Trump, Twitter, and Public Dissuasion: A Natural Experiment in Presidential Rhetoric

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Abstract

Research suggests that the ability of the President to influence public attention to issues and shape public opinion is limited. Recently presidential efforts at persuasion have expanded to social media, but presidential persuasion has yet to be explored in this medium. W e address two relevant questions; first, what effects does a presidential tweet have on public interest in the issue discussed in the tweet? Second, what effect does a presidential tweet have on public attitudes about that issue? To answer these questions, we utilize a natural experiment that occurred while we were fielding a nationally representative survey of American adults. Our analysis provides considerable evidence that presidential tweets can have the *unintended* consequence of driving the public away from the president's position on an issue.

Introduction

The dominant view of presidential public persuasion holds that success depends on strict control over the content (Cohen 2010 ; Eshbaugh-Soha and Peake 2006 ; Eshbaugh-Soha 2008), timing (Canes-Wrone and Shotts 2004 ; Rottinghaus 2010 ; Welch 2003b), and delivery (Druckman and Holmes 2004; Tedin et al. 2010) of the presidential message. Presidents are more likely to persuade the public when approval is high, which is one reason for the emerging view that Presidents who engage in ideological (rather than centrist) public campaigns are more likely to succeed (Edwards 2009 ; Eshbaugh-Soha and Rottinghaus 2013 ; Welch 2000, 2003a ; Cavari 2017 ; Miles and Haider-Markel 2013).

To some extent, the 'go public'/'stay private' calculus is influenced by the political tim ing of a situation as well as the personal characteristics and leadership style of the President (Skowronek 1993, 2011). George W. Bush governed ideologically, which was manifest in his management of the E xecutive Branch *and* his approach to public campaigns (Edwards and King 2007 ; Jacobson 2007). However, this does not lead to the

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inevitable conclusion that centrist public campaigns are a relic of a bygone, less polarized political era (Cavari 2013). Although the stability of public opinion makes it difficult for presidents to significantly alter the public's policy preferences by advocating for a policy (Edwards 2009 ; Page and Shapiro 1992 ; Page and Bouton 2006 ; Stimson 2004), presidents certainly have an incentive to try to persuade the public when they think that they can (Canes-Wrone and Shotts 2004; Kernell 1986). Because presidential speeches raise the profile of issues, presidential speeches can generate greater public support for their policy proposals, but that support often dissipates quickly after the opposing side begins to speak on the issue (Cavari 2017).

President Trump is forging new ground for the study of presidential rhetoric. He is not the first president to use Twitter, but he is the first to use it prolifically and in his own voice to gauge public support for policy proposals, announce policy changes, and rapidly redirect the focus of the national news media within a single news cycle.

As such, we address two questions concerning the effectiveness of Twitter as a means for accomplishing the goals of presidential public speeches. First, what effects does a presidential tweet have on public interest in the issue discussed in the tw eet? That is, if the public is largely ignoring an issue or paying little attention to it, can a presidential tweet on that topic direct people to attend to that issue? Second, what effect does a presidential tweet have on public attitudes about that issue? To answer these questions, we utilize a natural experiment that occurred while we were fielding a national survey of American adults. Our analysis of data from survey respondents provides considerable evidence that presidential tweets can have the unintended consequence of driving the public away from the president's position on an issue.

Presidential Public Campaigns

Our view of presidential persuasion has been revised significantly over the last few years. Instead of a president that persuades the public to support his policy proposals with relative ease (Kernell 1986 ; Tulis 1987 ; Jacobs and Shapiro 2000), the emerging view is that of presidential persuasion that is constrained by the modern media environment and the limited attention of the public (Cohen 2010, 2008 ; Eshbaugh-Soha and Peake 2011 ; Eshbaugh-Soha 2008 ; Eshbaugh-Soha and Rottinghaus 2013 ; Tedin et al. 2010 ; Wood 2009). Yet, modern presidents use the bully pulpit even more frequently than those of an earlier era (Cohen 2010; Edwards 2003).

Although modern presidents may be able to persuade the public in particular situations (Druckman and Holmes 2004 ; Tedin et al. 2010 ; Page et al. 1987 ; Mondak 1993), public opinion may be too stable for presidents to significantly shift through public campaigns (Edwards 2003, 2009). Moreover, as the citizens who attend to politics develop stronger political views (Abramowitz 2010; Abramowitz and Jacobson 2006; Abramowitz and Saunders 1998), the size of potential converts to a presidential appeal may be shrinking (Zaller 1992), which may lead presidents to target their appeals to narrow constituencies that already express broad support for the president (Wood 2009 ; Eshbaugh-Soha and Rottinghaus 2013 ; Miles and Haider-Markel 2013 ; Cavari 2017). Many now look beyond persuasion when identifying strategic purposes for modern pres-

idential public campaigns. Indeed, most explanations focus on how presidential public campaigns influence the national news agenda (Cohen 1995 ; Eshbaugh-Soha and Peake 2011 ; Miles 2014) or the tone of press coverage (Cohen 2008, 2010).

However, modern presidents certainly have an incentive to try to persuade the public. We should not assume that presidents use public campaigns exclusively to influence media coverage. Nor should we assume that because modern presidents face substantial obstacles when trying to persuade general public opinion that they no longer attempt to do so. Although substantial evidence suggests that modern presidents will not persuade the broader public with a public push for policy a policy position, presidents are still motivated to go public in order to maintain the stability of their base constituency and shore up support in Congress.

In a polarized political environment, it makes more sense to examine the influence of presidential rhetoric among partisan subgroups (Cavari 2017 ; Miles and Haider-Markel 2013 ; Wood 2009). One flaw with earlier analyses of public responsiveness to presidential rhetoric is that the pre-test, post-test surveys are not conducted in the immediate aftermath of the presidential speech, or do not utilize panel data (Edwards 2003, 2009). Presidents may indeed influence public opinion, but intervening variables may confound previous findings which suggest that US presidents fail to persuade the broader public. Cavari (2017) noted this problem and developed a research design that measured the influence of presidential rhetoric almost immediately after a presidential speech. Contrary to the dominant view, Cavari(2013) argues that presidential speeches have a significant short-term influence on public opinion, especially among the presidents' co -partisan supporters.

Twitter

President Trump uses Twitter more often and in ways that unlike any of his predecessors (Newport 2018). Although Barack Oba has almost twice the number of Twitter followers (105 million) as President Trump (5 8 million) Obama uses Twitter differently. Trump uses Twitter in much the same way that prior presidents have used presidential speeches. For example, Trump effectively uses Twitter to shape the attention of the national news agenda (Wells et al. 2016). Just as previous presidents use public speeches to control the national news agenda, Trump uses Twitter to change the subject when it suits his needs (Patterson 2017). Trump also uses Twitter to test trial balloons and gauge public support for policy proposals. Sam Nunberg—an advisor in Trump's 2016 presidential campaign — stated that the campaign used Twitter as a focus group. Much of the campaign messaging was determined by the number of times followers retweeted Trump. An issue that was retweeted more than 100 times was deemed a " winning " issue and became a part of the campaign messaging (Bogado 2017).

Given President Trump's propensity for using Twitter as another presidential rhetorical tool, and the rapid diffusion of Twitter subscriptions in the U.S., we think it is important to evaluate the influence of Trump's tweets on public opinion. Consistent with the literature just discussed, it is reasonable to conclude that a presidential tweet will have a positive, short term effect on public opinion. Yet, others note that unpopular presidents

have a more difficult time persuading the public (Canes-Wrone and Shotts 2004). At the time of this study, only about 42 percent of the American public approved of his presidency. As such, we hypothesize that a tweet from President Trump may have a negligible influence on overall public opinion but will increase support for his policy proposal among conservatives (H1).

Methods and Results

A sample of 2,023 subjects was recruited for the authors by Survey Sampling International (SSI) to participate in a national survey on political issues from July 27-August 1, 2018. For this survey we over-sampled gun owners to obtain a more diverse sample of gun owners than a random sample would draw, which required a different sampling strategy. SSI sent 102,466 invitations, 2,780 began the survey (2.7% response rate) and 2,023 (72.7%) completed the entire survey. Because the primary purpose of the survey was related to attitudes and behaviors of gun-owners, we included a question about 3-D printed guns. As the survey was in the field the issue of 3- D printed guns was being covered in the news media because of a litigation involving the State Department and an entrepreneur that had been trying to make the sale of his blueprints for 3-D printed guns available on the Internet, the president learned of the issue. At 7:03 am on July 31, 2018 President Trump tweeted about the ability to print 3- D guns. Specifically, he tweeted, " I am looking into 3-D Plastic Guns being sold to the public. Already spoke to the NRA, doesn't seem to make much sense! " We interpret the tweet to mean that Trump was less than enthusiastic about the prospect of people printing their own 3-D guns without oversight.

This tweet provides a natural experiment, where some of our respondents were surveyed and asked their opinion about 3-D printed guns prior to the president's tweet, and some were surveyed and asked about 3-D printed guns after the president's tweet. This allows us to explore the potential immediate impact of President Trump's tweet on public attitudes before and after the tweet.

In the survey we asked respondents, " Some Americans own 3-D printers, which can make a variety of plastic objects, including guns or gun parts. How strongly would you support or oppose allowing Americans to print their own guns or gun parts in their homes?" Respondents indicated their support or opposition on a four-point scale from strongly favor to strongly oppose, with an additional option of stating " Don't know." Approximately 1,500 people answered this question prior to the tweet from President Trump and about 350 responded to this question after the tweet. As often happens with natural experiments, we do not have equally balanced groups in all regards, and the treatment does not perfectly match the outcome variable, but as our methodological appendix shows, the balance between groups is reasonably similar. The experiment is not perfect, but it is sufficient to allow us to explore for the first time the potential causal effect of a presidential tweet on public opinion.

The first question we explore is whether or not respondents in our survey were aware of the tweet. Since we did not design the survey with this experiment in mind, we

did not ask respondents if they had heard about the tweet. This prevents us from directly measuring the direct influence of having read the tweet, but we believe that we can infer that the tweet did have an immediate influence on the attention of the US public. We used Google Trends to assess how popular the search term "3-D gun" was in the time preceding and immediately after President Trump's tweet.

For context, Google Trends measures the popularity of a search term on a scale from 0-100. Numbers represent search interest relative to the highest point on the chart for the given region and time. A value of 100 is the peak popularity for the term. A value of 50 means that the term is half as popular. A score of 0 means there was not enough data for the term. In the five years previous to the Trump tweet, the mean popularity for the search term is 6.65 (see Figure 1). The only time in which the term exceeds a value of 30 is the week in which Trump tweeted about 3-D guns and the popularity of the search term reached 100 that week. Looking at the daily trend of the search term shows that Trump's tweet and related news media coverage on 3-D guns substantially raised the interest in that topic. From July 17-Aug. 3, 2018 the average popularity of that search term is 20.67. On July 30—the day before the tweet—its popularity is 21. On the day of the tweet, the interest in that term jumps to 92 and by August 1, the popularity is 100. By August 2, people are no longer interested in the topic and the interest in the search term drops down to 20.

Figure 1: Google Trends Web Search of "3-D gun" (U.S.)
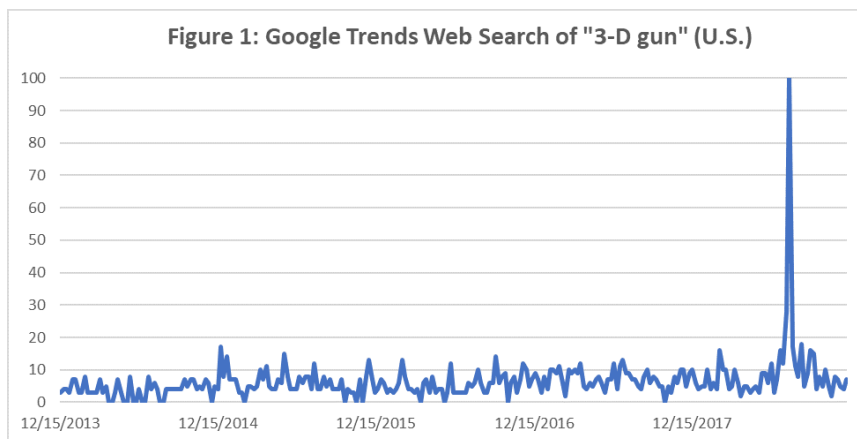
Even if few people actually follow Trump directly through a Twitter account, news media coverage of nearly everything that he posts on Twitter makes it certain that many people without Twitter accounts were aware of the tweet. In addition, because of the amplification effect that occurs as one national media outlet writes a story on one issue, soon to be followed by similar stories by other national, state, and local outlets, we can infer that even a single tweet from the president (especially one that seems counter to his general positions on gun rights) would engender much attention from the broader public.

Even if people did not read the tweet from President Trump, the preceding demonstrates that the tweet and increased related news media coverage related to the tweet was associated with a substantial surge of interest in the topic of 3-D printed guns. Moreover, the interest caused by this tweet is much greater than the interest had been in the topic

for the preceding five years. This makes the 3-D gun tweet an ideal test case to measure the influence of Trump's tweets on public opinion. First, data were being collected at the time of the tweet allowing for a natural experiment. Second, we measure immediate public responses to a tweet about a topic which was previously not very salient. Third, the tweet generated immediate general interest in the topic, which quickly dissipated. We know that President Trump can influence the attention of the national news media with his tweets, but what effect does that have on public opinion?

To find out, we combined the strongly agree with agree and strongly disagree with disagree to create a dichotomous variable coded 1 if the individual agrees that people should be allowed to print 3-D guns and 0 if they disagree. Because it is an experiment in which respondents are randomly assigned to the pre-test or post-test, we do not include any control variables in our initial model (Kam and Trussler 2017; Green 2009). The first column in Table 1 displays the results of this logistic regression model.

What effect did President Trump's tweet have on public attitudes on 3-D gun printing? The results in column 1 of Table 1 suggest that after the tweet survey respondents were significantly more likely to support printing 3-D guns at home than were respondents surveyed prior to the tweet. In fact, the model predicts that the probability of supporting 3-D printed guns is eight percentage points higher in the post-tweet treatment group (0.44) than in the pre-tweet group (0.36). Although there is research that suggests associating a proposal with a president decreases support among partisans from the opposite party (Miles and Haider-Markel 2013), this is the first documented evidence of which we are aware of presidential rhetoric having a significant and negative influence on general public opinions. If Trump had not tweeted about 3-D printed guns, fewer Americans would have supported allowing printing 3-D guns.

The next two columns in Table 1 introduce control variables and estimate possible competing explanations. Not surprisingly, during the time of the survey President Trump had higher approval ratings among Republicans and conservatives than he did among Democrats and liberals. If presidential persuasion via Twitter is contingent upon presidential approval, we would expect to see conservatives being less supportive of the legal printing of 3-D guns. That is consistent with the findings displayed in Table 1, but looking at the political ideology control variable, the most conservative respondents are just as likely to support Trump's position as liberal respondents. Although, extremely liberal survey participants are the least likely to support Trump's position, liberal respondents are just as likely as very conservative respondents to side with Trump. In addition, Republicans and Independents are *less* likely to support President Trump's position, but it is unclear what influence the tweet had on this support. Finally, gun owners are significantly less likely to support Trump's position than are those who do not own guns.

In sum, if we examine all of the groups who comprise Trump's core constituents, none of them are more likely to support his position. The third column in Table 1 introduces gender as a control variable. The experiment is unbalanced by gender, so introducing this variable into the model causes the main effect of the natural experiment to drop below the threshold of statistical significance, although the other control variables retain their

TABLE 1
Predicting Support for 3-D Gun Printing

	(1)	(2)	(3)	(4)
Gun Tweet : After Tweet	0.319***	0.442***	0.110	-1.082
	(0.118)	(0.132)	(0.141)	(1.530)
Education		-0.024	-0.033	-0.045
		(0.039)	(0.039)	(0.044)
Gun in house, Yes, but it doesn't belong to me		-0.573***	-0.431**	-0.493***
		(0.165)	(0.168)	(0.182)
Gun owner No		-0.582***	-0.509***	-0.536***
		(0.114)	(0.115)	(0.131)
Ideology: Liberal		-0.555***	-0.504***	-0.531***
		(0.168)	(0.170)	(0.190)
Ideology: Somewhat Liberal		-0.873***	-0.819***	-0.837***
		(0.204)	(0.206)	(0.230)
Ideology: Moderate		-0.874***	-0.802***	-1.005***
		(0.165)	(0.167)	(0.187)
Ideology: Somewhat Conservative		-1.114***	-1.067***	-1.206***
		(0.225)	(0.226)	(0.257)
Ideology: Conservative		-1.061***	-1.042***	-1.188***
		(0.218)	(0.220)	(0.253)
Ideology: Extremely Conservative		-0.483**	-0.452*	-0.511*
		(0.244)	(0.244)	(0.281)
Age		-0.030***	-0.031***	-0.032***
		(0.004)	(0.004)	(0.004)
Party identification: Independent		0.256*	0.272**	0.340**
		(0.132)	(0.134)	(0.151)
Party identification: Republican		0.785***	0.777***	0.842***
		(0.146)	(0.148)	(0.169)
Income		0.002	-0.012	-0.011
		(0.027)	(0.028)	(0.028)
Evangelical Christian		0.096	0.111	0.104
		(0.125)	(0.126)	(0.128)
Race		0.067	0.061	0.064
		(0.052)	(0.052)	(0.053)
What is your gender?			-0.674***	-0.620***
			(0.114)	(0.119)
Gun Tweet : After Tweet * Ideology: Liberal				0.143
				(0.424)
Gun Tweet : After Tweet * Ideology: Somewhat Liberal				0.043
				(0.519)
Gun Tweet : After Tweet * Ideology: Moderate				1.064**
				(0.416)
Gun Tweet : After Tweet				0.668

TABLE 2
Table 1 Continued

Gun Tweet: After Tweet * Ideology: Liberal				0.143
				(0.424)
Gun Tweet: After Tweet * Ideology: Somewhat Liberal				0.043
				(0.519)
Gun Tweet: After Tweet * Ideology: Moderate				1.064**
				(0.416)
Gun Tweet: After Tweet * Ideology: Somewhat Conservative				0.668
				(0.532)
Gun Tweet: After Tweet * Ideology: Conservative				0.684
				(0.501)
Gun Tweet: After Tweet * Ideology Very Conservative				0.342
				(0.555)
Gun Tweet: After Tweet * Party Identification: Independent				-0.254
				(0.336)
Gun Tweet: After Tweet * Party Identification: Republican				-0.230
				(0.345)
Gun Tweet: After Tweet * Gun in house				0.456
				(0.474)
Gun Tweet: After Tweet * Gun Owner: No				0.113
				(0.271)
Gun Tweet: After Tweet * Education				0.052
				(0.086)
Gun Tweet: After Tweet * Gender				-1.015*
				(0.594)
Constant	-0.554***	1.024	1.840**	2.041**
	(0.053)	(0.831)	(0.848)	(0.907)
Pseudo R-squared	0.006	0.909	0.104	0.110
Observations	1,907	1,892	1,892	1,892

Source: Authors' 2018 survey data.

Note: Entries are coefficients from a logit model. Standard errors are in parentheses. *** p < .01; ** p < .05; * p < .10, two-tail test.

statistical significance and are in the same direction.

The fourth column explores the possibility that agreeing with the president alters one's view on 3-D gun printing by including separate interactions between political ideology, party identification, education, gun ownership, gender and the experimental treatment the respondent received. This models the specific influence the tweet had on support for 3-D gun printing among relevant subgroups. We find a significant interaction between identifying as a political moderate and President Trump's tweet. Unfortunately for Mr. Trump, the effect is in the opposite direction. That is, political moderates are 0.06 points more likely to oppose President Trump's stated position after the tweet than those who took the survey before the tweet. The other coefficients fail to achieve statistical significance, suggesting that party identification, gun ownership, education, or gender does not moderate the influence between the tweet and public attitudes. Taken together, these findings strongly suggest that President Trump's tweet opposing printing 3-D guns at home did not generate support among the general public, nor did it motivate support for his position among his core constituency. It is possible that this tweet caused the US public to be less supportive of Trump's stated position.

Gender and Support for Guns

Why does the model change when gender is introduced as a control variable? There are both methodological and theoretical reasons to consider. From a theoretical perspective, we should expect presidential rhetoric on gun control to matter less for women than it does for men. Men and women think about gun control differently. When men think about gun control, political ideology and personal concerns are more influential than they are for women (Kleck 1996). In part, this is because women are generally less supportive of public policies that promote violence or force (Smith 1984), and in part it is because women are more concerned than men that policies permitting aggressive behavior might ultimately cause them harm (Eagly and Steffen 1986). Since women think about gun control differently than men do, we should treat results from an experiment involving this issue with caution. Even women who strongly support the president and have ideologically similar values and issue positions would be less likely to support policies that make it easier for people to use guns.

This logic applies to women who do not support the president. If the president takes a position on an issue with which most women will agree *a priori*, stronger support for that proposal among women hardly demonstrates rhetorical power. Table 3 in the Appendix shows that this natural experiment is unbalanced by gender. That is, 63.4% of the pre-tweet sample are female, compared to only 7.1% of the post-tweet sample. As often happens in natural experiments, the two treatment groups are not balanced on an important covariate. However, the two samples are remarkably similar on other key demographics (as displayed in Table 3). Thus, from a methodological perspective one could conclude that the natural experiment fails to achieve statistical significance once gender is included as a control variable because women are less supportive of 3-D gun printing, and the strength of this effect overpowers the effect of the natural experiment.

This argument is strengthened by the insignificant interaction between gender and the

experimental treatment. Women who took the survey prior to the tweet were just as supportive (opposed) to legalized 3-D gun printing at home as were women who took the survey after the tweet. This is precisely what we find in the cross-table. In the pre-tweet sample, 52.7% of men and 70.2% of women opposed legalized 3-D gun printing. In the post-tweet sample, 53.6% of men and 84.6% of women were opposed. Given the similarities of the two samples on the outcome variable, the most likely reason that including gender as a control variable in the models causes the effect of the natural experiment to no longer be statistically significant is that very few women participated in the survey after the experiment. Since we cannot be certain that this is the case, we are cautious about making too strong a causal claim based on this single study.

Conclusion

We address two emerging puzzles concerning presidential leadership of public opinion. First, are modern presidents able to influence public opinion in the short term? The evidence we present in this article suggests that yes, presidents can influence short-term public opinion. However, this is the first time of which we are aware that evidence points in the opposite direction of theoretical expectations. To date, most studies either show no effect of presidential rhetoric on public opinion, or they show a small shift of public opinion in the direction supportive of the president 's position. We show that President Trump had a significant, negative influence on public attitudes about his proposal towards 3-D printed guns.

Second, does presidential Twitter usage fit within the scope of the broader presidential rhetoric umbrella? In the case of 3-D gun printing, a single tweet from President Trump substantially changed the salience of the issue in the public mind for at least two days. In that sense, Twitter seems to have the same kind of agenda setting power as other forms of presidential rhetoric. At the same time, Twitter limits the number of characters a person can use to convey their message. If decades of scholarship on presidential rhetoric are correct, the forum in which a message is conveyed (Tedin et al. 2010) and the language used in that message (Tulis 1987; Heith 2015; Stuckey 1991) have a strong influence on public responses to that message. In that sense, Twitter may provide significant barriers to a president's ability to favorably shape public opinion. Presidents might not be able to adequately tell stories or create a proper policy narrative in the limited space (240 characters) provided by Twitter.

Although we have reasonable confidence that our natural experiment accurately measures the influence of President Trump's tweet on public opposition for a specific policy proposal ; we note some caveats that suggest some caution is necessary. First, this study only explored a single issue at a single point in time, with a single tweet. It is possible that other issues at other time points with greater verbiage from the president might yield different results. We note, however, that this case is consistent with other work that shows President Trump consistently failed to persuade Americans to support his agenda during his first two years in office (Edwards 2018).

Second, we make a reasonable inference about the president's intent in the tweet.

However, it is not one hundred percent clear which policy related to 3-D guns President Trump supports in his tweet. Our question asks about printing guns at home, while his tweet concerns accessing 3-D printed guns. It might be unclear whether the president supports making blueprints available for purchase, or actually allowing people to print 3-D gun components on a personal printer. Given that and estimated one-quarter or more of legal gun sales in the U.S. occur off the books since they are person-to-person transactions not conducted by a licensed dealer, the president might not be aware of the intricacies of gun sale transactions in the U.S. We see this generally as part of the weakness of using Twitter as a vehicle for public persuasion. Presidents who seek to use the limited bandwidth that Twitter allows as a means to persuade the public should recognize that tweets can be ambiguous, and therefore can have an unpredictable significant influence on public support for policy proposals but additional research is necessary to determine the extent of that influence.

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Acknowledgements

Appendix

A sample of 2,023 subjects was recruited by Survey Sampling International (SSI) to participate in a national political study from July 27-August 1, 2018. SSI has more than 17 million qualified market research participants in over 90+ countries. They build and maintain their online panel by recruiting via verified, certified sources and methods to create a vast pool of potential research respondents for clients. Respondents are incented in many ways, depending on the amount of effort required, the population, and appropriate regional customs resulting in higher panel respondent satisfaction. SSI online panel members pass through multiple levels of authentication to recruit genuinely interested panelists who will provide valuable data. The measures include digital fingerprinting, source verification, two-factor authentication, third-party verification, geo-IP control, time stamps, questionnaire quality controls, and reward claim authentication. Participants were invited via email to participate in the survey. For this survey, we asked for an over-sample of gun

owners, which required a different sampling strategy. SSI sent 102,466 invitations, 2,780 began the survey (2.7% response rate) and 2,023 (72.7%) completed the entire survey.

The demographic characteristics of this panel closely resemble that of the United States population on several important traits. Table A.1 displays the demographics of this sample compared to the American Community Survey 2014 Census estimates, MTurk samples (adapted from () and two large-scale more nationally representative survey samples: the 2016 American National Election Study and the Cooperative Congressional Election Study (Ansolabehere and Shaffner 2018). Amazon's Mechanical Turk is an online marketplace where people hire laborers for a variety of tasks. Since the mid-2000's researchers have been offering people money to participate in online survey experiments through Amazon's Mechanical Turk. Recently, scholars have spent considerable effort trying to determine the quality of the samples that are usually obtained through this service (Mullinix et al. 2015). The following table shows that this sample is more representative of the US population on key variables than samples obtained through Amazon's Mechanical Turk, and is very similar to the demographic profile of the American National Election Study and the CCES.

TABLE 3
Survey Demographics

Demographics	SSI 2018 Survey	ACS 2014 Estimates	Mechanical Turk	ANES 2016	CCES 2016
Female	53.2%	50.8%	60.1%	52.2%	51.7%
Age (mean years)	37.8	37.4 (median)	20.3	48	48
Education (% completing some college)	65%	-	-	61.7%	58%
White	71.6%	73.8%	83.5%	71.1%	72.4%
Black	7.7%	12.6%	4.4%	9.3%	12.2%
Asian	4.9%	5.0%	-	3.5%	3.5%
Latino (a)	13%	16.9%	-	10.5%	7.3%
Multi-Racial	3.9%	2.9%	-	4.1%	2.3%
Party Identification					
Democrat	32.9%	-	40.8%	33.9%	36.2%
Independent	33.4%	-	34.1%	32.1%	31.7%
Republican	33.6%	-	16.9%	28.1%	28.4%

In this section we present information about the demographic balance of those in the natural experiment treatment conditions. For the most part, the two groups are closely balanced. One clear difference is the gender gap between groups. Those who took the survey after the tweet are much more likely to be male than those who took the survey before. There are slightly more white, conservative, and Republican respondents and fewer educated respondents who took the survey after the tweet than who took it before. Ideally, these groups would be much more balanced. However, by chance, those who took the survey after the tweet are also more likely to be core supporters of President Trump.

Thus, if ever an experiment were designed to show an increase in support for Trump's position after a tweet, the group receiving the treatment in this experimental group should show the most support for the President.

TABLE 4
Experiment Balance

Demographics	Before Tweet	After Tweet
Female	63.4%	7.1%
Age (median)	33	33
Education (% completing some college)	53.4%	42.9%
White	77.9%	83.2%
Black	9.5%	6.5%
Asian	6.3%	3.8%
Latino (a)	3.3%	3.5%
Multi-Racial	3.1%	3.0%
Party Identification		
Democrat	33.4%	30.8%
Independent	34.5%	28.8%
Republican	32.1%	40.4%
Ideology (1= Very Liberal, 7= Very Conservative)	3.6 (mean)	3.7 (mean)
Gun Ownership (Percent owning gun)	46.1%	45.1%
Hours from Tweet (average)	44.2	13.2
Observations	2,047	452

To alleviate concerns that observations that are distant from the cutoff in either direction are not useful for identifying a causal effect, or that survey respondents who responded early in a survey are likely to be different from those who respond later. Also, to address concerns that over time there might be other news reporting that can affect responses that are different from and unrelated to the tweet and recognizing that the comparable units in your study are only those that are adjacent to the cutoff, that is, those who responded to the survey just prior and just after the tweet ; we ran the same analyses with data truncated to only include respondents in the "Before Tweet" treatment group that took the survey 13.2 hours before the tweet. This gives us comparable units in both treatment conditions. The regression data presented in Table 5 shows that this did not change the results from those presented in the text. In fact, the results based on the truncated data show even stronger effects from the experiment, which suggests that using units in the pre-treatment condition that are more distant from the experimental treatment reduces the size of the reported effects.

TABLE 5
Regression Results with Truncated Data

	(1)	(2)	(3)	(4)
Gun Tweet: After Tweet	0.660***	0.677***	0.209	-2.592
	(0.144)	(0.163)	(0.191)	(2.076)
Ideology		-0.059	-0.047	-0.109
		(0.052)	(0.052)	(0.080)
Education		-0.071	-0.083	-0.185**
		(0.058)	(0.059)	(0.081)
Gun owner		-0.437***	-0.408***	-0.600***
		(0.088)	(0.088)	(0.128)
Age		-0.036***	-0.037***	-0.038***
		(0.006)	(0.006)	(0.006)
Party Identification		0.417***	0.394***	0.536***
		(0.108)	(0.109)	(0.161)
Income		0.028	0.011	0.023
		(0.042)	(0.043)	(0.044)
Evangelical Christian		-0.010	-0.015	-0.064
		(0.194)	(0.198)	(0.203)
Race		-0.020	-0.026	-0.025
		(0.075)	(0.076)	(0.078)
Gender			-0.867***	-0.740***
			(0.197)	(0.229)
Gun Tweet : After Tweet * Ideology				0.107
				(0.102)
Gun Tweet : After Tweet * Party Identification				-0.254
				(0.215)
Gun Tweet : After Tweet * Gun Owner				0.402**
				(0.174)
Gun Tweet : After Tweet * Education				0.000
				(0.105)
Gun Tweet : After Tweet * Gender				-0.832
				(0.614)
Constant	-0.896***	1.446	3.482**	5.051***
	(0.098)	(1.257)	(1.372)	(1.732)
Pseudo R-squared	0.018	0.117	0.134	0.144
Observations	874	871	871	871

Notes: Authors' 2018 survey data from a nationally representative sample of American adults. Data are truncated to only include respondents from the pre-test whose distance from the tweet is equal to those in the post-test. Entries are coefficients from a logit model. Robust standard errors in parentheses *** $p<0.01$, ** $p<0.05$, * $p<0.1$, two-tail test.