

Self-Censorship of Political Opinion on College Campuses: Testing an Intervention to Change Campus Norms

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In this report, we describe an intervention that attempted to decrease self-censoring and increase political opinion expression at a private, primarily White Southern university. Drawing on group norms theory, we hypothesized that altering the perception of campus social norms so that students perceive the campus climate as more accepting of expressing diverse political opinion would reduce self-censorship and increase students' political opinion expression. We report data from 367 college students randomly assigned to one of three conditions. Firstly, in the institution-specific condition, students were presented with accurate statistical evidence of political opinion diversity on their own campus. Secondly, in the institution-general condition, students were presented with the same actual evidence of political opinion diversity, but presented as representing "college students" more generally. Finally, in the control condition, students were presented with fictitious statistical evidence of college student opinions on a non-political topic. We hypothesized that students in the intervention conditions would perceive campus norms as more accepting of expressing diverse political opinions, would be less willing to self-censor, and more willing to publicly express political opinions. This hypothesis was not supported; no differences were found between conditions regarding the dependent measures. In the report, we discuss important correlational patterns that emerged and suggest future directions for research applying a group norms theory approach to impact self-censorship and political opinion expression by altering campus norms.

Universities have historically promoted an open exchange of ideas in education and research. Discussing diverse viewpoints can improve learning outcomes and decision-making, and lead to scientific advances (Duarte et al., 2015; Friedman et al., 2016; Gurin et al., 2002; Maznevski, 1994; Nielsen et al., 2018; Pike et al., 2007). However, in the 21st century United States, some evidence suggests that college students are engaging in self-censorship on-campus and are reluctant to express their political opinions (e.g., Jones, 2018; Stikma, 2020). The present research tests the efficacy of an intervention designed to reduce self-censorship and increase political opinion expression at a mid-sized private university.

We adopted a social norms approach (e.g., Sherif, 1936; Sherif & Sherif, 1953; Crandall et al., 2002) to understand the prevalence of self-censorship on college campuses. Social norms refer to an individual's subjective perception of the appropriate attitudes, values, and

behaviors for members of a social group (Sherif & Sherif, 1969). We contend that fears of violating social norms lead to self-censorship on college campuses. We tested an intervention designed to reduce self-censorship by altering perceptions of campus norms such that college students are perceived as more accepting of expressing diverse political opinions. We hypothesized that the intervention would change perceptions of local campus norms, decrease self-censorship, and increase political opinion expression.

Self-Censorship and Group Norms on College Campuses

Self-censorship occurs when people withhold their opinions around others they perceive to disagree with (Hayes et al., 2005). Some evidence suggests that self-censorship may be common on college campuses; in one nationally representative survey, 58.5% of college students stated that they were reluctant to give their views on at least one of five controversial topics, with politics eliciting the most reluctance (Stikma, 2020). Democrats, Republicans, and independents all expressed reluctance to share their political opinions, although reluctance was strongest among Republicans. Self-censorship may prevent students from being exposed to political diversity among their peers, resulting

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in a negative impact on learning outcomes and intellectual development (e.g., Duarte et al., 2015; Williams, 2002).

We apply the lens of group norms theory (GNT) to understand the prevalence of self-censorship among college students (e.g., Sherif, 1936; Sherif & Sherif, 1953, Crandall et al., 2002). According to GNT, when people value their membership in a social group, they attempt to adopt normatively appropriate attitudes, values, and behaviors of that group (Crandall et al., 2002; see also Terry & Hogg, 1996). People are generally concerned about expressing normatively appropriate attitudes; however, these concerns are likely heightened among college students in the present sociopolitical context. Firstly, college identities are important to students and can motivate students to conform to campus norms (Abrams et al., 1990; Blanchard et al., 1994; Crandall et al., 2002). Secondly, political sectarianism is currently strong in the US, and colleges are not isolated from this acrimonious climate (e.g., Finkel et al., 2020). People believe they will face censure from other ingroup members for expressing normatively inappropriate political opinions (Kulibert et al., 2021), fear of expressing their opinions may lead to self-censorship. For example, among college students who were reluctant to share their political views, the most common reason was fear that other students would criticize them (Stikma, 2020). A recent Gallup poll found that 61% of college students believe their campus climate prevents people from saying things they believe because others might find them offensive (Jones, 2018).

People commonly obtain information about norms from observing the behavior of other group members (Cialdini et al., 1991; Tankard & Paluck, 2016). However, if students are not publicly behaving in accord with their private beliefs, norm perception can be difficult or inaccurate (e.g., Miller & McFarland, 1987; Prentice & Miller, 1993, 1996). Self-censorship on-campus may thus become a self-perpetuating problem because it contributes to a climate of uncertainty about which political opinions are acceptable to express (e.g., Noelle-Neumann, 1974).

Social norms typically define a range of acceptable and unacceptable attitudes, values, and behaviors (Sherif & Sherif, 1953); and a given group may adopt a relatively wide or narrow range (e.g., Gelfand et al., 2006; Harrington et al., 2014; Sherif & Sherif, 1953; Sherif & Hovland, 1961). Students on a college campus could, thus, theoretically adopt norms that allow for the expression of a wide (or narrow) range of political opinions. From our extensive pilot research into student political opinions, we have knowledge of the diversity in

students' private political opinions on our campus. However, due to the difficulty in perceiving norms when self-censorship is prevalent, we propose that our students are largely ignorant of the true diversity in political opinions among their fellow students and therefore perceive that the normative environment allows for a relatively narrow range of political opinion expression.

In the current research, we sought to alter perceptions of campus social norms and create a normative climate that allows for a wider public expression of political opinions that reflects the true diversity of private political opinions that exist among students. Specifically, we sought to alter social norms by educating students about the wide range of political opinion diversity that exists among college students in general and on their campus specifically. Providing research participants with summary information about a group can be an effective method to manipulate norms (e.g., Goldstein et al., 2008; Stangor et al., 2001). Past experiments that have manipulated norms through summary information have communicated information about the group's *average* or *typical* attitude or behavior (e.g., Cialdini et al., 2006; Goldstein et al., 2008; van der Linden, 2015). In contrast, the present research attempted to manipulate norms by providing participants with information about *variability* in the group's opinions. Receiving information about the actual diversity of private political opinions on-campus should alter the perception of the normative campus climate such that students will perceive the campus environment as a place that embraces political diversity.

Overview and Hypotheses

The goal of the present research was to test the efficacy of an intervention to (1) alter the perception of campus norms such that students are perceived as more accepting of expressing diverse political opinions, (2) reduce self-censorship, and (3) increase political opinion expression among college students. We recruited students from our campus who were randomly assigned to one of three conditions. In the institution-specific condition, participants learned about the actual diversity in political opinion among students on their campus. The goal of the institution-specific condition was to alter the perception of local campus norms by providing students with information specific to their local institution. In the institution-general condition, participants received the same information about political diversity among college students, except that they were told the information originated from a general survey of college students without reference to a specific institution. The goal of the institution-general condition was

to alter the perception of local campus norms by providing students with information that is relevant to college students more generally. Finally, in the control condition, participants learned about diversity among college students on non-political, uncontroversial topics (e.g., attitudes towards healthy living). After the manipulation, participants completed measures of perceived campus norms and the self-censorship scale (Hayes et al., 2005). Finally, participants completed a behavioral measure of political opinion expression.

We predicted that, when compared to the control condition, participants in both intervention conditions would perceive campus norms as more accepting of diverse political opinions, score lower in self-censorship, and be more likely to express their political opinions. We also tested whether the institution-specific condition had a stronger effect on campus norms, self-censorship, and willingness to express political opinions than the institution-general condition, i.e., it is possible that providing more proximal information has a stronger impact on norms, self-censorship, and political opinion expression than providing more distal information. Finally, we predicted that the effects of the intervention on willingness to express political opinions would be mediated by perceptions of campus norms and self-censorship. A pre-registration of our hypotheses is available on Open Science Framework: <https://osf.io/wnhd3>

Methods

Participants

We conducted an a priori power analysis using G*Power software (Version 3.1; Faul et al., 2009) to determine sample size. We drew on literature (e.g., Richard et al., 2003) suggesting that $d = .40$ is a common effect size in social psychology research. Testing our hypotheses requires an analysis of variance (ANOVA) followed by post hoc comparisons. With power = .80, alpha = .02 (a Bonferroni correction for multiple comparisons), we determined that we needed 132 participants per condition, or 396 total participants.

We recruited 403 college undergraduates to participate in the experiment. Of those 403 individuals, 21 individuals did not consent to the use of their data. In addition, 15 individuals' data were removed because they expressed high levels of suspicion about the experiment during debriefing. There were 367 participants (73.0% women, 25.1% men, 1.9% nonbinary) in the final sample. Participants were between 18 and 29 years of age ($M = 19.2$ years, $SD = 1.35$). The majority of participants were White (66.0%), although the sample also included Asian (13.0%), Black (4.7%), Latino (6.6%),

multiracial (7.5%), and participants of more diverse racial backgrounds (2.2%). Participants included STEM (28.8%), psychology (23.6%), public health (11.7%), humanities (10.1%), social sciences (7.4%), business (6.3%), and other majors (3.0%), as well as undecided students (9.0%). From a political perspective, most participants were Democrats (61.3%), with smaller percentages of students identifying as independents (20.7%), Republicans (9.1%), or other political groups (8.8%).

All undergraduates at our institution who were 18 years of age or older were eligible to participate. We used two recruitment strategies. Our initial goal was to recruit all participants for monetary compensation (\$12) using listservs, social media posts, and flyers. Due to a slow pace of recruitment, we decided to supplement our efforts by also recruiting participants through the Psychology Department participant pool. Participants recruited via this pool participated in exchange for course credit. In the final sample, 51% of participants received monetary compensation and 49% received credit in exchange for participation. There were no differences between these two groups on any of the key study variables.

Procedure

At the time of recruitment, participants completed an online prescreening questionnaire to ensure they were at least 18 years of age and currently enrolled in college. In addition, the online questionnaire asked participants to complete the social/economic conservatism scale (SECS; Everett, 2013) and a single-item measure of political ideology. Afterwards, participants selected a timeslot for in-person testing.

Upon arrival at the laboratory, participants provided informed consent and were randomly assigned to condition. Adapted from our past research (Kulibert et al., 2021), the present researcher informed participants that they would be working on a data visualization task and that "visualizing information improves people's understanding of statistics and helps them make conclusions about data." In the institution-specific intervention condition, participants received accurate information about student opinions at their university on three political issues: immigration, health care and education, as well as defense spending. The question wording was originally drawn from the American National Election Study (2018), but information about student responses came from our past survey research with our university students on these topics. For each issue, participants were provided with a frequency table that contained the question wording, the possible range of responses, and

the number of participants at their university who selected each response (see Appendix A). The experimenter then showed participants how to create histograms using Microsoft Excel (see Appendix B) based on the information contained in the frequency table. Finally, participants received a list of fictitious quotes describing student opinions on each of the political issues, including the first name of the student who allegedly provided the quote. The quotes were written by undergraduate research assistants in the Social Perception Lab at Tulane University and were selected by the research team to represent opinion diversity. Participants were asked to select two quotes from the list that represented the diversity of student opinions on each of the issues.

In the institution-general condition, all aspects of the procedure were identical to the institution-specific condition except that participants were told that the information came from a survey of "college students" and no reference to their specific university was mentioned (see Appendix A). Finally, in the control condition, the procedure itself was largely identical to the other two conditions. That is, control participants received the same instructions and worked on a data visualization task that involves generating histograms based on frequency tables. However, the *topics* of the opinion questions were related to the importance of healthy eating and exercise, adapted from a survey by Dutta-Bergman (2004). To maintain a strict control condition, data provided in the frequency tables (i.e., the number of individuals who ostensibly indicated their agreement with each response) matched data provided in the intervention conditions (see Appendix A). As in the intervention conditions, participants received a list of fictitious student quotes related to opinions on healthy eating and exercise, including the first name of the fictitious student who allegedly wrote each quote. Participants selected two quotes that represented the diversity of student opinions on each question related to healthy eating and exercise.

After participants completed the data visualization task, they completed the dependent measures. Finally, the experimenter administered an extensive funnel-type debriefing to assess suspicion (e.g., Bargh & Chartrand, 2000).

Measures

Prescreening Measures

In addition to demographic information, during the online prescreening, participants also completed additional measures of political ideology.

Social and Economic Conservatism. The social and economic conservatism scale (Everett, 2013) lists

thirteen political issues. Participants were asked to indicate their attitudes towards socially conservative issues (e.g., abortion) and economically conservative issues (e.g., limited government) on a 100-point feeling thermometer scale from 0 (*very cold*) to 100 (*very warm*). Although it is possible to calculate separate social and economic conservatism scores, consistent with the work of others (e.g., Azevedo et al., 2019), we calculated a single conservatism score for each participant by averaging all thirteen items after reverse-coding where appropriate. Higher scores indicate more conservative attitudes. The scale had acceptable reliability ($\alpha = .86$).

Conservative Ideology. We further measured political ideology by having participants rate themselves on a nine-point Likert scale ranging from 1 (*extremely liberal*) to 9 (*extremely conservative*).

Dependent Measures

The experiment included three dependent variables to measure perceptions of campus norms, their self-censorship, and opinion-expression.

Campus Norms. This seven-item measure assessed perceptions about the extent to which students on-campus are tolerant of people with different political opinions (e.g., "Tulane is a place where students accept people who have different political opinions"). Participants indicated their agreement with each item on a seven-point Likert scale, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The items were constructed for the purposes of the present experiment based on face validity. See Appendix C for the full text of all items. The scale had acceptable reliability ($\alpha = .85$).

Self-Censorship. Self-censorship was assessed using the eight-item willingness to self-censor scale by Hayes et al. (2005). One sample item is "It is difficult for me to express my opinion if I think others won't agree with what I say." Participants responded to the items on a five-point Likert scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The scale had acceptable reliability ($\alpha = .83$).

Opinion Expression. Participants were asked to provide a quote describing their opinion on each of the three political issues examined in the study (i.e., immigration, health care and education, as well as defense spending). After writing down their quote on each issue, we asked participants for permission to display their opinions on each political issue (with their first name and last initial included) to future study participants. Possible scores on the behavioral measure of political opinion expression ranged from 0 (*permission to include none of their opinions*) to 3 (*permission to include all opinions*). We did not share any of the current

participants' opinions with other participants. The scale had acceptable reliability ($\alpha = .83$).

Attention and Manipulation Checks

After administering the dependent measures, we asked students three questions to assess the extent to which participants perceived our manipulations as we intended. First, we asked participants to recall whether they had been presented with information on student opinions on political topics or health topics. To determine whether the political topics were perceived as more controversial than health topics, participants were asked, "To what extent would you describe the topics presented as potentially controversial or divisive?" Participants responded on a seven-point Likert type scale ranging from 1 (*not at all controversial*) to 7 (*extremely controversial*). Finally, participants were asked whether participants in the opinion survey were described as college students or Tulane students.

Results

Preliminary Results

Table 1 presents the variable means and standard deviations. An inspection of the conservatism ($M = 4.15$ points) and SECS ($M = 40.84$ points) means suggests that, on average, participants were moderately liberal. Scores were somewhat lower than the midpoints for both the single-item conservatism measure (5) and the SECS (50). On the campus norm measure, the mean of 4.50 points was slightly higher than the midpoint (4).

This suggests that, on average, students were moderately accepting of opinion diversity. The average self-censorship score ($M = 3.07$ points) was almost exactly at the midpoint (3) of the scale, indicating that, on average, participants were reporting moderate levels of self-censorship. Although we do not have comparison information on the self-censorship scale from other college student samples, the present mean was slightly higher than the mean of 2.57 points observed by Hayes and colleagues (2006) in a sample of 781 adult U.S. residents. Finally, the average number of opinions participants were willing to publicly express was 1.92 out of 3 points.

Next, we examined the pattern of correlations between the variables (see Table 1). According to GNT, perceptions of one's university as a place that values political opinion diversity should be negatively correlated with self-censorship and positively correlated with opinion expression. Consistent with this, perceptions of campus norms were negatively correlated with self-censorship and positively correlated with opinion expression. That is, the more students thought their campus was a place that embraces political opinion diversity, the less they reported personally self-censoring and the more they were willing to share their opinions with others. As expected, self-censorship was negatively correlated with opinion expression. That is, the more people generally report that they self-censor, the less willing they were to share their opinions in the context of the present study.

Table 1

Descriptive Statistics and Correlations

	<i>M</i>	<i>SD</i>	Conservatism	SECS	Norms	Self-Censorship
Conservatism	4.18	2.26	1			
SECS	40.84	14.48	.35*	1		
Norms	4.50	1.02	-.04	-.07	1	
Self-Censorship	3.07	0.74	.12*	.15**	-.19***	1
Opinion Expression	1.92	1.24	-.01	-.13*	.10*	-.17**

Note. Conservatism was measured on a 1-9 scale, SECS was measured on a 0-100 scale, norms were measured on a 1-7 scale, self-censorship was measured on a 1-5 scale, and opinion expressions ranged between 0-3 points.

* $p < .05$, ** $p < .01$, *** $p < .001$.

Neither measure of political conservatism was correlated with perceptions of campus norms. However, both measures of political conservatism showed small,

but significant, positive correlations with self-censorship. The more conservative participants were, the more they reported engaging in self-censorship. This

finding is consistent with some past research suggesting that political conservatives are more likely than political liberals to report engaging in self-censorship on college campuses (Stikma, 2020). Finally, the SECS, but not the single-item measure of political conservatism, was negatively correlated with opinion expression. The higher in conservatism that participants scored on the SECS, the less willing they were to publicly share their opinions.

After examining the correlations between study variables, we examined the results of the attention and manipulation checks. The vast majority (98.6%) of participants were able to correctly recall whether they had been presented with information on student opinions regarding political topics or health topics. We conducted an ANOVA to determine whether participants in the intervention conditions thought the topics were more controversial than participants in the control condition. ANOVA was significant, $F(2, 364) = 122.66, p < .001, \eta^2 = .40$. As assumed, participants in the institution-specific intervention condition ($M = 5.17, SD = 1.21$) and the institution-general intervention condition ($M = 5.20, SD = 1.28$) thought the topics were more controversial than participants in the control condition ($M = 2.97, SD = 1.34$). Tukey-Kramer post hoc tests indicated that both intervention conditions were significantly different than the control, $ps < .001$; however, the intervention conditions were not significantly different from each other ($p = .982$).

Finally, we examined whether participants were attentive to information about the source of the sample. In the institution-specific condition, 96.7% correctly indicated that the sample source was reported to be from their university. However, in the institution-general condition, only 62.1% correctly indicated the sample source was reported to be from a general group of college students. Students who got this question wrong thought that the sample was from their own university.

In the control condition, 83.4% correctly indicated that the sample source was reported to be from a general group of college students. Our goal in creating the institution-general condition was to determine whether the effects of the institution-specific condition would extend to the institution-general condition. The large number of participants in the institution-general condition who answered the question incorrectly may limit our ability to differentiate between the institution-specific intervention and institution-general intervention. However, it should be noted that the primary goal of research was to examine the effects of receiving information about college student opinions on politics versus a control topic. The results of the manipulation checks suggest that participants correctly understood this critical information.

Primary Analysis

We conducted three separate ANOVAs to examine the impact of the manipulation on the measures of campus norms, self-censorship, and political opinion expression.

Campus Norms

A one-way ANOVA testing the effect of the intervention on campus norms was not significant, $F(2, 364) = 2.45, p = .09, \eta^2 = .01$. Participants in the institution-specific intervention condition tended to perceive campus norms as more valuing of opinion diversity than participants in the other two conditions; however, these differences were not significant (see Table 2).

Self-Censorship

A one-way ANOVA testing the effect of the intervention on self-censorship norms was not significant, $F(2, 364) = 0.47, p = .63, \eta^2 = .003$.

Opinion Expression

A one-way ANOVA testing the effect of the intervention on opinion expression was not significant, $F(2, 364) = 0.56, p = .58, \eta^2 = .003$.

Table 2
Conditional Means and Standard Deviations

	Institution-Specific ($N = 122$) M (SD)	Institution-General ($N = 124$) M (SD)	Control ($N = 121$) M (SD)
Campus Norms	4.66 (0.92)	4.38 (1.13)	4.45 (0.97)
Self-Censorship	3.08 (0.78)	3.11 (0.74)	3.02 (0.70)
Opinion Expression	1.90 (1.24)	2.01 (1.23)	1.84 (1.26)

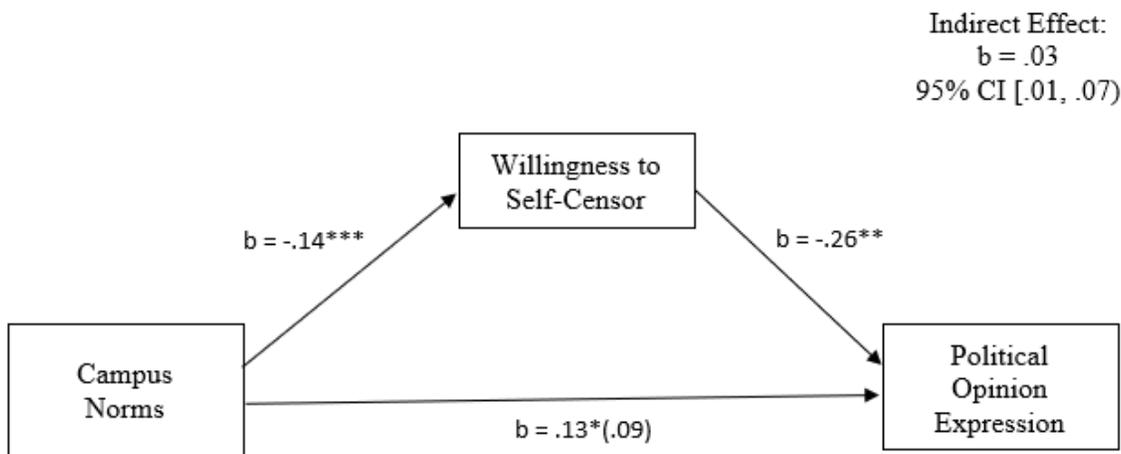
Exploratory Analyses

Because the primary hypotheses about the effect of the intervention on social norms, self-censorship, and opinion expression were not supported, we conducted follow-up analyses to better understand the results. According to our theoretical model, perceiving social norms as supporting opinion diversity should reduce willingness to self-censor, which, in turn, should increase participants' willingness to publicly express opinions in the context of the present study. Although the intervention did not have the intended impact on perceptions of social norms, we decided to test a theoretical mediation model in which campus norms have an indirect effect on expression of political opinions that operates via willingness to self-censor.

We tested this model using PROCESS Model 4 (Hayes, 2017), which uses ordinary least squares regression to create a 95% confidence interval for the indirect effect based on 10,000 bootstrapped samples as shown in Figure 1. Consistent with the correlational analyses reported earlier, campus norms had a negative relationship with willingness to self-censor ($b = -.14$, $SE = .04$, $p < .001$). In turn, willingness to self-censor had a negative relationship with opinion expression ($b = -.26$, $SE = .09$, $p = .004$). The test for an indirect effect of campus norms on opinion expression through willingness to self-censor was significant, $b = .03$, $SE = .02$, 95% CI [.01, .07]. Thus, the results were consistent with a theoretical model in which campus norms affect political opinion expression via willingness to self-censor.

Figure 1

Test of Theoretical Model



In addition to testing the theoretical model, we also tested whether our experimental intervention had an impact on political conservatives, but not on political liberals. If political conservatives are more likely to engage in self-censorship on college campuses than political liberals, then an intervention targeted at altering campus norms may affect political conservatives but not political liberals. To test this possibility, we conducted moderated regression analyses. Condition was dummy-coded with the control condition as the reference group and political conservatism (Everett, 2013) was centered (Aiken & West, 1991). We regressed campus norms on the dummy-coded condition variables, political conservatism, and their interaction terms; however, the regression model was not significant. We then repeated the same moderated regression analyses in which self-censorship and opinion expression were

the outcome variables; however, neither of these models were significant either. This suggests that political conservatism did not moderate the effect of the intervention on perceptions of campus norms.

Discussion

College students nationwide report that university campuses have become a place where they often do not feel free to express their political opinions (e.g., Stikma, 2020). Self-censorship of political opinions may have harmful downstream consequences for student learning outcomes, intellectual development, and future political engagement (e.g., Gurin et al., 2002; Duarte et al., 2015; Hayes et al., 2006). The present research tested an intervention to alter the normative campus climate so that students perceive their campus as more accepting of expressing diverse political opinions.

Unfortunately, the intervention was neither successful at altering campus norms nor at decreasing self-censorship and increasing opinion expression. Although the intervention did not have the hypothesized impact on the outcome variables, there were nonetheless several interesting findings that emerged. In the remainder of the report, we discuss both the significant findings that emerged from the present research as well as our impressions of why the intervention may have failed.

What Is the Evidence for a Climate of Self-Censorship on Our Campus?

Recent research suggests that college students are engaging in self-censorship on-campus and are reluctant to express their political opinions (e.g., Jones, 2018; Stikma, 2020). We suspect that there may be wide variability across campuses in the extent to which self-censorship occurs and who is most likely to engage in such self-censorship. Put simply, it is unlikely that the norms regarding the expression of acceptable political opinions are the same at the University of California Berkeley as at Liberty University. Our study offers a snapshot of campus norms, willingness to self-censor, and political opinion expression at just one university—a private, primarily White institution in the American South with a moderately liberal student body.

Participant responses on campus norms measures suggest that students perceive their peers as moderately accepting of opinion diversity about whether political opinion diversity was valued on their campus and neither strongly agreed nor strongly disagreed with statements. An inspection of individual item means available in Appendix B indicates that participants were more likely to agree with items indicating students at their university accepted political diversity (e.g., “Tulane is a place where students feel free to share diverse political opinions”) than items indicating that students did not accept political diversity (e.g., “Tulane is a place where students feel pressured to keep their political opinions to themselves”). Nonetheless, they did not wholeheartedly embrace or reject items indicating that students are either accepting or unaccepting of opinion diversity. One interpretation of this finding, which is consistent with our general theoretical framework, is that students are somewhat unsure about what is and is not considered acceptable to express. At the same time, it is important to note that we have not extensively validated the measure of campus norm perception and thus strong conclusions would be premature.

Similarly, participant scores on the willingness to self-censor were moderate with the average score hovering near the midpoint. In the future, it would be helpful to extensively norm the willingness to self-censor scale across different populations to aid in interpretation of scores from individual samples. But, at face value, scores in this sample seemed to neither indicate that students felt free to broadly express their opinions, but nor did they report overwhelmingly high levels of willingness to self-censor. In comparison, on the behavioral measure of opinion expression, the average student was willing to publicly share their opinions on almost two out of the three political issues. Notably, participants were asked to share their quotes in a digital venue with their first name and last initial attached—a forum that may resemble social media. Future research should investigate how willingness to share political opinions online may differ from willingness to share political opinions in the classroom. Altogether, descriptive results of perceptions of campus norms, willingness to self-censor, and political opinion expression are not consistent with a view that self-censorship has run amuck on this particular college campus; however, they are also not consistent with a view that students perceive a climate on the campus in which they are free to express their political opinions.

It is important to note that not all students felt equally free to share their political opinions. Students who were politically conservative reported higher levels of willingness to self-censor and, on at least one measure, were less willing to publicly share their political opinions. These findings are important because differential willingness to publicly share political opinions among conservatives and liberals could lead to increased political polarization. That is, if liberal students are more likely than conservatives to share their political opinions, this could in turn lead other liberal students to become relatively more polarized in their opinions (e.g., Myers & Lamm, 1976). At the same time, however, it should be noted that the magnitude of correlations between political conservatism, self-censorship, and opinion expression were generally small (Cohen, 1988).

Why Did the Intervention Fail to Influence Self-Censorship and Opinion Expression?

Ultimately, we do not know why the manipulation failed to influence self-censorship and opinion expression; however, we believe there are several things that should be noted when attempting to understand the present results. Although the intervention failed, we did find some support for our theoretical model that was

based on GNT. As hypothesized, students who perceived campus norms as supporting the expression of diverse political opinions reported less willingness to self-censor and were more willing to publicly express political opinions. Moreover, perceived campus norms had an indirect effect on expression of political opinions that operated through reduced willingness to self-censor. There are well-documented limitations to testing causal models with statistical mediation analyses, particularly when the predictor, mediator, and outcome are all measured at the same time (Fiedler et al., 2018). Specifically, alternative mediators may explain the relationship between perceptions of campus norms and expressions of political opinion. Furthermore, it is also possible that expressions of political opinion affect perceptions of campus norms (i.e., reverse mediation). Nonetheless, the data in the present research offered some support for the hypothesized model.

The most likely reason that the intervention failed to impact self-censorship and opinion expression is that the intervention was unsuccessful at changing perceptions of campus norms regarding the acceptability of sharing diverse political opinions on-campus. There are several reasons why the intervention may have failed to change perceptions of campus norms.

Firstly, although we presented participants with evidence of opinion diversity on-campus regarding three specific topics, perhaps participants remained unconvinced that there is opinion diversity on other, perhaps more controversial topics. The political topics in the present study included (1) immigration, (2) defense spending, and (3) education and healthcare spending. Perhaps, if we had chosen more timely topics (e.g., opinions of Black Lives Matter protests, gender-affirming healthcare for children) and were able to present evidence of opinion diversity on these topics, the intervention would have been more compelling.

Secondly, it is also possible that the control and intervention conditions alike convinced participants of opinion diversity. That is, even in the control condition, participants received evidence of diversity in student opinions on the importance of healthy lifestyles. Although a manipulation check showed healthy lifestyles were not perceived as controversial as political topics, it is still possible that the evidence presented in the control condition increased participants' perceptions of the acceptability of expressing diverse opinions. In other words, perhaps the control condition was not an adequate control condition. Future studies could better assess this by having students complete the campus norm measure without any type of data visualizing activity

and assessing if there are differences in the campus norm measure.

A third possibility is that creating histograms of student opinion data was not an adequate task for increasing student understanding of diversity in political opinions. If students did not have an adequate background in statistics, they may not have drawn the intended conclusions regarding political diversity. Other experimental tasks that we have successfully used in our laboratory to increase comprehension of statistical information utilized scaffolding worksheets that explicitly asked participants to draw conclusions from data (e.g., see Moss et al., 2019). Thus, it may be possible to design a better statistical lesson that would increase student comprehension of the data that they were presented.

Finally, it is also possible that a more direct and explicit manipulation of campus norms would have been successful (e.g., see Tankard & Paluck, 2016, for a discussion). Researchers in the past have successfully manipulated norms by providing summary information about the group's *average* or *typical* attitude or behavior (e.g., Cialdini et al., 2006; Goldstein et al., 2008; van der Linden, 2015). In the present experiment, we provided participants with evidence of *variability* in political opinions on-campus and hypothesized that they would infer not only that opinion diversity exists on-campus, but also that students value opinion diversity. However, another possibility is that the evidence of opinion diversity on-campus was at odds with participants' own experiences of hearing other students express their opinions. It is possible that participants inferred that, instead of valuing opinion diversity, students on campus have diverse opinions but largely keep these opinions to themselves. Future researchers should consider creating an intervention that more directly provides participants with summary information about the *value* other students place on opinion diversity (e.g., "In a recent survey of students, 98% strongly agreed that Tulane University is a place where it is OK to share diverse political opinions with other students").

Conclusion

We conducted an intervention that attempted to decrease willingness to self-censor and increase political opinion expression on a college campus by changing perceptions of campus norms. The intervention failed to have the hypothesized effect on the outcome variables. Nonetheless, the present research yielded useful insights about self-censorship and political opinion expression on college campuses. Moreover, the study provided some correlational support for the hypothesis that

campus norms may influence political opinion expression via willingness to self-censor. Overall, these results suggest that students who believe campus norms support political diversity may be less likely to engage in self-censorship and may be more willing to share their political opinions with other college students. We believe that additional research seeking to identify mechanisms to increase the perceived acceptability of expressing political opinions is warranted.

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Appendix A

Instructions. In a recent survey of [Tulane students/college students], we asked students their opinions on several important [political/health] topics. Below you will find a frequency table that contains the text of each opinion question, the response options (i.e., 1 – 7) for each question, response labels for each question, and the number of students who agreed with each response. Your task will be to create a histogram that helps to visualize the diversity in student opinions. Once you have finished reading these instructions and looked over the information in the tables, please notify the experimenter and they will explain how to use a spreadsheet to create the histograms.

Sample frequency table (institution specific condition). Some people believe that we should spend much less money on defense. Others feel that defense spending should be greatly increased. Still others have opinions which fall in between. How do you feel?

Table A1

Sample Frequency Table: Defense Spending

Response	Response Label	Tulane Students Agreeing
1	Should spend much more on defense.	17
2		30
3		98
4	Defense spending should stay at current levels.	305
5		181
6		142
7	Should spend much less on defense.	119

Sample frequency table (institution general condition). Some people believe that we should spend much less money on defense. Others feel that defense spending should be greatly increased. Still others have opinions which fall in between. How do you feel?

Table A2

Sample Frequency Table: Defense Spending

Response	Response Label	Students Agreeing
1	Should spend much more on defense.	17
2		30
3		98
4	Defense spending should stay at current levels.	305
5		181
6		142
7	Should spend much less on defense.	119

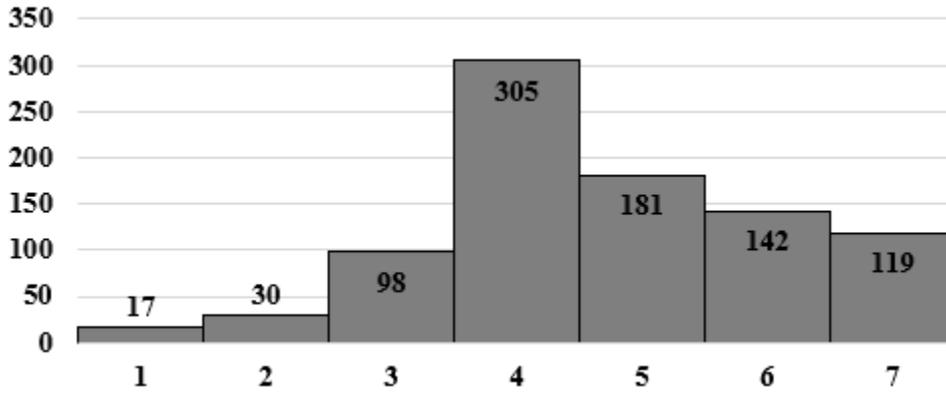
Sample frequency table (control condition). Some people believe that eating right and exercising will keep people healthy for life. Other people believe that health is largely a matter of genetics. Still others have opinions which fall in between. How do you feel?

Table A3

Sample Frequency Table: Health

Response	Response Label	Students Agreeing
1	Health is affected mostly by genetics.	17
2		30
3		98
4	Health is affected by both genetics/diet & exercise.	305
5		181
6		142
7	Health is affected mostly by diet and exercise.	119

Appendix B
Sample Histogram Generated by Participants



Appendix C

Campus Norms Measure with Item Means and Standard Deviations

Please indicate the extent to which you agree or disagree with each of the following statements:

1	2	3	4	5	6	7
Strongly Disagree			Neutral			Strongly Agree

Table C1

Campus Norms Measures with Item Means and Standard Deviations

Item	Statement	<i>M</i>	<i>SD</i>
1	Tulane is a place where students feel free to share diverse political opinions.	4.50	1.48
2	When it comes to expressing their political opinions, Tulane students embrace diversity.	4.11	1.48
3	Tulane is a place where students feel pressured to keep their political opinions to themselves.	3.05	1.37
4	Tulane is a place where it is OK to share diverse political opinions with other students.	4.53	1.36
5	Tulane students are intolerant of those who have different political opinions.	3.71	1.54
6	Tulane allows students to share diverse political opinions with others.	4.91	1.26
7	Tulane is a place where students accept people who have different political opinions.	4.17	1.36

Note. Items 3 and 5 were reverse-coded before being averaged into the scale composite.