

The Effects of Cueing and Framing on Attitudes Towards Gun Control and Gun Rights

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Abstract

I use results from a new survey of American high school students to analyze youth attitudes towards gun control and gun rights. Attitudes vary significantly across the political spectrum, but are also affected by the framing and ordering of questions. Importantly, these framing effects vary across the political spectrum. For students that most closely identify as Republicans, cueing them to think about prior school shootings increases the degree to which they think arming citizens and having armed guards in schools will improve safety and decrease potential acts of violence. For students that most closely identify as Democrats and Independents, providing them with selective information that certain states have both loose gun control laws and low rates of gun violence prompts them to be more supportive of gun rights. For Republicans, providing selective information that certain states have both loose gun control laws and high rates of gun violence prompts them to be less supportive of gun rights. Taken together, these results suggest that emotional cues are more likely to enhance a priori biases, while informational cues are more likely to moderate people's minds about these issues.

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The issue of gun and school violence has been at the forefront of many policy discussions in recent years, especially in light of the tragic events in Newtown, Connecticut in December 2012. The debate on gun control and gun rights is something that divides the U.S. Congress as well as the American public. Each year, significant time and resources are spent by lobbying groups on both sides of the debate including gun rights advocates such as the National Rifle Association and the National Association for Gun Rights, and gun control supporters such as the Brady Campaign to Prevent Gun Violence and Moms Demand Action, among others. Given the importance and relevance of the topic, it is natural to study the factors that shape attitudes towards guns, gun rights and policies towards gun control. In this paper, I gauge the opinions on these issues for youth across America using a new survey of high school students. In addition to obtaining standard demographic characteristics, I also conduct random assignment of different survey versions to test whether cues and the framing of questions have any effects on survey responses. Prior research has found evidence for framing effects in determining attitudes and public opinion on a variety of issues. This paper contributes to that literature using this random assignment to study cueing effects on attitudes towards a specific set of issues related to guns, gun rights and gun control policies.

Related Literature

A large literature in social and cognitive sciences have shown the existence of framing effects in individual decision making and attitudes. The now classic framing example of Tversky and Kahneman (1981) presents the possibility of a disease outbreak that is expected to kill a certain number of people. When individuals are asked to choose between two programs that will either save 200 of lives for sure, or save either 0 or 600 lives with probabilities $2/3$ and $1/3$, respectively, individuals overwhelmingly choose the certain option. However, when the identical problem is phrased as a choice between having a certain number of people die for sure, or have an uncertain number of people die, survey respondents overwhelmingly choose the uncertain option. They proceed to explain how individuals are often risk averse to potential gains, but risk loving with respect to potential losses. Numerous authors have done

follow-up research to this original study and Kühberger (1998) provides a meta-analysis of these replications.

There is also a significant literature that examines how framing may affect opinions about public policy (Chong and Druckman, 2007; Druckman 2001). Differential wording of potential military action can result in big differences in opinion. Mueller (1994) discusses how most citizens were in favor of using “military force” at the start of the Persian Gulf War, but a similar majority also preferred *not* to “engage in combat”. Ferree (2003) and Rohlinger (2002) find that social movement organizations have used the power of framing to influence the media attention and the public discourse surrounding the debate on abortion rights. Several studies show that beliefs about environmental policy can be shaped by cueing and salience. Cornelissen et al. (2008) find that cueing people to think about the behaviors that they participate in as being environmentally friendly increases the likelihood that they deem themselves as environmentally conscious and also increases the likelihood that they engage in pro-environmental behaviors in the future. Owen et al. (2012) find that those that have recently experienced extreme weather such as heat waves or droughts are more likely to support laws to protect the environment in part because these events shape their perceptions about the importance of global warming.

My work is closely related to that of Haider-Markel and Joslyn (2001), who use a sample of Kansas residents to analyze framing effects on opinions on gun policy and blame attribution to shooting tragedies. They find evidence for framing effects for individuals who are predisposed to agree with a particular message. Specifically, they find that Republicans are more likely to support rights to carry concealed handguns when questions are presented in an “individual rights” frame, relative to being presented in a “public safety” frame, but these framing effects are not present for Democrats. Likewise, they show that the impact of framing in attributing blame for school shootings depends on the relationship between the type of framing and the predisposition of respondents. When Democrats are presented with the suggestion that many people argue that weak gun laws may be responsible for the Columbine School shootings, they are significantly more likely to attribute blame to weak gun control, relative to a control group that is simply asked to attribute blame to a number of possible factors without any cues.

Meanwhile, Republicans that are presented with the suggestion that media violence may be to blame for the shootings are much more likely to attribute blame to this factor relative to those that are not presented with this frame. Importantly, Democrats are not affected by the media violence frame and Republicans are not affected by the weak gun laws frame.

Data Description

The 2013 Hamilton College Youth Poll is one in a series of surveys aimed at learning about attitudes and opinions on various issues facing young people. Previous surveys, dating back to 1999, have focused on topics including immigration, gay rights, the U.S. economy, and attitudes towards the environment. The primary purpose of this particular survey was to assess student attitudes and perceptions towards school violence and school and public policies related to gun rights and gun control. In order to do this, the survey was conducted using the web-enabled Knowledge Panel®, a probability-based panel designed to be representative of the U.S. population and administered by the research firm GfK.¹ Initially, participants are chosen scientifically by a random selection of telephone numbers and residential addresses. Persons in selected households are then invited by telephone or by mail to participate in the web-enabled Knowledge Panel®. For those who agree to participate, but do not already have Internet access, GfK provides at no cost a laptop and ISP connection. People who already have computers and Internet service are permitted to participate using their own equipment. Panelists then receive unique log-in information for accessing surveys online, and then are sent emails throughout each month inviting them to participate in research.² In total, 941 high school sophomores, juniors, and seniors were sampled from across the United States during the months of September, October, and November of 2013.

¹ For more information about GfK, visit: <http://www.gfk.com/us/Pages/default.aspx>

² More technical information is available at <http://www.knowledgenetworks.com/ganp/reviewer-info.html>.

The survey asked questions about general attitudes towards gun control, gun ownership and gun related violence, and exposure to guns at home and school. Background information was collected on gender, race, and family characteristics such as household income and parental education. Respondents also provided their class year, type of high school (public or private), and approximate size of the high school student body. The survey asked the respondents to rate the importance of various factors that may contribute to gun and school violence, including: being a victim of bullying, mental instability, exposure to video games or violent movies, use of alcohol or illegal drugs, and media coverage of other school shootings. There was also a question that asked about the students' knowledge of various incidents of school violence, including incidents at Columbine High School, Newtown Elementary School, and Virginia Tech University. Survey takers were also asked about their exposure to guns, including whether or not someone in their household owned a gun, whether they had ever fired a gun, and how easy they thought it would be for a student at their school to obtain a gun.

One goal of the survey was to determine whether student attitudes may be shaped by the ordering, framing, and wording of questions. To do this, several different versions of the survey were generated and respondents were randomly given different versions. For half of the respondents, the question on the knowledge of previous school shootings was placed near the beginning of the survey, while the other half of respondents were asked this question at the end of the survey. It is possible that cueing some students to think about prior acts of school violence would shape their attitudes towards gun control and gun ownership policy. For one question regarding views on the strictness of gun control policy, some respondents were randomly assigned a version that provided the information that, "Utah and South Dakota have relatively loose gun control laws and low rates of gun violence per capita" before being asked whether or not they agreed that "gun control laws in most states are too strict." Other respondents had a version with no prompting, while a third group were assigned a version that provided information that "Louisiana and Missouri have loose gun control laws and high rates of gun violence per capita" before being asked about the strictness of gun control laws. Finally, a question on the importance of allowing people to practice their right to bear arms was preceded by a cue of the 2nd amendment for one

third of the survey respondents, but not for the rest of the sample. Details of the survey can be found in the Appendix.

Summary Statistics

Table 1 shows some general statistics on the demographic characteristics of the sample as well as the distribution of answers to a number of different questions regarding gun and school violence, gun control, and gun rights. The sample consists of 8% Black students, 17% Hispanic students, and an additional 11% other non-White students. High school sophomores (40%) and juniors (39%) are more well represented than seniors (21%), while approximately equal numbers of students identify most closely with the Republican Party (27%) as with the Democratic Party (25%), with the rest identifying with neither party, or claiming to be Independent (48%). Male and female students are equally represented in the survey.

Students are generally in agreement about the importance of protecting rights to gun ownership. 77% agree or strongly agree that individuals should have the right to carry guns in order to protect their property, while 60% agree or strongly agree that individuals should have the right to carry a concealed gun. At the same time, the vast majority of respondents believe that there should be stricter laws concerning background checks for guns (85% agree or strongly agree), though less than half (47%) believe that stricter gun control laws will actually decrease gun related violence. Instead, nearly three quarters of students (74%) agree or strongly agree with the statement that “schools that have properly trained and armed nonteaching staff would become safer,” while the analogous number for agreement with the statement “A greater presence of armed citizens would reduce the risk of mass shootings” is 55%. Slightly less than 60% believe that schools should have metal detectors for security purposes.

Cueing and Framing Effects on Attitudes

I begin my analysis of the determinants of attitudes towards gun violence, gun control and gun rights by focusing on the degree to which students agree with the statement that “schools that have more trained

and armed non-teaching staff would become safer places.” Table 2a shows results for an ordered probit regression which uses the 1-4 scale (strongly disagree, disagree, agree, strongly agree) as the dependent variable, where a higher number indicates more agreement with the statement. In column 1, I estimate this regression for all students and find students that most closely identify as Republicans are stronger in their agreement with this statement relative to Independents and this coefficient is significant at the 1% level. Female students are less likely to agree with this assessment, and this coefficient is significant at the 10% level. Democrats are less likely to agree with this statement, though the coefficient is not statistically significant. Seniors and juniors are somewhat less likely than sophomores to think having armed personnel in schools would increase safety, though these coefficients are not very statistically significant. Meanwhile, income level and race are not important predictors in this regression.

A primary aim of this study is to see whether the framing and wording of questions may influence responses. In order to study this, several versions of the survey were created and randomly assigned. For this survey, half of the students were asked about their knowledge of various school shootings (such as Newtown, Columbine, and Virginia Tech) immediately before the statements, “Schools that have properly trained and armed non-teaching staff would become safer places” and “a greater presence of armed citizens would reduce the risk of mass shootings.” The other half of students were provided a version where the question about school shootings was at the very end of the survey. The last regression coefficient in column 1 indicates that students who are cued to think about previous acts of school violence are significantly more likely to believe in the efficacy of having armed guards in schools. This effect is large and statistically significant. In fact, this coefficient is more than half the size of the coefficient for identifying as a Republican.

Previous literature has shown that framing and cueing effects often depend on one’s predisposed beliefs. To test this hypothesis I estimate the same regressions for the sample of Democrats, Republicans and Independents in columns 2,3, and 4, respectively. Results in column 2 show that within the sample of Democrats, females show significantly stronger degree of agreement with the statement about the efficacy of having armed personnel in schools than their male counterparts, while juniors and seniors are

significantly less likely to agree than sophomores. Interestingly the effect of the school shootings cue is small (an estimated coefficient of -0.02) and statistically insignificant. In column 3, we see that within the sample of self-identifying Republicans, females show much *less* agreement with this statement, while the effects of class year are not significant. Meanwhile, the school shootings cue has a very large and significant effect, with a coefficient of 0.38, which is nearly twice as large as the overall effect that is seen across the entire sample. Column 4 shows that the magnitude of the effect for Independents is in between (0.17), though it is not statistically significant.

Table 2b repeats the same analysis but instead uses a binary response as the dependent variable. The variable is set equal to one if the respondent strongly agrees that having armed staff would increase school safety and zero otherwise. The results in column 1 for all respondents show that those that are cued to think about previous school shootings are 8% more likely to strongly agree with this statement, an effect that is even larger than the effect of being Republican (relative to being Independent). Consistent with our results in Table 2a, the effects are not the same across the political spectrum. In columns 2-4, the coefficients on the school shootings cue are 14% and 8% for Republicans and Independents, respectively (both statistically significant), while the analogous coefficient for the sample of Democrats is not statistically different than zero.

Next, I test to see whether these cueing effects carry over to general attitudes towards arming citizens. In Tables 3a and 3b, I analyze the level of agreement with the statement, “A greater presence of armed citizens would reduce the risk of mass shootings.” In Table 3a, I estimate ordered probits, using the 1-4 response as the dependent variable, where once again a higher number indicates a greater level of agreement with the statement. Unsurprisingly, political party is a strong predictor of responses. Republicans are significantly more likely than Independents to agree with this statement, while Democrats are significantly less likely to agree, relative to Independents. Hispanics are less likely to agree than non-Hispanic whites, while income and gender are not significant in the regressions. As for the coefficients on cueing respondents to think about prior school shootings, the effects are positive for the entire sample, as well as for the sample of Republicans and Independents, and negative for

Democrats. Although, none of these coefficients is statistically significant, a t-test for the equivalence of the coefficient on Republicans and the coefficient on Democrats is rejected at the 10% level (p -value 0.06). In Table 3b, I use a binary response as the dependent variable, where the variable equals one if the student indicates “strongly agree” with the statement that arming citizens would decrease the risk of mass shootings. Over the entire sample, respondents are 3% more likely to strongly agree with the statement when they are cued to think about prior school shootings, though this coefficient is not statistically significant. Again, the effects are very different across political affiliations. For self-identifying Republicans, providing students with the cue of thinking of previous school shootings leads to a statistically significant increase of 15% on the likelihood of strongly agreeing that arming citizens would decrease risk of mass shootings. There are no significant effects for Democrats or Independents.

Next, we test whether or not the prompting of the second amendment affects the degree to which individuals value the importance of gun rights. For one third of the sample, individuals were provided with the following statement: “The 2nd Amendment of the U.S. Constitution protects the right of the people to keep and bear arms.” This was then followed by the statement, “I believe that it is important for Americans to be able to practice this right,” and respondents were asked about the degree to which they agree with that statement. For the other two thirds of the sample, there was no prompting of the 2nd Amendment, and the following statement was given to survey respondents: “It is important for Americans to have the right to arm themselves with guns,” and respondents were asked to agree or disagree with that statement. The results of regressions that analyze the level of agreement with these slightly different statements (with and without the prompt) are shown in Tables 4a and 4b. In the ordered probit regressions in Table 4a, I find that after controlling for race, gender, year in school, household income, parental education, and political affiliation, those that are prompted to think about the 2nd Amendment are more likely to believe that it is important for Americans to practice the right to bear arms. When I estimate this separately by political party, I find that only the coefficient for Republicans is statistically significant. In Table 4b, those that are given the 2nd Amendment cue are 8% more likely to strongly agree with this statement than those that are not cued. When limiting the analysis to those of similar political

persuasion, we see that again, this effect is large and significant for self-identified Republicans, but insignificant for Democrats and Independents. Republicans are 17% more likely to believe in the importance in protecting the right to bear arms when it is framed as a Constitutional right than when it is not.

Thus far, I have analyzed the effects of cues that may appeal primarily to one's emotions. In these cases, the results suggest that Republicans (more likely to be inclined to support gun ownership rights) are more likely to be affected by these cues than Democrats, while the effects for Independents are somewhere in between. Next, I test the effect of a different type of cue: one that provides objective, albeit selective, information that may be relevant to one's views on gun control. All respondents were asked to agree or disagree with the statement "I believe that gun control laws in most states are too strict." For one third of the sample (the "conservative information cue"), this statement was preceded with the information that "Utah and South Dakota have relatively loose gun control laws and low rates of gun violence per capita." For another third of the sample (the "liberal information cue"), respondents were provided with the information that "Louisiana and Missouri have loose gun control laws and high rates of gun violence per capita". For the final third of the sample, there was no corresponding informational cue about specific states. Once again, the assignment of these survey versions was random. Column 1 of Table 5a shows the results of ordered probits for the entire sample. Again, political affiliation is a strong predictor of the level of agreement with the statement that gun control laws are too strict, as Republicans are significantly more likely to agree than Independents and Democrats significantly less likely to agree. After controlling for political affiliation, views on the strictness of gun control laws are not systematically different across other demographic characteristics such as school class year, income, and race. We find an interesting asymmetry in the effect of providing different types of information. Providing information that two states with loose gun control laws also have low rates of gun violence (the "conservative prompt") significantly increases respondents' likelihood to believe that gun control laws are too strict, relative to no prompting of information, but there is no effect of providing information that two states with loose gun control law happen to have high rates of gun violence (the "liberal prompt").

When I divide the sample by political party in columns 2-4, I find that Democrats and Independents are the ones most affected by the information given in the “conservative prompt”, while the coefficient on the conservative prompt is insignificant for Republicans. The liberal prompt is negative for Republicans, though not statistically significant, and the liberal prompt does not significantly affect responses for Democrats or Independents. In Table 5b, I do an analogous estimation of probits, where the dependent variable is equal to one if respondents strongly agree with the statement that gun laws are too strict in most states. Independents are the group that have the strongest effects from the conservative informational prompt, with an increase of 8% in the probability of strongly agreeing with the statement. For Republicans, the liberal prompt significantly decreases the likelihood of strongly agreeing with this statement. In looking at the results from Tables 5a and 5b, we see that informational cues seem to moderate views. Republicans become more open to the idea that gun control may be too strict when given information about states with loose gun control laws and high rates of gun violence, while Democrats and Independents are more open to the idea that gun control laws might *not* be too strict when given information about other states that have loose gun laws and low rates of gun violence.

Taken together, I find that the prompting of information, and the framing and ordering of questions can have significant effects on attitudes towards guns and gun control, but these effects vary across the political spectrum. Young people that most closely identify as Republicans are strengthened in their support of gun rights when prompted to think about prior acts of school violence and cued to think about the 2nd Amendment of the U.S. Constitution that discusses individuals’ rights to bear arms. However, Democrats are not significantly affected by these cues. The magnitudes and significance of the effects for Independents lies somewhere in between. Meanwhile, Democrats and Independents are more likely to be convinced that gun control laws are too strict when presented with information that certain states have loose gun control laws and low rates of gun violence. This is quite remarkable given the fact that Democrats and Independents in general are more likely to believe that gun control laws are not strict enough, relative to Republicans, who are not affected by the information that is presented to them. One interpretation of these results is that emotional cues are more likely to exacerbate the initial biases of

individual attitudes towards gun laws, while information cues are more likely to change people's minds about this controversial issue.

Conclusion

In this paper, I have conducted an analysis of youth attitudes towards guns and gun and school violence using a new data set of American High School seniors, juniors, and sophomores. I find that the attitudes are strongly related to self-identified political preferences. Students that most closely identify as Republicans are more likely to agree that arming citizens and arming school personnel would be effective in decreasing mass shootings and school violence than Democrats. Meanwhile, self-identifying Democrats are more likely than Republicans to believe that gun control laws should be stricter in many states. However, individual responses are also significantly shaped by the framing of the survey questions and the prompting of certain relevant information. The nature of these types of cues also determines the impacts that they have on student responses. Prompting students to think about prior acts of school violence increase the likelihood that Republicans agree about the efficacy of arming citizens to reduce violence, but this effect is not present for Democrats. Likewise, prompting students to think about the 2nd Amendment of the U.S. Constitution increases their assessment of the importance of individual gun rights for Republicans, but not for Democrats. When looking at the effect of informational cues, I find that providing selective information that certain states have loose gun control laws and low rates of gun violence increases the agreement that gun control laws are too strict in most states for Democrats, but not for Republicans. However, the prompting of information that certain states have loose gun control laws and high rates of gun violence actually decreases the likelihood that Republicans think that gun control laws are too strict, but has no impact for Democrats. These results are consistent with the idea that emotional cues strengthen pre-existing biases towards gun control and gun rights, while informational cues sway people to become more moderate in their views on these issues. Further research that looks at the differences between the effects of different types of cues would be helpful in understanding the factors that shape voter attitudes.

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Table 1: Summary Statistics

VARIABLES	Mean	Std. Dev.	Min	Max
Female	0.49	0.50	0	1
Black	0.08	0.27	0	1
Hispanic	0.17	0.37	0	1
Other Non-White	0.11	0.31	0	1
Sophomore	0.40	0.49	0	1
Junior	0.39	0.49	0	1
Senior	0.21	0.41	0	1
Democrat	0.25	0.43	0	1
Republican	0.27	0.44	0	1
Income Category	12.47	4.26	1	19
	Strongly Agree	Agree	Disagree	Strongly Disagree
<u>Agreement with Following Statements (%)</u> :				
Individuals should have right to carry guns to protect property	24.5	54.1	17.4	4.0
Individuals should have right to carry a concealed gun	17.1	43.4	31.3	8.2
There should be stricter background checks for guns	40.6	44.4	12.7	2.3
Stricter gun control laws will decrease gun related violence	13.0	34.3	37.2	15.5
Schools with properly trained and armed staff would be safer	19.4	54.5	22.4	4.1
More armed citizens would reduce risk of mass shootings	14.2	36.8	38.6	10.4
Schools should have metal detectors for security purposes	19.5	49.2	26.4	5.0
Observations	941			

Notes: Sample includes random sample of U.S. sophomores, juniors and seniors.

Table 2a: Emotional Cues and attitudes towards arming school employees
 Ordered Probits: Dependent variable is degree of agreement with the statement that “schools that have properly trained and armed nonteaching staff would become safer places.”

VARIABLES	(1)	(2)	(3)	(4)
	<u>All</u>	<u>Democrat</u>	<u>Republican</u>	<u>Indep</u>
Female	-0.13* (0.07)	0.36** (0.15)	-0.34** (0.16)	-0.30*** (0.11)
Black	-0.06 (0.15)	0.17 (0.21)	-0.41 (0.87)	-0.47** (0.23)
Hispanic	-0.09 (0.11)	-0.28 (0.21)	0.37 (0.27)	-0.06 (0.14)
Other non-white	0.10 (0.12)	0.18 (0.23)	0.09 (0.36)	0.10 (0.17)
Junior	-0.11 (0.08)	-0.45*** (0.17)	-0.07 (0.17)	0.05 (0.12)
Senior	-0.17 (0.10)	-0.67*** (0.21)	0.09 (0.21)	-0.00 (0.14)
Income Category	-0.00 (0.01)	-0.02 (0.02)	-0.01 (0.02)	0.01 (0.01)
Democrat	-0.14 (0.09)			
Republican	0.34*** (0.09)			
School shootings cue	0.20*** (0.07)	-0.02 (0.15)	0.38** (0.15)	0.17 (0.11)
Observations	905	224	245	436

Notes: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1 Omitted political affiliation is independent. Omitted class year is sophomore. Controls for mother’s and father’s education are also included. Dependent variable is measured on a 1-4 scale (4=strongly agree, 1=strongly disagree).

Table 2b: Emotional Cues and attitudes towards arming school employees
 Probits: Dependent variable equals one if strongly agree with the statement that “schools that have properly trained and armed nonteaching staff would become safer places.”

VARIABLES	(1)	(2)	(3)	(4)
	<u>All</u>	<u>Democrat</u>	<u>Republican</u>	<u>Indep</u>
Female	-0.05** (0.03)	0.06 (0.04)	-0.09 (0.06)	-0.09** (0.04)
Black	-0.01 (0.05)	-0.02 (0.05)		-0.06 (0.07)
Hispanic	-0.02 (0.04)	-0.13*** (0.03)	0.07 (0.10)	0.02 (0.05)
Other non-white	-0.00 (0.05)	-0.01 (0.07)	-0.01 (0.13)	0.03 (0.06)
Junior	-0.08*** (0.03)	-0.15*** (0.04)	-0.04 (0.06)	-0.04 (0.04)
Senior	-0.02 (0.03)	-0.13*** (0.03)	0.05 (0.08)	0.07 (0.05)
Income Category	-0.00 (0.00)	-0.01 (0.01)	-0.00 (0.01)	-0.00 (0.01)
Democrat	-0.02 (0.03)			
Republican	0.07** (0.03)			
School shootings cue	0.08*** (0.03)	-0.01 (0.04)	0.14** (0.06)	0.08** (0.04)
Observations	905	224	243	436

Notes: Listed coefficients are marginal effects. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1 Controls for mother’s and father’s education are also included. Omitted class year is sophomore. Omitted political affiliation is independent.

Table 3a: Emotional Cues and attitudes towards arming citizens
 Ordered Probits: Dependent variable is degree of agreement with the statement that “a greater presence of armed citizens would reduce the risk of mass shootings.”

VARIABLES	(1)	(2)	(3)	(4)
	<u>All</u>	<u>Democrat</u>	<u>Republican</u>	<u>Indep</u>
Female	-0.09 (0.07)	0.53*** (0.15)	-0.25* (0.15)	-0.35*** (0.11)
Black	0.09 (0.15)	0.05 (0.21)	0.07 (0.80)	-0.01 (0.24)
Hispanic	-0.22** (0.10)	-0.41* (0.21)	0.03 (0.25)	-0.15 (0.14)
Other non-white	-0.14 (0.12)	-0.43* (0.24)	-0.22 (0.35)	0.02 (0.16)
Junior	-0.10 (0.08)	-0.23 (0.17)	0.17 (0.16)	-0.11 (0.12)
Senior	-0.10 (0.10)	-0.71*** (0.21)	0.47** (0.20)	-0.00 (0.14)
Income Category	0.00 (0.01)	0.00 (0.02)	-0.01 (0.02)	0.01 (0.01)
Democrat	-0.24** (0.09)			
Republican	0.34*** (0.09)			
School shootings cue	0.08 (0.07)	-0.16 (0.15)	0.22 (0.14)	0.10 (0.11)
Observations	898	222	243	433

Notes: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1 Controls for mother’s and father’s education are also included. Omitted class year is sophomore. Omitted political affiliation is independent. Dependent variable is measured on a 1-4 scale (4=strongly agree, 1=strongly disagree)

Table 3b: Emotional Cues and attitudes towards arming citizens
 Probits: Dependent variable equals one if strongly agree with the statement that “a greater presence of armed citizens would reduce the risk of mass shootings.”

VARIABLES	(1)	(2)	(3)	(4)
	<u>All</u>	<u>Democrat</u>	<u>Republican</u>	<u>Indep</u>
Female	-0.05** (0.02)	0.07* (0.04)	-0.11** (0.05)	-0.08*** (0.03)
Black	-0.04 (0.04)	-0.04 (0.04)		-0.05 (0.05)
Hispanic	-0.06** (0.03)	-0.09*** (0.03)	-0.05 (0.07)	-0.03 (0.03)
Other non-white	-0.10*** (0.02)	-0.07* (0.04)	-0.12** (0.05)	-0.10*** (0.03)
Junior	-0.05* (0.02)	-0.07* (0.04)	0.03 (0.06)	-0.05* (0.03)
Senior	0.01 (0.03)	-0.07** (0.03)	0.22** (0.09)	-0.01 (0.04)
Income Category	0.00 (0.00)	-0.00 (0.00)	0.00 (0.01)	0.00 (0.00)
Democrat	0.01 (0.03)			
Republican	0.05* (0.03)			
School shootings cue	0.03 (0.02)	-0.03 (0.04)	0.15*** (0.05)	0.01 (0.03)
Observations	898	222	241	433

Notes: Listed coefficients are marginal effects. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1 Controls for mother’s and father’s education are also included. Omitted class year is sophomore. Omitted political affiliation is independent.

Table 4a: Framing effects and attitudes towards gun ownership rights
 Ordered Probits: Dependent variable is degree of agreement with the statement that “it is important for Americans to have the right to arm themselves with guns.”

VARIABLES	(1)	(2)	(3)	(4)
	<u>All</u>	<u>Democrat</u>	<u>Republican</u>	<u>Indep</u>
Female	-0.12 (0.08)	-0.00 (0.15)	0.07 (0.16)	-0.26** (0.11)
Black	-0.15 (0.15)	0.22 (0.21)	-1.68* (0.88)	-0.61** (0.24)
Hispanic	-0.07 (0.11)	-0.02 (0.21)	0.04 (0.27)	-0.12 (0.14)
Other non-white	-0.32** (0.12)	-0.43* (0.23)	-0.49 (0.36)	-0.26 (0.17)
Junior	-0.02 (0.08)	0.02 (0.17)	0.10 (0.17)	-0.10 (0.12)
Senior	-0.16 (0.10)	-0.27 (0.21)	0.23 (0.22)	-0.25* (0.15)
Income Category	-0.00 (0.01)	-0.01 (0.02)	-0.00 (0.02)	-0.00 (0.02)
Democrat	-0.43*** (0.09)			
Republican	0.41*** (0.09)			
2 nd Amendment Frame	0.21*** (0.08)	0.25 (0.17)	0.32* (0.17)	0.19 (0.12)
Observations	900	225	245	430

Notes: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1 Controls for mother’s and father’s education are also included. Omitted class year is sophomore. Omitted political affiliation is independent. Dependent variable is measured on a 1-4 scale (4=strongly agree, 1=strongly disagree)

Table 4b: Framing effects and attitudes towards gun ownership rights
 Probits: Dependent variable equals one if strongly agree with the statement that “it is important for Americans to have the right to arm themselves with guns.”

VARIABLES	(1)	(2)	(3)	(4)
	<u>All</u>	<u>Democrat</u>	<u>Republican</u>	<u>Indep</u>
Female	-0.04 (0.03)	-0.00 (0.05)	0.02 (0.07)	-0.06 (0.05)
Black	-0.12** (0.06)	-0.06 (0.06)		-0.24*** (0.06)
Hispanic	-0.03 (0.04)	-0.10* (0.05)	0.05 (0.12)	-0.03 (0.06)
Other non-white	-0.09* (0.05)	-0.11** (0.05)	-0.25* (0.13)	-0.06 (0.07)
Junior	-0.02 (0.03)	-0.02 (0.06)	0.08 (0.08)	-0.06 (0.05)
Senior	-0.02 (0.04)	-0.13*** (0.05)	0.12 (0.09)	-0.02 (0.06)
Income Category	-0.00 (0.00)	-0.00 (0.01)	0.00 (0.01)	-0.00 (0.01)
Democrat	-0.14*** (0.04)			
Republican	0.13*** (0.04)			
2 nd Amendment Frame	0.08** (0.03)	0.05 (0.06)	0.17** (0.07)	0.05 (0.05)
Observations	900	189	243	430

Notes: Listed coefficients are marginal effects. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1 Controls for mother’s and father’s education are also included. Omitted class year is sophomore. Omitted political affiliation is independent.

Table 5a: Information Cues and Attitudes Towards Gun Control Laws

Ordered Probits: Dependent variable is degree of agreement with the statement that “gun control laws in most states are too strict.”

VARIABLES	(1)	(2)	(3)	(4)
	<u>All</u>	<u>Democrat</u>	<u>Republican</u>	<u>Indep</u>
Female	-0.15** (0.07)	0.29* (0.15)	-0.28* (0.15)	-0.37*** (0.11)
Black	-0.13 (0.15)	-0.05 (0.21)	-1.35 (0.86)	-0.43* (0.24)
Hispanic	-0.08 (0.11)	-0.25 (0.22)	0.10 (0.26)	-0.01 (0.14)
Other non-white	-0.22* (0.13)	-0.58** (0.24)	-0.01 (0.36)	-0.08 (0.17)
Junior	-0.01 (0.08)	-0.04 (0.17)	0.04 (0.16)	0.00 (0.12)
Senior	0.01 (0.10)	-0.40* (0.22)	0.37* (0.21)	0.13 (0.15)
Income Category	-0.00 (0.01)	-0.02 (0.02)	0.02 (0.02)	-0.00 (0.02)
Democrat	-0.44*** (0.09)			
Republican	0.35*** (0.09)			
Conservative Information Cue	0.35*** (0.09)	0.48** (0.20)	0.16 (0.19)	0.45*** (0.14)
Liberal Information Cue	0.03 (0.09)	0.04 (0.19)	-0.24 (0.18)	0.12 (0.13)
Observations	902	225	244	433

Notes: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1 Controls for mother’s and father’s education are also included. Omitted class year is sophomore. Omitted political affiliation is independent. Dependent variable is measured on a 1-4 scale (4=strongly agree, 1=strongly disagree)

Table 5b: Information Cues and Attitudes Towards Gun Control Laws

Probits: Dependent variable equals one if strongly agree with the statement that “gun control laws in most states are too strict.”

VARIABLES	(1)	(2)	(3)	(4)
	<u>All</u>	<u>Democrat</u>	<u>Republican</u>	<u>Indep</u>
Female	-0.03 (0.02)	0.02 (0.02)	-0.04 (0.04)	-0.07** (0.03)
Black	-0.01 (0.03)	-0.01 (0.01)		-0.05 (0.04)
Hispanic	-0.03 (0.02)		0.01 (0.06)	-0.02 (0.03)
Other non-white	-0.03 (0.02)		-0.02 (0.08)	-0.02 (0.04)
Junior	-0.01 (0.02)	-0.01 (0.01)	0.00 (0.04)	-0.01 (0.03)
Senior	0.03 (0.03)		0.12 (0.07)	0.05 (0.04)
Income Category	0.00 (0.00)	-0.00 (0.00)	0.01** (0.01)	-0.00 (0.00)
Democrat	-0.06*** (0.02)			
Republican	0.03 (0.02)			
Conservative Information Cue	0.04 (0.02)	0.01 (0.02)	-0.01 (0.04)	0.08* (0.04)
Liberal Information Cue	-0.01 (0.02)	-0.01 (0.01)	-0.11*** (0.04)	0.05 (0.04)
Observations	902	107	242	433