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Framing the Youth-Led Movement for Gun Violence Prevention: How News Coverage Impacts Efficacy in Generation Z, Millennials, and Gen X

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Abstract

The American youth-led movement for gun violence prevention (YMGVP) that emerged after the 2018 shooting at Marjory Stoneman Douglas High School in Parkland, Florida, has received tremendous media attention. To assess the potential effect of this coverage on readers' efficacy, we conduct a two-wave population-based survey experiment on members of Generation Z, the Millennial generation, and Generation X that frames the movement as a success or failure in terms of achieving its political goals. Results show that emphasis framing impacts readers' perceptions of the movement's likely success in line with the manipulation. Furthermore, framing the YMGVP as unsuccessful suppresses readers' own external and collective efficacy regardless of generation. Subjects' support for gun control moderates the effect of treatment, such that individuals low in support express a decline in internal and information efficacy when presented with the success framing. Thus, we extend the effects of news framing beyond attitudes toward the subjects of reporting to readers' own perceptions of themselves as capable of political action.

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Mass shootings are an epidemic in the United States, where they occur more frequently than any other country in the world (Fox 2019). Since the April 1999 massacre at Columbine High School in Littleton, CO, more than 236,000 American students have witnessed school shooting violence (Cox et al. 2018). Despite these near-daily tragedies, the U.S. Congress has remained unable to pass a modest, bipartisan bill to close gun sale loopholes (Alter 2018). However, survivors of the 2018 shooting at Marjory Stoneman Douglas High School in Parkland, Florida, have become visible leaders of a national youth-led movement for gun violence prevention (YMGVP) that has called for universal background checks, digitized gun-ownership records, and renewal of the assault-weapons ban, and is organizing young Americans to register and vote for candidates who share their views.

The movement has received ample media attention in the United States and elsewhere. In this paper, we explore the effect of this coverage on readers, manipulating whether the movement is framed as a success or failure. Protest coverage is often framed negatively, following the "protest paradigm" (McLeod and Detenber 1999; McLeod and Hertog 1992). Prior work demonstrates that such framing can depress reader support for the movement and attitudes about their likely success (e.g., McLeod 1995; Shoemaker 1982). Furthermore, framing social movements as successful is thought to inspire others to join (Snow et al. 1986). This study utilizes a survey experiment to measure the effects of framings the YMGVP as a success or failure on perceptions of the movement's likely outcomes, as well as subjects' internal, external, information, and collective efficacy. We also consider differential effects based on respondents' generational cohort, and in particular on members of Generation Z, who came of age against the backdrop of such tragedies and have been described as the "mass shooting generation" (Alter 2018).

Results show that emphasis framing impacts subjects' perceptions of the likely success of the YMGVP in line with the direction of the framing, and that negative framing depresses external political efficacy and collective efficacy relative to positive and neutral framing. Efficacy effects are consistent across generational cohorts, although Generation Z is more optimistic about the movement and higher in collective efficacy around changing gun policy. We also find that subjects' attitude toward gun control moderates the effect of treatment, such that individuals low in gun control support see their internal and informational efficacy reduced in the positive condition. Results demonstrate that news

framing has the potential to impact not only attitudes toward the subjects of reporting but also readers' own perceived ability to change political outcomes.

Emphasis Framing

Framing is a core theoretical concept in the study of communication, although there is substantial disagreement about what it means (e.g., Cacciatore et al. 2016; Druckman 2001, 2011; Liu and Scheufele 2016). Framing can be understood as the process by which news media select issues for coverage and thus make them salient (Entman 1993). Other definitions connect framing to journalistic practices, arguing that frames serve an essential function in the production of news narratives (Gamson and Modigliani 1987; McLeod and Detenber 1999; Tuchman 1978). Recent scholarship has urged the field to distinguish instead between equivalence (or valence) framing and emphasis framing (Cacciatore et al. 2016). Equivalence framing, rooted in the field of psychology, compares logically identical statements (e.g., 95 percent success rate vs. 5 percent failure rate) to determine how the presentation of facts impacts reader decision making and attitudes.[1] However, equivalence framing is "not the most widespread in the policy discourse and political news reaching most citizens" (Slothuus 2008: 3), as, in practice, political actors tend to employ issue framing that focus on specific aspects of policy problems. Conversely, emphasis framing—which comprises the majority of framing studies in communication (Borah 2013; Liu and Scheufele 2016)—comes from the sociological tradition, "manipulating the content of communication" (Cacciatore et al. 2016: 8) such that the "dimensions of evaluation are substantively distinct" (Druckman 2011: 5).[2]

Emphasis framing, which we utilize in this paper, "looks into how a story is told" (Liu and Scheufele 2016: 7), focusing on "different potentially relevant considerations" (Druckman 2001: 230), often taking the form of news narratives. These so-called frames in communication (Druckman 2001) are not limited to presenting identical information, but focus instead on a particular aspect of a problem (Slothuus 2008). Scholars critical of this approach argue that it is difficult to distinguish emphasis framing from agenda setting and priming (e.g., Cacciatore et al. 2016; Liu and Scheufele 2016), yet whereas in agenda setting the media tells people what to think about, emphasis framing nevertheless tells people how to think about it, setting their so-called "frame of mind" (Druckman 2001, 2011; Scheufele and Tewksbury 2007).

For emphasis frames to work, scholars argue, they must be accessible: the consideration presented by the frame must be sufficiently relevant to the reader (Chong and Druckman 2007; Druckman 2011). In this model, "frames change opinion . . . through a process of making a person's pre-existing considerations more accessible so that these considerations will be more likely to feed into the opinion formation process" (Zaller 1992: 48). Essentially, accessibility enables

readers to connect frames to their own preexisting opinions (Chong and Druckman 2007). Thus, emphasis frames should be more effective among individuals who have an opinion on the topic that is aligned with the frame (Cacciatore et al. 2016; Druckman 2011).

Emphasis Framing and Social Movements

Emphasis framing is considered to be a key tenet in understanding social movements (Benford and Snow 2000). Media framing of mass movements of the 1960s marked some of the earliest framing studies in communication (e.g., Tuchman 1978). Within framing studies of social movements, several patterns have emerged, namely, the protest paradigm and collective action frame. Introduced by Chan and Lee (1984), the protest paradigm argues that social protests are covered negatively by the media due to journalistic structures and media systems that support the status quo (McLeod and Detenber 1999; McLeod and Hertog 1992). Collective action frames stem from movement activists and attempt to mobilize individuals to join their cause; the press is often hostile to these constructions as well (Noakes and Johnston 2005). Both approaches describe the media's "particular way of packaging events and issues into a story" (McLeod and Detenber 1999: 6) and illustrate how movements often have little control over how they are framed by the media, despite whatever frames they may attempt to use themselves (Benford and Snow 2000).

Media framing of social movements plays a key role in movement outcomes, in terms of shaping public perceptions of such groups and—in particular—their likelihood of success or failure (McLeod and Detenber 1999; Shoemaker 1982). Prior experimental work finds a causal relationship between emphasis framing and perceptions of a movement: negative coverage decreases attitudes toward the group relative to positive coverage (Shoemaker 1982), as well as to balanced coverage (McLeod 1995). Framing a movement as low in status quo support also reduces reader support for protestors (McLeod and Detenber 1999). Scholars theorize that positive coverage not only increases salience but also legitimizes protestors, making it more likely that the movement can gain public traction and influence political officials (Gamson and Wolfsfeld 1993). Suh (2001: 444) describes this as "success framing," in which "goal achievement [is credited to] collective action." This framing is key to whether news coverage inspires readers to engage with the movement: individuals are more likely to be mobilized when they feel the opportunity is favorable for success (Tarrow 1994). Given this prior research, we expect that the framing manipulation will impact perceptions of the movement's likely success in line with the framing.

Hypothesis 1 (H1): Article framing (positive, neutral, negative) will impact subjects' perceptions of the likely success of the YMGVP relative to a placebo, in the direction of the framing.

Political and Collective Efficacy and Framing

Efficacy broadly refers to an individual's perceived ability to produce a desired result; political efficacy measures this capacity in the political arena. Political efficacy is traditionally measured along two dimensions, internal and external (e.g., Acock et al. 1985; Finkel 1985). External efficacy relates to "beliefs about the responsiveness of governmental authorities and institutions to citizens' demands" (Niemi et al. 1991: 1407); internal efficacy is manifested in "beliefs about one's own competence to understand, and to participate effectively in, politics." The political information efficacy construct is closely aligned with internal efficacy, and measures individuals' confidence in their knowledge (Kaid et al. 2007). Each measure is widely known to be positively associated with a range of political and participatory outcomes.

Collective efficacy measures the shared beliefs of a group in their ability to produce social or political change and accomplish a collective goal (Bandura 1997). However, Bandura's definition focuses on the "shared beliefs" of individuals and is a group-level, rather than individual, attribute. Lee (2005, 299) argues the importance of treating collective efficacy as an individual-level variable and acknowledges "individuals belonging to the same group may have different beliefs about the group's capability." As the groups in this study are generational cohorts, it is likely that members will have different attitudes toward their efforts as a collective political actor. Participation in collective action is more likely when collective endeavors are perceived to be likely to accomplish the goal (Finkel and Muller 1998).

Prior work connects framing to various forms of efficacy, of both movement adherents and those who read about their efforts (e.g., Einwohner 2002; McLeod and Detenber 1999; Snow et al. 1986). Einwohner (2002: 511) argues that "most empirical analyses of efficacy and efficacy-related framing activities have used these concepts to explain individuals' initial decision to participate in protest," and that perceived efficacy is a predictor of engagement in collective action. Activists, in turn, emphasize belief in the efficacy of their actions to inspire others to join; such belief amplification is among the main forms of frame amplification in the movement framing literature (Snow et al. 1986: 470). The inverse is true as well: individuals are more likely to engage with such movements when they think their efforts will be effective (Tarrow 1994). Furthermore, framing a movement as low in status quo support depresses readers' estimates of the protestors' effectiveness, as well as public support for the movement (McLeod and Detenber 1999).

The above work establishes a link between framing and efficacy: activists present themselves as efficacious to mobilize others to join their movement, and individuals are more likely to join when they believe that they too will be effective. This process is mediated through the press, which decides whether and how to cover activist movements; statements made by the activists themselves

about their effectiveness are efforts to shape such coverage. Thus, it stands to reason that news coverage framing a movement as capable of making change will impact whether readers perceive that they, too, can make an impact. We extend prior work by considering whether exposure to emphasis-framed coverage of a social movement—here, the YMGVP—impacts whether readers view themselves as efficacious, along the four dimensions of efficacy discussed above. We frame the YMGVP as successful (positive), neither a success nor a failure (neutral), or a failure (negative); we utilize a placebo control group to determine the effect of exposure to any coverage of the movement. We measure changes in subjects' internal, information, external, and collective efficacy.

Considering internal political efficacy, or an individual's perceived capacity to understand and participate in politics, we expect that in line with prior theoretical work (e.g., Tarrow 1994), telling individuals that the youths are successful will make readers perceive themselves as capable of action; conversely, telling individuals that the youths will fail will make readers perceive themselves as less capable. Although similar, political information efficacy measures confidence in information received; we do not manipulate information congruence about the movement within the study (individuals receive three positive, three neutral, or three negative articles); thus, we do not expect a difference based on framing condition. External political efficacy measures government responsiveness; we expect that framing the youths as capable of enacting changes will increase readers' perception that government is responsive, and vice versa for the failure condition. Collective efficacy measures individuals' perceived group-level ability to enact change on the specific issue of gun policy; showing the youths as effective or ineffective will increase or decrease collective efficacy, respectively.

Hypothesis 2 (H2): The article framing will have (a) a directional effect on internal efficacy, (b) no impact on information efficacy, (c) a directional impact on external efficacy, and (d) a directional impact on collective efficacy.

However, Americans remain divided on the issue of gun control (Pew Research Center 2018). Gun owners and nonowners are split on policy issues such as banning assault weapons or high capacity magazines, or allowing the concealed carry of handguns in public (Parker et al. 2017). Accessibility theory expects that frames should only manifest among those whose mental schema matches the framing (Cacciatore et al. 2016; Chong and Druckman 2007). Subjects' preexisting support for gun control policies should impact how they respond to the framing, with individuals high in support reacting favorably to the positive framing and unfavorably to the negative framing, and individuals low in support reacting unfavorably to the positive framing and favorably to the negative framing.

Hypothesis 3 (H3): Gun control attitudes will moderate the effect of framing on (a) internal, (b) informational, (c) external, and (d) collective efficacy.

Effects on the "Mass Shooting Generation"

Generational cohorts offer researchers the ability to measure how societal conditions and formative life experiences combine with life-cycle effects to shape individuals' attitudes and behaviors (Dimock 2019). Specifically, we consider the effects on America's Generation X (born between 1965 and 1980), Millennials (born between 1981 and 1996), and Generation Z (born after 1997; Dimock 2019). Generation Z began two years before the mass shooting at Columbine High School and comprises the self-labeled "mass shooting generation" (Alter 2018) that spearheaded the YMGVP in the wake of the Parkland shooting. In turning to activism, the Parkland survivors have sought to "[reframe] the larger gun debate along generational lines" (Alter 2018, para. 8). For member of Generation Z—and to a degree, younger members of the Millennial generation—seeing their own cohorts depicted in the news stories as successful or failing may have differential impacts compared with members of Generation X. Furthermore, younger generations tend to exhibit lower levels of political engagement than their forbearers (Delli Carpini 2000). Thus, while we expect to see lower levels of efficacy among younger cohorts generally, we specifically explore whether generational cohort moderates the effect of treatment, to determine whether the younger cohorts are differentially affected by news articles depicting members of their generations.

Research Question 1 (RQ1): Will generational cohort (a) predict or (b) moderate the effect of framing on subjects' perceptions of the likely success of the YMGVP?
Research Question 2 (RQ2): Does generational cohort moderate the effect of framing on (a) internal, (b) information, (c) external, or (d) collective efficacy?

Method

This study employs a two-wave, placebo-controlled, population-based survey experiment conducted in the United States.[3] Population-based survey experiments utilize nationally representative samples, with subjects randomly assigned into treatment conditions. This method is thought to offer higher external validity relative to a convenience sample, offering greater generalizability. The sample was chosen and stratified on the basis of generation to specifically explore the effects of framing the YMGVP on three cohorts: Generation Z, Millennials, and Generation X.

Stimuli Development and Pretest

To heighten external validity, news articles about the YMGVP published in the first eight months of 2018 were adapted for this study, with the headlines and final sentence changed to manipulate the framing of the YMGVP, portraying the movement in a positive/successful, neutral, or negative/failing light. An additional placebo condition utilized three articles related to transportation. Details about stimuli development are in the Supplementary Information file. Pretests were conducted on Mechanical Turk (MTurk) to determine whether the article framing was successful in shaping portrayals of the YMGVP and subjects' perceptions of the movement's likely success. The stimuli generated a significant difference by group in terms of portrayal, $F(5, 662) = 20.38$, $p < .001$: subjects in the negative condition found the articles more unfavorable to the YMGVP than those in the positive and neutral conditions. The framing also changed perceptions of the group's likely success, $F(3, 783) = 56.63$, $p < .001$, with negative frames generating lower success expectations than the placebo, neutral, and positive conditions, and neutral and positive frames higher than the placebo.

Main Study Measures

Established measures of efficacy and generation were used in this study, with additional measures developed to assess the effects of the framed articles on perceptions of the YMGVP. Survey items are available in the Supplementary Information file.

Dependent variables. Perceived success of the YMGVP was measured with a five-item scale asking subjects "how successful will youth-led protest movements be in terms of" changing federal gun laws, changing state gun laws, registering young people to vote in 2018, motivating young people to vote in 2018, and electing candidates who share their views on gun laws; responses were recorded on feeling thermometers with values ranging from –100 to 100 and then averaged ($M = 19.19$, $SD = 46.95$, $\alpha = .94$).

Efficacy measures utilized a 5-point *strongly agree*/*disagree* scale with 5 representing high efficacy in both waves; internal validity was assessed with Cronbach's alpha, after which items were averaged to create a composite measure. Internal efficacy was measured with a four-item scale adapted from the American National Election Studies (ANES) and the General Social Survey (GSS): Wave 1 ($M = 3.36$, $SD = 0.86$, $\alpha = .77$), Wave 2 ($M = 3.35$, $SD = 0.82$, $\alpha = .75$). Informational efficacy was measured with a four-item scale from Kaid et al. (2007): Wave 1 ($M = 3.56$, $SD = 0.85$, $\alpha = .79$), Wave 2 ($M = 3.56$, $SD = 0.81$, $\alpha = .77$). External efficacy used a two-item scale adapted from the ANES and GSS: Wave 1 ($M = 2.60$, $SD = 0.95$, $\alpha = .55$), Wave 2 ($M = 2.66$,

$SD = 0.93$, $\alpha = .59$).[4] Collective efficacy was measured with a five-item scale from Bandura (1997) modified to reflect the issue of gun policy: Wave 1 ($M = 3.51$, $SD = 0.73$, $\alpha = .79$), Wave 2 ($M = 3.44$, $SD = 0.74$, $\alpha = .81$).

Generation. Cohort was determined by the subject's self-reported birth year and mapped onto the distinctions established by Pew Research Center (Dimock 2019) for Generation X (1965–1980), Millennials (1981–1996), and Generation Z (1997 and later, though our sample only includes adults aged 18 and up).

Control variables. To further isolate the effect of treatment, control variables were added to models estimating changes in efficacy. Exposure to the YMGVP is a ten-item index designed for this study to determine whether subjects had heard about the movement through the media or interpersonal contact, with items added to form a scale ($M = 3.16$, $SD = 2.79$, $\alpha = .83$). Party affiliation was measured on a 7-point scale from *Strong Democrat* to *Strong Republican* following the ANES ($M = 3.51$, $SD = 2.04$). News trust was measured using a modified version of Kiousis's (2001) media credibility scale ($M = 4.52$, $SD = 1.29$, $\alpha = .88$), with items averaged. Gun control attitude was assessed with a six-item measure designed for this study and averaged ($M = 3.66$, $SD = 0.83$, $\alpha = .77$).

Procedure

Subjects were recruited by Survey Sampling International (SSI, now Dynata). Wave 1 ran from August 13 to 21, 2018, and collected 1,983 completed responses. After subjects consented, they completed a survey that measured the four efficacy variables, control variables (partisanship, news trust, attitudes toward gun control, exposure to the YMGVP), and demographics. One week after participants completed Wave 1, they were invited to take Wave 2; 1,141 subjects did so between August 21 and September 9, 2018, for a recontact rate of 57.54 percent.[5] A chi-square test of independence found Generation Z had a significantly lower recontact rate, $\chi^2(2, N = 1983) = 112.05$, $p < .001$, which the survey firm attributed to a smaller population of cohort members aged 18 and up. Each cohort was sent a separate link to the second wave of the survey to ensure block-randomization at the generational level into one of the four conditions despite attrition between waves.[6] A chi-square test of independence for assignment to condition by generation was not significant, $\chi^2(6, N = 1141) = 2.26$, $p = .89$.

After subjects consented to Wave 2, they were provided instructions, including the requirement that they spend at least thirty seconds on each article page before advancing to the next, as an inducement to read. Although this does present a threat to external validity, the goal of the research was to determine whether effects existed if subjects read the articles.[7] After completing their series of articles, subjects in the treatment conditions assessed the YMGVP's likely

success. Subjects were then given a post-test battery consisting of the four efficacy measures. After completing the survey experiment, subjects were debriefed and provided a link to articles modified for the study such that they could explore coverage of the movement.

Participants

Subjects were invited to take the survey based on membership in Generation Z ($n = 218$), the Millennial generation ($n = 451$), or Generation X ($n = 472$). The 1,141 individuals who completed both waves had an average age of 34.83 ($SD = 10.78$, range = 18–53); 63.98 percent were female, 35.41 percent male, with seven respondents choosing other or not to answer. In terms of race, 73.18 percent of respondents stated that they were White, 11.04 percent Black, 7.89 percent Asian-American, 1.4 percent American-Indian or Hawaiian, and 6.4 percent other or multiracial. In addition, 9.81 percent of respondents stated their ethnicity to be Hispanic. In terms of education, 18.76 percent had a high school diploma, general educational development (GED), or less; 26.73 percent had some college; 11.31 percent held an associate's degree; 28.31 percent completed a bachelor's degree; 10.17 percent held a master's degree; and 4.73 percent held a professional degree or doctorate. Additional robustness checks to affirm random assignment were nonsignificant for age, $F(3, 1137) = 0.28$, $p = .84$, and sex, $\chi^2(6, N = 1{,}141) = 2.04$, $p = .92$.

Results

A series of analyses of variance (ANOVAs) were performed to determine whether average levels of response variables differed by group, after a series of Levene's tests found the assumption of homogeneity of variance to be supported.[8] All ANOVAs were conducted in R using the linear modeling method; the partial eta squared is reported for each variable to enable comparison across models and dependent variables. Post hoc pairwise comparisons were computed using the emmeans package in R using the multivariate t distribution adjustment, which adjusts the family-wise error rate to .05 while remaining robust to uneven sample sizes.

Effect of Article Framing on Perceptions of Movement Success

H1 anticipated differential predictions about the likely success of the YMGVP based on treatment condition. An omnibus ANOVA was significant for treatment group, $F(3, 1135) = 73.60$, $p < .001$, $\eta_p^2 = .163$, supporting H1; post hoc comparisons determined that treatment groups had significantly different attitudes when compared with the placebo condition, aligned with the direction of the frame. Attitudes in the negative condition were also significantly lower than those in the neutral and positive conditions. There was no significant difference

between neutral and positive, although the average perception of the movement was higher in the positive condition. Means and 95 percent confidence intervals for treatment groups are plotted in Figure 1.

Generational cohort was also a significant predictor of subjects' perception of the YMGVP's likely success, $F(2, 1135) = 8.66$, $p < .001$, $\eta_p^2 = .015$, offering support for RQ1a, although effects of generation were quite small. A post hoc test found Generation Z's perception of the likely success of the movement to be higher than the older two cohorts (Millennials, $p < .05$; Gen X, $p < .001$), and Millennials' perception marginally higher than Gen X ($p = .08$). However, a main interaction effect between treatment and cohort was not significant, $F(6, 1129) = 1.14$, $p = .34$, providing no support for RQ1b. Means and 95 percent confidence intervals for cohort are plotted in Figure 1.

Effect of Article Framing on Efficacy

A series of ANOVAs were performed to determine whether the article framing had an effect on subjects' internal, information, external, and collective efficacy, and whether generation moderated those effects. Models included the following controls: partisanship, gun control support, exposure to the youth protest movement, and news trust, as well as subjects' Wave 1 efficacy measures; the latter follows the method in Bock (1975).[9] Covariate-adjusted means and 95 percent confidence intervals for efficacy outcomes by group are presented in Figure 2.

Assignment to treatment group generated a marginally significant and small impact on internal political efficacy, $F(3, 1129) = 2.60$, $p = .05$, $\eta_p^2 = .007$; however, pairwise comparisons were not significant. The results provide minimal support for H2a: treatment contributes only marginally to Wave 2 measures, and there are no meaningful differences between treatment groups. Generational cohort was significant, $F(2, 1129) = 6.26$, $p < .01$, $\eta_p^2 = .011$, with Generation X expressing higher efficacy than Gen Z ($p < .01$) and marginally higher than Millennials ($p = .08$). However, there was no significant moderating

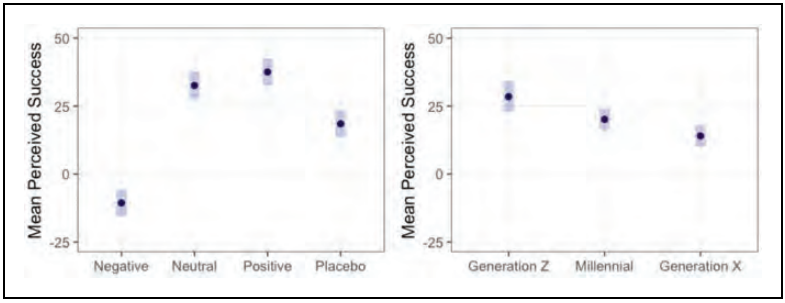

Figure 1. Mean perceived effects of the YMGVP by condition and generational cohort.
Note. YMGVP = youth-led movement for gun violence prevention.

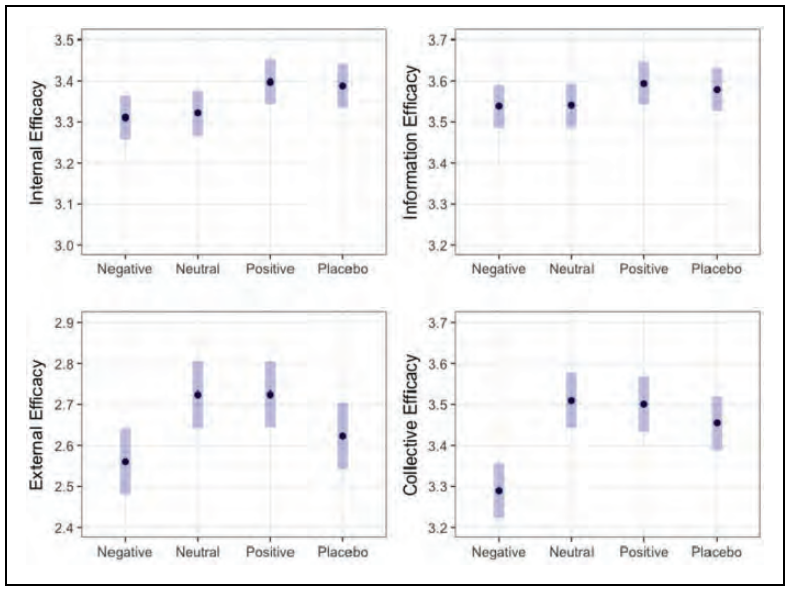

Figure 2. Efficacy outcomes by condition, covariate-adjusted means.

effect of generation on treatment in terms of internal efficacy, $F(6, 1123) = 1.43$, $p = .20$, ergo RQ2a can be answered in the negative.

There was no significant effect on political information efficacy, affirming our anticipated lack of difference in H2b. Given our anticipation of null results, we perform an equivalence test using the "test" function in emmeans, and determine that with a minimum effect size of 0.10, or a 2.5 percent change in efficacy, all groups are not significantly different from the placebo. The equivalence test mirrors the nonsignificant results of an ANOVA, $F(3, 1129) = 1.09$, $p = .35$, $\eta_p^2 = .003$. Significant differences by generational cohort exist, $F(2, 1129) = 3.89$, $p < .05$, $\eta_p^2 = .007$, with Generation X reporting significantly higher informational efficacy than Generation Z ($p < .05$). However, there was no significant moderating effect of generation on treatment in terms of informational efficacy, $F(6, 1123) = 1.09$, $p = .35$, providing a negative answer to RQ2b.

Turning to external political efficacy, we find a significant effect of treatment, $F(3, 1129) = 3.82$, $p < .01$, $\eta_p^2 = .010$; pairwise comparisons show that relative to the negative condition, the positive ($p < .05$) and neutral ($p < .05$) conditions generated higher levels of external efficacy, providing partial support for H2c. However, there were no significant differences between the treatment groups and placebo. Cohort was only marginally significant, $F(2, 1129) = 2.78$, $p = .06$, $\eta_p^2 = .005$, with no significant or marginal pairwise comparisons, and

the interaction between generation and treatment was also nonsignificant, $F(6, 1123) = 1.48$, $p = .18$; thus, we have a negative answer for RQ2c.

For collective efficacy, we find that assignment to treatment is also significant, $F(3, 1129) = 9.10$, $p < .001$, $\eta_p^2 = .024$; pairwise comparisons found the negative condition to produce significantly lower estimates of collective efficacy relative to the positive ($p < .001$), neutral ($p < .001$), and placebo ($p < .01$) conditions. There was no significant difference between the placebo, positive, and neutral conditions, providing partial support for H2d. We also find significant differences based on cohort, $F(2, 1129) = 5.33$, $p < .01$, $\eta_p^2 = .009$, although effects are small; Generation X has lower collective efficacy than Generation Z ($p < .01$) and marginally lower than Millennials ($p = .09$). Therefore, despite being labeled as the "mass shooting generation," Generation Z has the highest collective efficacy around the issue of preventing gun violence. However, there is no moderating effect of generation on treatment in terms of collective efficacy, $F(6, 1123) = 1.46$, $p = .19$, so we answer RQ2d in the negative.

The Moderating Effect of Gun Control Attitudes

Finally, we consider whether subjects' attitudes toward gun control moderate treatment, following theoretical expectations about accessibility and emphasis framing. We follow the approach in Hainmueller et al. (2019) and use their interflex R package to estimate multiplicative interaction models between a categorical treatment variable and continuous moderating variable (gun control attitudes, range = 1–5) in which the continuous variable is heavily skewed, here toward support for gun control ($M = 3.66$, $SD = 0.83$, interquartile range [IQR] = 3.00–4.33).[10] Results are plotted in Figure 3, depicting change in efficacy by treatment group compared with the placebo condition.

We compare the impact of exposure to treatment among individuals in each treatment group based on their gun control support. For internal efficacy, we find a significant moderating effect of gun control attitudes on treatment. In the positive condition, individuals low in gun control support expressed a decline in internal efficacy relative to those with medium ($p = .06$) and high ($p < .001$) support. Telling individuals low in gun control support that the YMGVP will be successful decreased their perceived capacity to understand and participate in politics relative to individuals with medium and high support. Differences are also significant relative to low- and high-support individuals in the placebo condition. Curiously, in the negative condition, individuals low in gun control support again expressed a decline in internal efficacy relative to those high in support ($p < .05$), and relative to low-support individuals in the placebo group, suggesting that even presenting the youths as unsuccessful does not increase gun control opponents' perceived ability to participate. Furthermore, there is no moderating effect in the neutral condition, suggesting that directional framing

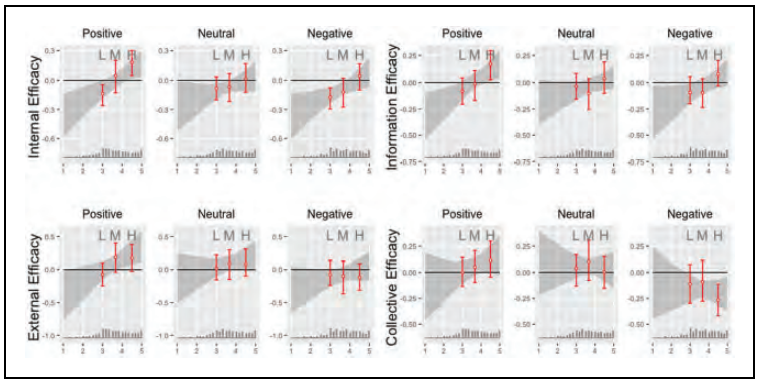

Figure 3. Moderating effect of gun control attitudes on treatment.

(positive or negative) is key for activating the moderating effect of gun control attitudes (support or oppose). We have partial support for H3a.

We find similar results for information efficacy: in the positive condition, we find a decrease among individuals low in gun control support relative to those with medium ($p = .08$) and high ($p < .01$) support; however, only high-support individuals see an increase relative to those in the placebo group. Again, telling individuals low in gun control support that the YMGVP will be successful depresses their information efficacy relative to those with higher support. Although we also find a significant difference in the negative condition between those low and high ($p < .05$), we note that (a) the overall moderating relationship is nonlinear and must be interpreted with caution, and (b) there is no difference versus the placebo. Again, there is no moderating effect in the neutral condition, providing only partial support for H3b. Turning to external efficacy, we find marginally significant interactions in the positive condition, with low gun control support exhibiting lower external efficacy relative to medium- ($p = .06$) and high-support ($p = .09$) individuals, although results do not follow the anticipated linear trend and do not differ from the placebo, providing no support for H3c. We find no significant moderating effect of gun control attitudes on collective efficacy, providing no support for H3d; however, we note that the negative framing depressed collective efficacy on individuals high in support for gun control relative to those in the placebo group.

Discussion

The effects of news framing go beyond shaping readers' attitudes toward the subjects of reporting: negative emphasis framing of a social movement decreases readers' perceptions of government as responsive to them, and themselves capable of producing collective change around a policy issue. We consider the

specific case of the U.S.-based YMGVP and the effects of emphasis-framed news coverage about the movement on readers. Negative framing depresses external efficacy relative to the positive and neutral framing, and depresses collective efficacy around gun policy relative to the positive, neutral, and placebo conditions. There are no moderating effects of generation, suggesting that the impacts of such framing are no greater on Generation Z, the "mass shooting generation," than they are on Millennials or Generation X. Subjects' attitudes toward gun control moderate the effect of treatment on internal and informational efficacy, such that individuals lower in gun control support see a decline in internal and informational efficacy relative to those higher in it, in the positive and negative (internal only) conditions.

Our work contributes to theory by extending the effects of framing to readers' perceptions of themselves. Findings suggest that negative framing of social movements as unsuccessful—which is common in the media—depresses readers' perceptions that government is responsive to them, and that they are capable of making change on the policy issue in question. Essentially, the frame provides a heuristic for readers' own perceived capacities for action: when they are presented with the "failure" frame in which the youths are unable to influence outcomes, subjects perceive that if the activists cannot make change, then they cannot make change either. Conversely, when subjects are presented with the "success" frame in which the youths are driving political outcomes, they perceive the youths as capable, and thus themselves as capable of collective action as well.

While we find no main effects on internal or information efficacy, we find a moderating effect of readers' gun control attitudes on treatment, such that individuals lower in gun control support express a decline in both measures when exposed to news coverage portraying the youths as successful. In line with accessibility theory (e.g., Chong and Druckman 2007), individuals' preexisting opinions on gun control moderates whether they are susceptible to the frame, but only in the positive and negative conditions. This suggests that the treatments may have also provided information about the likely outcome of movement, which in turn activated subjects' desires for an outcome congruent with their views. Leeper and Slothuus (2015) argue that it may be the information itself that is driving opinion change, rather than the framing itself; the curious findings regarding the decline in internal efficacy among low-support individuals in the negative condition may support this as well. There is no moderating effect of gun control attitudes on external or collective efficacy, likely because these are more outwardly focused measures that involve the work of others, compared with the more knowledge-oriented measures of internal and information efficacy and how an individual perceives themselves as capable.

We also note a surprising lack of generational effects: the treatment had no greater impact on members of Generation Z than Millennials or Generation X

even though Generation Z is considered the "mass shooting generation." There is widespread concern about the effects of growing up against a backdrop of omnipresent mass shootings and school violence, yet we find Generation Z to be more optimistic about the YMGVP's likely success and to express higher collective efficacy on the issue of preventing gun violence. At least in terms of their perceptions of their fellow youth activists, and, more importantly, their own ability to bring about change, we see reasons to be optimistic about their future.

The negative framing produced significant negative effects, in line with prior framing studies (e.g., McLeod 1995; McLeod and Detenber 1999; Shoemaker 1982). Notably, there were minimal differences between the neutral and positive conditions: both generated statistically identical effects on perceptions of the movement, external efficacy, and collective efficacy. The neutral and positive conditions also generated higher perceptions of movement success relative to the placebo. Thus, simply reporting about the existence of the YMGVP has the same effect on these outcomes as actively praising the activists. However, the neutral and positive conditions had no impact on external or collective efficacy relative to the placebo, suggesting that only negative framing can change these outcomes relative to no exposure. Relative to the placebo, positive framing had a positive impact on internal and information efficacy, but only among those high in gun control support—in short, only among those most likely to receive the message favorably.

Limitations and Next Steps

Our study only explored framing in the form of brief newspaper articles, and not other forms of communication. If these effects are specific to reading the news articles, then we would only expect to see them among individuals who attend to news. The manipulations exposed participants to consistent framing conditions (all positive, neutral, or negative); the media environment is ripe with competing frames (e.g., Chong and Druckman 2007) and we recommend that future researchers include a manipulation with competing frames (although media selection practices may be resulting in more narrow ranges of competing frames among highly selective audiences) to reflect the media environment more completely.

Scholars who prefer equivalence framing and disavow emphasis framing might suggest that the effects here are derived from priming and agenda setting, rather than framing the movement as successful or unsuccessful. We accept this critique, but note that the major takeaway—negative news coverage of the YMGVP depresses readers' external and collective efficacy—holds true regardless. Therefore, the real-world consequences of negative news coverage extend beyond perceptions of the actors portrayed to the readers themselves. We also note that toward the end of Wave 2, a mass shooting occurred in Jacksonville, Florida, although media coverage of the event was somewhat limited due to the

concurrent death of Senator John McCain. Awareness of the shooting may have changed subjects' responses. Unfortunately, given that 340 mass shootings occurred in the United States in 2018, it was tragically probable that such an event would occur during data collection (Gun Violence Archive 2019).

Finally, although this study contends with the American epidemic of omnipresent mass shootings, future work should consider whether emphasis framing impacts political and collective efficacy when other global protest movements are framed as a success or failure. Conducting similar studies in other countries while protests and social movements are ongoing (e.g., Hong Kong or Chile at the time of writing) will provide an opportunity to manipulate perceptions of a movement's likely success with framing before the actual outcome is known. Results will demonstrate whether the suppressive effect of negative framing on efficacy is widespread, or conditional to Americans when addressing the movement for gun violence prevention.

Conclusion

Newspaper article framing can have real-world impacts on individuals' perceptions that government is responsive to them, and that they are capable of effecting change. This experiment demonstrates that framed media portrayals of the YMGVP not only impact how the movement is viewed, but also whether readers believe themselves to have external and collective efficacy. Positive framing has an impact on internal efficacy, but the effect is moderated by subjects' attitudes toward gun control, such that those who favor it saw their efficacy increase relative to those who oppose it.

Main effects were concentrated in the negative framing condition: it decreased perceptions of success of the movement relative to the neutral, positive, and placebo conditions, decreased external efficacy relative to the positive and neutral conditions, and decreased collective efficacy relative to all conditions, including the placebo. From these findings, we extrapolate that the media's tendency to cover social movements in a negative manner has broader consequences in terms of how readers view themselves as effective. However, throughout the study, the neutral and positive conditions generated identical effects regarding perceptions of the movement's success and impact on efficacy. These findings suggest that simply reporting on activism without framing it as a failure can prevent such negative consequences on readers.

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Supplemental Material

Supplemental material for this article is available online.

Notes

1. Equivalence framing may also be referred to as gain versus loss framing (Tversky and Kahneman 1981).
2. Other categories of framing include strategic versus issue and thematic versus episodic.
3. This study was reviewed and approved by the Virginia Tech Institutional Review Board (IRB).
4. Although this measure did not reach the conventional .70, the same issue occurred with a separate nationally representative sample collected via Survey Sampling International (SSI) by one of the authors; this suggests that there may be a problem with the external efficacy construct.
5. In both waves of the study, subjects who failed at least two of six attention checks were removed.
6. An alternative method, block-randomizing subjects based on generation into one of four conditions and sending subjects links to their specific survey condition might have resulted in an unbalanced sample in Wave 2 if there was differential attrition across groups.
7. Of course, even under these circumstances, there is no guarantee that subjects read the articles.
8. The assumption of normality of residuals was not consistently supported; however, analysis of variance (ANOVA) is considered robust to nonnormality for larger sample sizes such as this.

9. Bock (1975) argues that in pretest–posttest designs, using the pretest measure as a control is more powerful than subtracting Wave 1 from Wave 2 and treating the difference as the dependent variable. Bock states this method is preferable in situations such as ours, in which subjects were not block-randomized on Wave 1 scores, which was not possible given the four different outcomes of interest. "Thus, the analysis . . . provides a valid test of the treatment effects even though the assignment of subjects is not random *relative to the initial score*" (Bock 1975: 495, emphasis added).
10. This approach divides the continuous moderator into three bins of equal size, equivalent here to low, medium, and high support for gun control, while also checking the assumption of linear (vs. polynomial) moderating effects. We find similar results using a traditional ANOVA in which we manually bin gun control support, and in which we treat the moderator as a continuous variable.

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