2. Last, a Bonferroni correction was used to control for Type I error due to the large number of comparisons being made.

Overall, fourteen of the twenty issues displayed the false consensus effect. Using the more stringent alpha level reduced the number of significant differences to thirteen of the twenty issues. Surprisingly, the issues for which the effect was *not* found using the behavioral indices were different from the issues when the attitudinal variable was analyzed (compare Tables 1 and 2). In general, fewer issues displayed a significant FCE for the behavioral assessment; a finding that could be due to the fact that behaviors can be observed, while attitudes have to be inferred. This discrepancy may enable people to make more accurate judgments regarding observable behavior, thus eliminating the effect. One of the original tests supporting the false consensus effect did involve behavioral intentions and behavior (e.g., asking people if they would be willing to wear a sandwich board), but this action is not common (Ross et al., 1977). Perhaps the controversial and topical nature of the issues selected for this research gives people ample opportunity to observe or intuit correct information regarding their peers' actions. However, underlying attitudes are still difficult to interpret, a fact that leads to the false consensus effect for the attitudinal measure.

### *False Consensus and Behavioral Intentions*

To test the hypothesis that the false consensus bias would predict behavioral intentions, a series of standard multiple regression analyses was conducted. It was hypothesized that people's attitudes would be the best predictor of their intentions to engage in each behavior; however, it was also expected that the degree of false consensus would explain additional variance. Furthermore, it was hypothesized that higher attitudinal certainty scores would be predictive of people's self-reported likelihood of behavior. Last, the personality variables were included to assess any individual differences in people's likelihood to participate in each act. People low in self-monitoring were predicted to be less likely to be influenced by the degree to which they demonstrated the FCE.

*Calculating false consensus scores.* Initially, participants' false consensus scores were calculated in a number of different ways. Based on Krueger and Zeiger's (1993) truly false consensus measure, a score was computed for each individual which assessed his/her overall tendency (across all issues) to overestimate support for his/her position. A similar measure was computed based on people's behavioral endorsements and estimates, rather than their attitudes. Ultimately, neither of these indices of false consensus was significantly related to behavioral intentions for the issues incorporated in this research. Thus, false consensus scores were computed for each issue by subtracting the actual consensus (based on the actual percentage

TABLE 2  
T-Test Analyses to Measure False Consensus Comparing Consensus  
Estimates Between Participants' Reported Willingness to  
Engage in Behaviors Related to Various Social Issues

Issues	YES			NO			t
	Mean	(SD)	[N]	Mean	(SD)	[N]	
Abortion	69.82	(15.67)	[174]	55.00	(16.72)	[28]	4.60**
Euthanasia	52.58	(18.88)	[66]	29.21	(22.04)	[129]	7.34**
Death penalty	65.84	(17.95)	[155]	53.19	(18.19)	[47]	4.22**
Medical research	60.73	(19.22)	[129]	38.49	(19.94)	[72]	7.76**
Cosmetic research	61.55	(20.95)	[53]	40.93	(26.07)	[149]	5.19**
Homosexual adoption	36.52	(15.96)	[85]	34.84	(23.74)	[116]	.60
Drugs legalized	79.02	(14.86)	[121]	70.27	(20.67)	[82]	3.30**
Pornography on the Internet	51.45	(19.11)	[20]	33.20	(24.40)	[182]	3.23**
Insanity plea	55.35	(17.07)	[86]	45.52	(17.55)	[113]	3.96**
Gays in the military	56.61	(17.40)	[173]	52.20	(17.98)	[25]	1.18
Lower drinking age	80.32	(12.08)	[156]	64.47	(21.05)	[47]	4.92**
Foreign aid	49.19	(16.70)	[62]	44.59	(20.87)	[133]	1.52
Mandatory seatbelt laws	48.51	(19.80)	[133]	29.77	(18.77)	[70]	6.53**
Ban on gun sales	56.04	(17.95)	[153]	51.11	(20.69)	[45]	1.56
Ban on public smoking	37.49	(18.75)	[63]	31.86	(22.69)	[138]	1.72
Women in combat	65.68	(20.18)	[167]	42.71	(15.90)	[35]	6.33**
Condom distribution in schools	75.64	(16.68)	[154]	50.35	(20.94)	[43]	8.29**
Racial quotas for employment	57.61	(20.80)	[54]	45.90	(21.52)	[140]	3.43**
Homosexual marriage	49.20	(19.23)	[134]	40.37	(26.33)	[67]	2.44*
Prayer in public schools	63.71	(20.24)	[131]	49.31	(22.74)	[65]	4.50**

\*  $p < .05$

\*\* Significant with Bonferroni correction ( $p < .0025$ ).

of people who agreed with a particular issue) from each person's estimate to determine the extent to which he or she overestimated support for his or her position using the behavioral measure. Higher difference scores were indicative of people's tendency to demonstrate the false consensus bias. Signed values were used as it is necessary to know if a particular individual demonstrates the effect to a greater or lesser degree. Positive scores indicate people who are overestimating support, while negative scores suggest that students were underestimating actual consensus. This final modified version of the FCE score was employed in all remaining analyses.

### Factor Analysis of Social Issues

To assess multidimensionality underlying the social issues employed in this research, a principal components factor analysis using varimax rotation was conducted. The factor analysis failed to converge after 24 iterations, so the unrotated factors were analyzed. While factors emerged, they were difficult to interpret. Furthermore, similar patterns failed to emerge when the predictor variables (i.e., attitudes, certainty, and degree of FCE measure) were factor analyzed. When reliability coefficients were calculated based on the scales produced by the original factor analysis on the dependent variable, the alpha coefficients were unsatisfactory; in fact, many of them were negative. These results suggest that there is not a common dimension underlying these issues. Consequently, the analyses needed to be conducted separately for individual issues.

*Regression analyses.* Meaningful factors did not emerge linking the 20 social issues used in this research, so to avoid an unwieldy presentation of the data, correlation and regression statistics will only be presented for the issue of "legalization of drugs." For all analyses, the behavioral likelihood score served as the dependent measure, while participants' attitudes, degree of false consensus for each issue, attitudinal certainty, and scores on the three personality variables (self-monitoring, social self-esteem, and social desirability) were used as predictor variables.

For the regression predicting behavior related to the "legalization of drugs" issue, Table 3 displays the correlations, means, and standard deviations for all of the variables (i.e., behavioral likelihood scores, attitudes, degree of false consensus, certainty, self-monitoring, self-esteem, and social desirability). Table 4 displays the results of the regression analysis. The *R* value was significantly different from 0

TABLE 3  
Correlations, Means, and Standard Deviations for "Legalization of Drugs"

	Attitude	FCE	Certainty	SD	SM	SE	Mean	SD
Behavior	.55**	.30**	.17*	-.17*	.12	.06	4.17	2.56
Attitude		.15*	.26	-.00	.10	.18*	-.20	3.43
FCE			.28**	-.12	.02	.04	15.49	17.92
Certainty				-.12	.14*	.25**	3.37	1.03
SD					-.40**	.15*	13.46	5.14
SM						.24*	12.09	4.06
SE							2.51	.51

Note. FCE = degree of false consensus; SD = social desirability; SM = self-monitoring; SE = social self-esteem. The attitude scale was assessed using a Likert scale ranging from -5 ("strongly disagree") to +5 ("strongly agree"). Certainty scores were recorded on a scale from 1 ("very uncertain") to 5 ("very certain"). Self-monitoring scores are on a scale of 0 to 25 while social desirability is on a scale of 0 to 33. Self-esteem is presented as the mean score on a scale from 0 "not at all characteristics of me" to 4 "very characteristic of me"; higher scores indicate higher self-confidence.

\* $p < .05$ . \*\* $p < .01$ .

$N=203$ .

**TABLE 4**  
**Multiple Regression Analysis Predicting Likelihood to "Smoke Marijuana"**  
**from Attitude, Degree of False Consensus (FCE), Certainty, Social Desirability (SD),**  
**Self-Monitoring (SM), and Self-Esteem (SE)**

Predictor variables	B	Beta	sr <sup>2</sup>	t
Attitude	.40	.54	.26	9.01**
FCE	.03	.23	.05	3.80**
Certainty	-.11	-.04	.00	-.72
SD	-.06	-.13	.01	-1.98*
SM	.02	.03	.00	.46
SE	.17	-.03	.00	-.53
Constant	5.15			5.19**

R<sup>2</sup> = .38  
R<sup>2</sup> (adjusted) = .36  
R = .62\*\*

Note. Low self-monitor scores are reported in parentheses.

\* $p < .05$ . \*\* $p < .01$ .

for the "legalization and government regulation of drugs" issue,  $F(6,192) = 19.63$ ,  $p < .001$ . Additionally, three of the predictor variables were found to be significantly related to people's likelihood to smoke marijuana. Attitude toward the legalization of drugs ( $sr^2 = .26$ ), degree of false consensus ( $sr^2 = .05$ ), and scores on social desirability ( $sr^2 = .01$ ) were all found to be significant predictors of behavioral intentions. All six predictor variables combined explained 38% (36% adjusted) of the variability in participants' reported likelihood of smoking marijuana (see Table 4).

*Summary of regression analyses.* Based on the analyses of all twenty issues, attitudes were a significant predictor of behavioral intentions in all 20 of the regression analyses, while false consensus scores were a significant predictor for 13 issues. Therefore, the degree to which one displays the FCE is generally predictive of that individual's behavioral intentions. For issues on which people did not display the FCE (see Table 2), degree of FCE was not a significant predictor. If people are not demonstrating the bias, it follows that degree of FCE would not be differentially predictive of their likelihood to engage in behaviors related to the topic. As suggested by the data presented, the remaining variables were not generally good predictors of behavioral intentions; certainty and self-monitoring scores were predictive for 3 of 20 issues, while social desirability and self-esteem scores were predictive for only 2 of 20 issues. Because of their failure to replicate across social issues, these variables cannot be considered reliable factors in people's likelihood to engage in different behavior.

*Self-monitoring.* While self-monitoring was not found to be a consistent predictor of behavioral intentions, further analyses were conducted to test the a priori

hypothesis that high self-monitors' behavioral intentions would be more influenced than low self-monitors' intentions by false consensus scores. Participants whose scores fell above 15 were classified as high self-monitors ( $N = 59$ ), while individuals whose scores fell below 10 ( $N = 52$ ) were considered low self-monitors. Based on research that suggests that low self-monitors are more consistent in their behaviors, it was hypothesized that their behaviors would be largely predicted by their attitudes. On the other hand, because of their tendency to match their behavior to the situation, high self-monitors were predicted to be influenced by various other sources, including the degree to which they display the false consensus effect

Standard multiple regression analyses were conducted in which attitudes, degree of false consensus, and certainty were entered to predict participants' behavioral likelihood scores. The remaining personality variables were eliminated from the analyses because of their lack of predictive value and a concern over the ratio of cases to predictor variables. These analyses were conducted separately for high and low self-monitors. Tables 5 and 6 present the correlations between all of the variables for the issue of drug legalization. To facilitate comparisons between high and low self-monitors, results from both regression analyses are reported in Table 7

TABLE 5  
Correlations, Means, and Standard Deviations for "Legalization of Drugs"  
for High Self-Monitors

	Attitude	FCE	Certainty	Mean	SD
Behavior	.56**	.43**	.25	4.52	2.55
Attitude		.24	.38**	.14	3.63
FCE			.20	14.69	19.37
Certainty				3.54	1.07

Note. FCE = degree of false consensus.

\* $p < .05$ . \*\* $p < .01$ .

$N = 59$ .

TABLE 6  
Correlations, Means, and Standard Deviations for "Legalization of Drugs"  
for Low Self-Monitors

	Attitude	FCE	Certainty	Mean	SD	N
Behavior	.54**	-.09	-.03	3.86	2.56	52
Attitude		-.04	.14	-.86	3.45	50
FCE			.20	14.88	16.66	52
Certainty				3.24	.96	52

Note. FCE = degree of false consensus

\* $p < .05$ . \*\* $p < .01$ .

TABLE 7  
Multiple Regression Analyses Predicting Likelihood "To Smoke Marijuana"  
from Attitude, Degree of False Consensus (FCE), and Certainty  
For High and Low Self-Monitors

Predictor variables	B	Beta	sr <sup>2</sup>	t
Attitude	.34(.41)	.49(.56)	.19(.30)	4.30**(4.52**)
FCE	.04(-.01)	.31(-.06)	.09(.00)	2.94**(-.46)
Certainty	.02(-.25)	.01(-.10)	.00(.01)	.08 (-.76)
Constant	3.80(5.12)			3.90**(4.61**)

R<sup>2</sup> = .41(.32)  
R<sup>2</sup> (adjusted) = .38(.27)  
R = .64\*\*(.56\*\*)

Note. Low self-monitor scores are reported in parentheses.  
\* $p < .05$ . \*\* $p < .01$ .

(the low self-monitors scores are in parentheses). For both high and low self-monitors, the  $R$  value was significantly different from 0 for "legalization and government regulation of drugs,"  $F(3,55) = 12.93$ ,  $p < .001$  and  $F(3,46) = 7.17$ ,  $p < .001$ , respectively. For high self-monitors, attitude toward the legalization of drugs ( $sr^2 = .19$ ) and degree of false consensus ( $sr^2 = .09$ ) were found to be significantly related to people's likelihood to smoke marijuana, while attitudes ( $sr^2 = .30$ ) were the only significant predictor for low self-monitors. All three predictors variables explained 41% (38% adjusted) of the variability in the reported willingness to smoke marijuana for high self-monitors and 31% (27% adjusted) for low self-monitors (see Table 7). The hypothesis regarding self-monitoring and the FCE was supported by these findings.

The trends that are present for this issue are generally consistent across issues. Notice that attitude and behavior are positively related for both high and low self-monitors and that the size of this correlation (.56 for high self-monitors and .54 for low self-monitors) is similar for both groups. This trend existed across all issues. The tendency for the FCE variable to independently predict behavioral intentions for high self-monitors but not for low self-monitors also generalized across issues. In each case, the semisquared partial correlation pertaining to the degree to which FCE independently predicted behavioral intentions was greater for high self-monitors than for low self-monitors. Furthermore, in most cases, FCE was not a significant predictor at all for low self-monitors.

## DISCUSSION

In sum, as predicted by the theory of reasoned action, attitudes were consistently the best predictor of people's stated intentions to engage in controversial behav-

iors. However, the degree to which people displayed the FCE also independently predicted people's behavioral intentions. While the individual difference variables were not generally related to behavioral intentions, self-monitoring was found to be relevant. Specifically, high self-monitors were more likely to be influenced by their perceptions of their peers' behavior as measured by the FCE. This finding makes sense in light of high self-monitors' need to adapt their behavior to the situation.

These data indicate that degree of false consensus was a significant predictor for many important social issues; thus, people are basing their behavioral intentions on their largely inaccurate perceptions of their peers' beliefs. The effect was particularly strong for issues such as "legalization and government regulation of drugs" and "lowering the drinking age to 18"; topics which are particularly important for college students. If students incorrectly believe that a large percentage of their peers are buying beer for underage friends or smoking marijuana and these perceptions are guiding their own behavioral intentions related to these activities, problems could (and do) ensue. Previous research has shown that people who overestimate the percentage of individuals who smoke are more likely to smoke themselves or begin smoking (Botvin et al., 1992; Chassin, Presson, Sherman, Corty, & Olshavsky, 1983). Other research has determined that behavioral intentions are reasonably good predictors of actual behaviors (Fishbein & Ajzen, 1975; van den Putte, 1991). Therefore, it follows that people's erroneous perceptions may be influencing their decision to engage in harmful behavior.

## STUDY 2

Study 1 demonstrated that false consensus beliefs predict behavioral intentions related to current social issues. Previous research has already shown that norm misperceptions contribute to teenage smoking (Botvin et al. (1992), excessive college drinking (Prentice & Miller, 1993), and dangerous sexual practices (Chan & Fishbein, 1993; Morrison, Gillmore, & Baker, 1995; Tashakkori & Thompson, 1992; White, Terry, & Hogg, 1994). Consequently, it seems important to try to correct these misperceptions. Many researchers have suggested that intervention programs would be more successful if they focused on changing normative misperceptions (Kelly et al., 1991, 1992; Sherman et al., 1983). Therefore, Study 2 attempted to reduce the false consensus bias related to social norms. This reduction should correct some misperceptions about the prevalence of shared support for certain positions.

Krueger and Clement (1994) conducted a recent set of experiments and concluded that the false consensus effect is an "ineradicable bias." In a series of studies designed to correct the bias, the researchers determined that people are generally unable to avoid making this egocentric error. In the first experiment, they provided people with two different types of information. In one condition, they described the false consensus bias before people made the peer estimates. Other participants received feedback information regarding the actual consensus for each item after they



made their judgments. Members of the final group read both types of information. Using several measures of false consensus, these researchers concluded that the effect is robust and immune to education or feedback about the bias.

In a second study, participants were given information about a hypothetical subject who either agreed or disagreed with their positions based on random assignment. They were also asked to estimate the percentage of consensus that this hypothetical person would give. Finally, they gave another estimate of consensus based on their own position. The researchers expected that possessing information about another person's position would eliminate the basic projection effect. However, this information had little impact on people's estimates (i.e., they did not incorporate this additional information into their judgments). In sum, the researchers stated conclusively that the false consensus bias was persistent even in the face of contradictory or illustrative statistical information.

While Krueger and Clement (1994) stated that the effect could not be eliminated, other researchers have found evidence that the effect can be modified by altering several features of the typical design to assess false consensus. In a meta-analysis of 115 tests of the false consensus effect studies, Mullen et al. (1985) found that several variables influenced this robust effect. While the nature of the comparison population did not affect the findings, the order of measurement and the number of estimates were found to influence the effect. Specifically, the effect size was larger when there were fewer items and when estimates for consensus were made before endorsements. Furthermore, the number of available options has been shown to reduce the false consensus effect (Marks & Duval, 1991). By presenting participants with different numbers of response alternatives, the authors were able to determine that false consensus is influenced by the availability heuristic (i.e., the tendency to base judgments on information that easily accessible in memory (Tversky & Kahneman, 1973). Making other positions salient to participants reduced the tendency to assume that most people shared their beliefs.

The degree to which the availability heuristic contributes to adolescent smoking was tested by Sherman et al. (1983). They found that adolescents who overestimated the prevalence of smoking among their peers were significantly more likely to smoke themselves. Additionally, the number of the participants' friends who smoked explained a substantial amount of the variance in peer estimates, suggesting that high school students were basing their judgments on a limited sample (i.e., their friends). Deutsch (1987) added additional support for this finding by stating that the FCE was strongest when people's judgments were similar to their friends'. Overall, these findings provide additional support for the idea that selective exposure which limits the information available to people ultimately leads to the false consensus bias.

Based on this research, it was hypothesized that the FCE would be reduced by exposing participants to information supporting both sides of controversial social issues. Exposing participants to information pertaining to all sides of the debate should correct for the availability heuristic by making both positions salient to the participants. In other words, it should reduce people's tendency to simply recall their friends' beliefs; when asked about their peers, they will have other informa-

tion on which to base their estimates. In their review article, Marks and Miller (1987) discussed the role of focus of attention and argued that "when one's focus shifts between two or more positions, estimates of consensus for any one may be diluted; that is, estimates may be more or less evenly distributed among the alternatives" (p. 73). Consequently, this experiment examined the potential influence of the availability heuristic by presenting students with information regarding two current social issues: the legalization and government regulation of drugs and animal testing for medical purposes. Additionally, the medium of presentation was varied to determine if written or visual information would be more effective in reducing the bias.

It was predicted that the effect would be most dramatically reduced in the video condition because this type of presentation should control for the influence of both cognitive and motivational explanations. Cognitive theories for FCE suggest that people display this bias because they lack the relevant information to make informed judgments. Krueger and Clement's (1994) article demonstrates that correcting this knowledge did not eliminate the FCE. Motivational explanations posit that people are unconsciously driven to find support for their beliefs (even if that process entails creating "false" consensus). The use of the availability heuristic should be eliminated in both the written and video conditions (because both sides of the issue will be made available in the presentation); however, the motivational need to believe that other relevant people share the same perspective will only be addressed by the video condition. Watching peers discuss the issues and argue for both sides should help reduce the tendency to overestimate support for the students' personal positions caused by a motivational drive to be similar to one's peers. The video condition also clearly addresses the availability heuristic by manipulating the relative ease with which participants can recall other individuals who do and do not share their beliefs (i.e., there were two people in the video who hold similar viewpoints and two who held contrasting opinions).

Last, the correlation between participants' attitudes and consensus estimates should be reduced if the technique is effective. If additional information is made 'available' to the students, their estimates should be based in part on this information, rather than entirely on their own attitudes. However, if this information is unavailable to students, they will rely on their attitudes and endorsements to make "other" estimates.

## METHOD

### *Participants*

Two hundred eighty students (101 males and 177 females) participated in this study in partial fulfillment of a course requirement. The participants ranged in age from 17 to 30 with an average age of 18.57 ( $SD = 1.21$ ). The majority of students were freshmen (82%) who were Caucasian (97%) and Catholic (57%). Additionally, 68% defined themselves as liberal, while 24% considered themselves conservative. Sixty four percent of the sample believed that they were "similar to their

peers" while 78% of the students believed that "most college students try to be similar to their peers."

Numerous participants' data were eliminated to reduce the amount of error in the experiment. Six participants mistakenly participated in the experiment twice. Ten participants' data were eliminated from the animal-testing analyses because answers represented by these data were illogical. Participants' data were excluded on this basis if the participants' endorsements and attitudinal positions were negatively correlated (e.g., they reported being in favor of animal testing while concurrently reporting that they were strongly against it). Additionally, data were eliminated if there was no relation between participants' endorsements and their estimates (e.g., they reported being against animal testing, but believed that 100% of their peers were in favor of this attitude). Data from eleven participants were removed from the analyses regarding the legalization of drugs for the same reasons.

### **Materials**

This experiment was designed in part to eliminate the use of the availability heuristic. Therefore, packets of information were created to inform people about viewpoints for both positions. For the two 'written' experimental conditions, material was collected from books, journal articles, and reference sources (e.g., brochures and pamphlets) which supported both sides of the selected issues (animal testing for medical purposes and legalization of drugs). These issues were selected based on the size and consistency of the FCE in pilot studies. Two different combinations were created to control for the effects of order. Half of the folders presented the supporting information followed by the opposing information for each issue, while the remaining folders reversed the order.

A third experimental condition ('video') was also utilized. In this condition, participants watched a video of college students engaging in debates surrounding the selected issues. People volunteered to participate in this debate on the basis of their personal attitudes in order to ensure controversy and a full coverage of each issue. In this condition, participants watched the video clip rather than read relevant material. This medium of presentation was hypothesized to be more meaningful and therefore convincing to other college students. A control condition was also utilized. In this condition, participants did not read any information, but, rather, they filled out identical questionnaires. The inclusion of this control group was necessary to determine if the manipulations reduce the false consensus bias in experimental participants relative to participants who were given no information.

Knowledge quizzes for each condition, except the control, were also administered; they were designed to assess participants' comprehension of the material. This test served three important functions: to ensure that participants read the material carefully, to act as a manipulation check to eliminate participants who failed to process the information, and to reinforce the dual nature of these issues. For example, one item on the quiz asked participants to briefly summarize one benefit and one problem with

animal testing. For the experimental conditions, two different orders (Versions A and B) were again created to control for the effects of presentation.

### *Design*

Participants in this experiment were approximately evenly divided between five conditions: written-animal ( $N = 57$ ), written-drugs ( $N = 60$ ), control ( $N = 56$ ), video-animal ( $N = 48$ ), and video-drugs ( $N = 59$ ). Furthermore, the order of presentation of the material in the written conditions was fairly evenly split; pro material followed by anti ( $N = 57$ ), anti material followed by pro ( $N = 60$ ). Last, the order of the knowledge quiz was varied such that 107 participants completed version A, while 117 participants received version B.

### *Procedure*

Participants were randomly assigned to one of the five conditions. For each condition, except the control group, participants were informed that they would take a brief quiz tapping their understanding of this material. They were then asked to read the packet of information or view the videotape. Participants were given fifteen minutes to read/view the information. After being presented with the material, they completed several personality measures, including social desirability, social self-esteem, and self-monitoring, which served as filler items. Upon completion of these scales, all participants were given the open-ended test. When all participants completed the quiz, they filled out the brief false consensus measure described in Study 1 (consisting only of the self endorsements and peer estimates), an attitudinal questionnaire, and demographic information. Participants in the control group were only given the questionnaire with no additional information. Last, participants were debriefed and thanked for their participation.

## RESULTS

It was predicted that the false consensus effect would be reduced in the intervention conditions. All analyses were conducted separately for the two issues ("legalization and government regulation of drugs" and "animal testing for medical purposes"). First, to assess order effects, a 2 (endorsement: for or against) by 4 (condition: written - Order A; written - Order B; control, and video) analysis of variance was conducted on each issue. The results from this analysis showed that there were no significant differences between conditions on degree of FCE,  $F(3, 140) = 1.64$ , *ns* for animal testing and  $F(3, 173) = 1.03$ , *ns* for drug legalization. However, both issues showed a significant effect for endorsement indicating that false consensus effect was still occurring,  $F(1, 140) = 40.01$ ,  $p < .001$  for animal testing and  $F(1, 173) = 26.32$ ,  $p < .001$  for drug legalization (see Table 8). Because the experimental groups were not significantly different and therefore order was not a significant factor, these groups were collapsed so that all comparisons will be made between the written, video, and control groups.

To assess the false consensus effect, *t*-tests were run for each condition to determine the extent of the false consensus bias. A Bonferroni correction to control for the number of analyses reduced the appropriate significance level to .008. For both animal testing and the legalization of drugs, the false consensus effect was smaller in the intervention conditions. In fact, it was completely eliminated in the video condition for the "animal testing" issue. Table 8 presents the results of the *t*-tests.

To determine the statistical effectiveness of the manipulation, effect sizes (*d*) were calculated based on each pairwise comparison (Cohen, 1988). As expected based on the hypothesis, the effect sizes reflected the effectiveness of the manipulation across groups. The differences between the groups (people who were for or against each issue) on degree of FCE were largest in the control condition and smallest in the video condition. For the animal testing condition, the effect size for the control group was 1.94, the written condition was 1.01 and the video group was .57. Similarly, the scores were 1.12, .67, and .57 respectively for the legalization of drugs issue.

The final analysis examined the correlation between participants' attitudes which were measured on an 11 point Likert scale ranging from -5 (strongly disagree) to +5 (strongly agree) and their consensus estimates. It was predicted that people's attitudes should be highly correlated with their consensus estimates if they are demonstrating FCE; however, if their estimates are based on information distinct from their personal attitudes, these relationships should be weaker. Subsequently, if the manipula-

**TABLE 8**  
False Consensus Tests for Control, Written, and Video Conditions for  
"Animal Testing for Medical Purposes" and "Legalization of Drugs"

Condition	Animal Testing						
	For			Against			t
	Mean	SD	N	Mean	SD	N	
Control	65.30	(18.02)	[33]	28.33	(20.04)	[12]	5.91**
Written	65.14	(20.22)	[37]	44.09	(17.44)	[11]	3.12*
Video	56.05	(16.01)	[43]	46.00	(25.10)	[5]	1.25
	Legalization of Drugs						
	For			Against			t
	Mean	SD	N	Mean	SD	N	
Control	79.11	(13.81)	[28]	60.28	(18.47)	[28]	4.32**
Written	70.80	(20.13)	[30]	56.90	(20.59)	[29]	2.62*
Video	72.64	(13.31)	[34]	62.60	(21.75)	[25]	2.04*

\**p* < .05. \*\**p* < .008.

tions are reducing the influence of the availability heuristic by giving people additional relevant information about the social issues, their estimates might be revised by this new information. This prediction was supported by an observation of the correlations between attitudes and estimates (see Table 9). The correlations between personal attitudes and consensus estimates were strongest in the control condition (for participants who were not exposed to both sides of the issues) and weakest in the video condition. This correlational trend was found for both animal testing and the legalization of drugs.

## DISCUSSION

It was hypothesized that the false consensus effect would be reduced by using an intervention technique designed to eliminate the availability heuristic regarding information supporting participants' personal beliefs. This prediction was supported. In fact, the effect was eliminated using the video condition for the "animal testing" issue. While the sample size for the conditions was considerably smaller than in previous studies, it was proportional to the control condition to which the groups were compared; therefore, the results lend strong support to the hypothesis that the FCE can be reduced by eliminating the availability heuristic. Examination of the means suggested that the manipulation works by inducing both groups (people for and against each issue) to converge toward the average estimate as suggested by Marks and Miller (1987). Analysis of Cohen's *d* as a measure of the effect size provides further evidence that the manipulation was effective. Effect size analyses are independent of sample size; thus the results showed that the group differences were becoming smaller, as their estimates were converging regardless of the number of participants in the groups. For both topics, the effect size for the control

TABLE 9  
Correlations Between Attitude and Estimates for each Condition for  
"Animal Testing for Medical Purposes" and "Legalization of Drugs"

Condition	Issue			
	Animal testing		Legalization of drugs	
	r	N	r	N
Control	.67**	45	.40**	56
Written	.50**	48	.28*	58
Video	.31*	48	.23	59

\* $p < .05$ . \*\* $p < .01$ .

<sup>1</sup>In a pilot study assessing wording and order effects (c.f., Mullen, Driscoll, & Smith, 1989), participants ( $N = 145$ ) clearly and significantly demonstrated the FCE for 14 of 17 important social issues. To test for order and wording effects,  $17 \times 2$  (order)  $\times 2$  (wording)  $\times 2$  (position) between groups ANOVAs were conducted with the consensus estimates on each issue as the dependent measure. FCE's were unaffected by the manipulation of order and wording. Thus, for the studies presented in this paper, all participants were first asked to make self endorsements prior to estimating consensus. Further, all questions were worded such that "yes" responses indicated support for the position (e.g., Are you *in favor* of abortion?).

groups was very large, while the video conditions had medium effect sizes (as established by Cohen's (1988) effect size conventions).

Furthermore, these analyses provided evidence for the hypothesis that the video condition would be the most effective form of presentation. While it was not possible to determine if the increased effectiveness were attributable to changes in participants' motivational states, it might be a testable hypothesis for the future. If the video medium was most effective because it showed peers discussing the topics, perhaps a transcript of the debate emphasizing the nature of the participants would be equally effective. By designing a study in which two additional conditions were added, a written condition based on the transcript of a peer debate and a video condition presenting authority figures describing the various viewpoints, it might be possible to experimentally partial out the effects of medium of presentation and the effects of the reference group. This type of study would also enable researchers to determine if the false consensus effect were more affected by cognitive or motivational biases.

Overall, this experiment provided evidence and hope that intervention strategies can be effectively directed at students' misperceptions about social norms. By reducing the false consensus effect, participants are less likely to base their estimates of peers' beliefs on their own attitudes; rather they are using other available information to make this decision. Exposing college students to information that revises the normative influence might help eliminate problem behaviors on campus.

## GENERAL DISCUSSION

Overall, these studies demonstrated that people make systematic errors in identifying social norms concerning social issues. Evidence suggests that people consistently exhibit the false consensus bias (Mullen et al., 1985; Ross, Greene, & House, 1977) in which they perceive that their positions are relatively more common. Study 1 demonstrated that this effect was also evident for attitudes regarding social issues. This finding might be due in part to people's lack of awareness about these topics or to selective exposure to a restricted homogenous sample. While various viewpoints were represented on all of the issues (i.e., there were people who were pro-choice and pro-life in the study), individuals who hold different beliefs may not be affiliating on campus as people tend to be friends with people who hold similar attitudes. Another explanation might be that people simply have a greater understanding of their personal viewpoints than of other viewpoints. Because attitudes are predominately internal traits, which may not be manifested in outward behavior, it is easy to see how people might have difficulty estimating the opinions of their peers. In fact, in Study 1, people were more likely to commit the FCE for attitudinal rather than behavioral items. Many of the false consensus studies have examined external characteristics, such as physical traits (e.g., eye color) or behavior (e.g., Ross et al., 1977; Marks & Miller, 1987). In these cases, when either physical or social reality is relatively clear, individuals have more information regarding others' beliefs and, subsequently, they may be less prone toward social-

perceptual errors. However, when inferring others' less-objective attitudes, people's judgments may be based more on their own (more salient) beliefs.

Study 1 also examined if these biases are significantly predictive of people's behavioral intentions relevant to these beliefs. Using Fishbein and Ajzen's (1975) theory of reasoned action as a model, it was predicted that the degree to which people demonstrate false consensus would influence their behavioral intentions on each issue. This measure controlled for participants' personal positions on each item by asking people to rate their attitudes for each issue. It was demonstrated that the degree of FCE did account for additional variance in explaining behavioral intentions. Because people's perceptions of social norms do seem to influence their self-reported behavioral intentions (and presumably actual behavior related to each issue), it is important to correct these inaccurate beliefs. Therefore, Study 2 was designed to reduce the false consensus effect.

While a substantial number of researchers have suggested that selective exposure resulting in an availability bias leads to a false consensus bias, few studies to date have attempted to reduce false consensus by changing the limited information as well as the motivational demands that lead to FCE. The second study in this paper addressed these concerns. It was proposed that exposing participants to both sides of the issue would make the alternative position salient, thereby reducing false consensus for both the written and video groups. However, it was argued that motivational explanations might better explain the discrepancies, in which case the manipulation would be less effective in the written condition, which presented only statistical information from experts in the field. The findings suggested that both methods effectively reduced the bias. However, the video presentation had a greater impact, which implies that both cognitive and motivational biases seem to play a role in false consensus. Future research will need to be conducted to more definitively understand the underlying causes of the FCE.

### IMPLICATIONS

This type of research has important implications. Intervention programs aimed at correcting social problems should include a technique used to reduce misperceptions. Previous research has found that correcting misperceptions can lead to changes in behavior (see Kelly et al., 1991, 1992; Trafimow, 1994). If people can be made aware of the false consensus bias, it might cause them to rethink their opinions and more carefully consider the sources of their behavior.

Norman and Tedeschi (1989) argued that for intervention techniques to be successful, they must focus on normative thinking as well as on individual attitudes. These researchers designed an intervention plan to combat teen smoking, which included a medical component that addressed the negative health effects of cigarettes and a social identity component that emphasized the negative image associated with smokers. While their intervention was not successful, the research did suggest that the normative component is equally important as the cognitive component in trying to change adolescents' perceptions of smoking; simply knowing "the



facts" is not sufficient to deter adolescents from adopting a habit that they perceive will make them more socially acceptable.

This advice is particularly relevant given the differential impact of various groups on establishing normative behaviors. Because of the powerful impact of the media, commercials directed at adolescents can leave very lasting impressions, especially if they are portraying behaviors as desirable and leading to increased acceptance. Advertisements for beer and cigarettes aimed at teenagers are especially dangerous because they are capitalizing on the peer model; they repeatedly show young, attractive, healthy individuals engaging in fun activities. On the other hand, public service commercials rarely use this approach; instead they rely heavily on scientific and medical evidence to make their point. If they could effectively change the image associated with the behaviors using relevant peer groups, they would have a greater impact on teenagers. Recent appeals do seem to be addressing this concern. An anti-smoking commercial shows a young woman whose life has been ruined by cigarettes; she has emphysema, had a lung removed, and must take medicine which has caused physical deformities. While the facts regarding detrimental effects of smoking alone would probably not alter teens' behavior, the young woman in this commercial mentions that she began smoking to look older and concludes that "it worked." As she is making this statement, the commercial shows a picture of a young attractive girl who looks nothing like the woman speaking; presumably, this photograph is of her before she became sick. Hopefully, this commercial will decrease the image-promoting appeal of cigarettes. Similarly, announcements which use popular television stars might serve a similar purpose by creating a desirable social image associated with safer behaviors (e.g., abstinence).

## CONCLUSION

The social influence literature provides compelling evidence that people do in fact base their behavior and attitudes on social norms (e.g., Asch, 1955; Festinger, 1954; Newcomb, 1943; Sherif, 1936). However, consistent with previous research (e.g., Ross et al., 1977), the current studies found that people make systematic biases in their estimation of normative beliefs, namely they overestimate support for their personal position (i.e., demonstrate the FCE). Finally, based on the present work, these misperceptions do influence people's behavioral intentions. Consistent with Fishbein and Ajzen's (1975) theory of reasoned action, the findings suggest that the degree to which people overestimate support for their position relative to people who hold an opposing view does impact their likelihood to engage in certain acts. Thus, people are not reporting that they will behave solely according to their attitudes, but rather their misperceptions are also shaping their intended actions. Consequently, people's interpretations of social norms clearly bias their responses. Therefore, it is especially important to develop techniques to correct this bias, an accomplishment that was successfully demonstrated by the manipulation utilized in the second study. Understanding the sources of misconstrued social norms in addition to methods for reducing such errors in social perception should, ultimately, have tremendous social value.

## NOTES

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1. In a pilot study assessing wording and order effects (c.f., Mullen, Driscoll, & Smith, 1989), participants ( $N = 145$ ) clearly and significantly demonstrated the FCE for 14 of 17 important social issues. To test for order and wording effects,  $17 \times 2$  (order)  $\times 2$  (wording)  $\times 2$  (position) between groups ANOVAs were conducted with the consensus estimates on each issue as the dependent measure. FCE's were unaffected by the manipulation of order and wording. Thus, for the studies presented in this paper, all participants were first asked to make self endorsements prior to estimating consensus. Further, all questions were worded such that "yes" responses indicated support for the position (e.g., Are you in favor of abortion?).

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