Breaking Agenda Setting Boundaries: A Multi-Dimensional Approach to Understanding Salience of Gun Control in the Polarized Public Sphere

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We have no known conflict of interest to disclose.

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Abstract

We reexamine agenda setting by analyzing the salience of gun control within diverse U.S. audience groups. Utilizing data spanning from 2015 to 2022, we investigate the impact of traditional media, partisan media coverage, discourse on Twitter (now X), real-world gun-related events, and Google Trends search behavior on the perceived importance of gun control. Our findings indicate that while traditional media and Twitter discourse do not significantly sway the salience of gun control, partisan media coverage and specific information-seeking search behaviors do. Notably, media opposing an audience's political ideology and searches for gun-related information are influential. The effect of real-world shooting events on issue salience is complex, with shootings influencing liberals, but which conservatives showing an initial decrease in perceived importance for conservatives. Our approach explains issue salience for all ideological groups quite well and offers the most comprehensive understanding of the interplay between personal experiences, search behaviors, and a polarized media environment in shaping public salience on gun control to date.

Breaking Agenda Setting Boundaries: A Multi-Dimensional Approach to Understanding

Salience of Gun Control in the Polarized Public Sphere

The issue of gun control has been a contentious topic in the United States for over half a century. Debates surrounding who should be allowed to bear arms and legislation aimed at restricting access to firearms are perennial. Some argue that the assassination of President John F. Kennedy in 1963 marked a turning point in public attention towards this issue (Jamieson & Campbell, 1982). Following Kennedy's assassination, Congress passed the Gun Control Act of 1968, which imposed stricter regulations on the sale and ownership of firearms (Zimring, 1975). Despite a slight decrease during the COVID-19 pandemic, the number of gun-related deaths and mass shootings in the United States has continued to rise over the past two decades (Gramlich, 2022; Mother Jones, 2022). However, the extent to which the public perceives gun control as an important issue in relation to these events remains understudied.

National media outlets have consistently covered shooting events, contributing to raising awareness about the issue (Schildkraut, 2018). High-profile events such as the 1999 Columbine High School shooting continue to receive coverage (Sanchez & Tucker, 2022), and ongoing legal battles keep the 2012 Sandy Hook Elementary School shooting in the public eye (Queen, 2022). Furthermore, social media platforms are rife with debates about gun control, with discussions taking place on platforms like Twitter[1] (Benton et al., 2016) and Instagram (Austin et al., 2020).

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[1] In this paper we refer to "X" the social media formerly known as Twitter, as Twitter, because the data used reflects data pre-Elon Musk's ownership.

Despite the increasing prevalence of gun violence, mass shootings, and the extensive media coverage and social media discussions surrounding these issues, gun control remains a relatively unimportant issue in the United States today. In 2022, only an average of 3.16% of people in the U.S. reported gun control as an important issue facing the country (Gallup, 2022). This paper explores the importance of the gun control issue over time in the U.S., across liberal, moderate, and conservative audiences. Using the theory of agendamelding, we measure various actors considered to have agenda-setting influence: search behaviors, real-world cues (e.g., shootings and gun-related deaths), traditional media coverage, partisan media, and social media chatter. Across partisan lines, and regardless of stance on the issue, we aim to provide a better understanding of why U.S. individuals perceive the issue of gun control as salient and offer a clear picture of what drives audience importance for ongoing issue debates.

Our unit of analysis is individual-level responses from the Gallup Key Indicators survey, which asks respondents to identify the most important problems facing the country. We use these responses to measure the salience of the gun control issue among different political ideologies. We also consider second-level agenda setting by distinguishing between partisan framings of the issue. Our independent variables include traditional media coverage, partisan media coverage, social media chatter, real-world cues such as shootings and gun-related deaths, and need for orientation as measured by Google search behavior. By including these diverse sources of influence, we aim to provide a comprehensive "kitchen sink" model of agendamelding to better explain the agenda-setting effect on the salience of the gun control issue.

From agenda setting to "agendamelding"

Agenda setting theory posits that mass media have influence over the importance of issues (McCombs & Valenzuela, 2021). The theory has roots in a linear and traditional media age, where a few outlets, mainly television and newspapers, were shown to predict how audiences would recall the important issues facing society today (McCombs & Shaw, 1972). Although the U.S. population continues to perceive gun violence as less important than other issues, studies have shown that exposure to the mainstream media's gun violence coverage does raise the salience of the issue (Guo et al., 2021). Studies have also documented the effect of the media in setting the agenda in the aftermath of mass shootings. One study found that while mass shootings account for only 33% of gun violence deaths in the United States, 90% of the media coverage of gun violence is about mass shootings (Jashinsky et al., 2017), which can be one of the reasons why gun violence, in general, is perceived as a less important issue outside the context of mass shootings.

Aside from mass shootings, mentions of the issue by presidential candidates have been linked with spikes in the salience of gun violence. For example, gun control was ranked 16 and 12 among issues covered by newspapers and Twitter, respectively, during the 2016 presidential election; but its prominence was affected significantly by candidates' mention of the issue on Twitter (Conway-Silva et al., 2018).

As such, we suggest that the amount of attention that traditional media dedicate to gun-related crime, gun control and second amendment rights will predict the salience of the issue in audiences.

H1: The prominence of gun-related news coverage in traditional media will predict the perceived significance of these issues among audiences.

Much work has gone into expanding beyond mass media to discover how other actors set agendas in the digital media age. In his terminal work, Don Shaw regularly argued that these changes could be best described by what he coined as "agendamelding" (Shaw et al., 2019). He documented that audiences are now afforded the luxury of media choice. That is, they can choose media as if they were in a buffet, adopting the comfort food of choice. Moreover, agendamelding put forward the idea that audiences do not just adopt agendas based on their own personal preferences, but also through the communities and identities they belong to (Shaw et al., 1999). Certainly, when we consider gun control, we understand that belonging to a community where a violent mass shooting occurred, such as the event in Boulder, Colorado, King Soopers where 10 people died, would influence the perceived salience of the issue of gun control. Moreover, having a strong sense of political identity could also push an individual into adopting a set of issues that identity (Vargo, 2022). For instance, Republicans have long campaigned on second amendment rights as a key reason to vote Republican (Borówka, 2019). The following sections explore the ways in which agenda setting literature has expanded, and how that alters our expectations for the salience (a.k.a., importance) of gun control in media and audiences.

Diversity of agenda setters

While traditional and partisan media are often shared on social media, social media platforms themselves are often hotbeds of discussion about political issues. Incidents of mass casualty gun violence typically result in spikes in discussions about gun control and second amendment rights on social media. Although the peaks subside not long after each shooting, social media continue

to witness a sustained discussion on these issues by some users (Tremayne & Minooie, 2013). There is plenty of evidence to suggest that the discussion of gun control and second amendment rights is not only popular on social media, but also closely correlated with public opinion as measured by traditional surveys (Benton et al., 2016).

"Although traditional media remain important for advocacy groups, social media have become more important" (Choi & McKeever, 2022, p. 2) with organizations like the Sandy Hook Foundation, Everytown, and the National Rifle Association (NRA) dedicating significant resources to sharing content on social media platforms. The NRA, for example, increased its digital spending on Facebook and YouTube to an average of $47,300 a day in the aftermath of the Parkland High School shooting in 2018 (Gammon, 2018). That content gets amplified across these platforms as individuals engage with it. Indeed, the agenda setting literature has a growing body of research that suggests that these types of organizations can use social media to exhibit an agenda-setting effect on audiences.

Incorporating research on the agenda-setting capabilities of advocacy groups, we find that these organizations effectively utilize social media platforms to shape public discourse and perceptions on issues like gun control. Bennett and Segerberg (2012) explore how digital media have transformed the nature of contentious politics, emphasizing the role of personalized communication in fostering direct action. This shift has enabled advocacy groups to bypass traditional media gatekeepers, directly engaging with their audience and setting the agenda on critical issues. Similarly, Chadwick (2013) details the emergence of the hybrid media system, where the interconnectedness of traditional media and digital platforms allows advocacy groups to amplify their messages, ensuring that their agendas gain traction in the broader public sphere.

This blending of media avenues creates a fertile ground for groups like the National Rifle Association (NRA) and Everytown for Gun Safety to exert significant influence over the public's perception of gun control, demonstrating the power of digital platforms in contemporary agenda setting.

Furthermore, the work of Karpf (2012) illustrates the transformative impact of digital technologies on political advocacy, showcasing how organizations are able to mobilize support and influence policy debates through online platforms. Following mass shooting events, advocacy groups have been particularly adept at using social media for rallying support and keeping the gun control debate alive in the public consciousness, a strategy that has proven effective in maintaining issue salience over time (Chadwick, Dennis, & Smith, 2016). This ongoing engagement with digital audiences underscores the importance of considering both traditional and new media in understanding the dynamics of agenda setting in today's polarized media landscape. The ability of advocacy groups to leverage the hybrid media system signifies a crucial evolution in how public salience on contentious issues like gun control is formed and maintained.

As such, we expect the salience of gun-related agendas on social media to have some influence on the importance of gun control in audiences.

H3: The prominence of discussions about guns on social media will positively predict the perceived significance of guns among audiences.

In our study, we specifically examined Twitter data to assess the platform's role in the agenda-setting process for gun control. We acknowledge that Twitter, as a single platform, does not

represent the entirety of social media, which comprises a diverse array of platforms each with unique functions and affordances. The choice to focus on Twitter was driven by its prominence as a platform for public debate and its accessibility for research through public APIs. However, it is crucial to recognize that other social media platforms, such as Facebook, Instagram, and Reddit, contribute to the public sphere in different ways. Each platform has distinct user demographics, content sharing mechanisms, and interaction styles, which can influence how issues are discussed and prioritized by their respective audiences.

> H3: The prominence of discussions about guns on social media will positively predict the perceived significance of guns among audiences.

Real-world cues

In agenda-setting terminology, the issue of gun control can be an obtrusive issue (Demers et al., 1989). That is, it can force itself into an individual's life through a single event with a gun. Mass shootings, crimes, and safety accidents all thrust the issue of guns from one that is hypothetical to one an individual experiences directly, either through themselves, or the communities and groups that they belong to (Shaw et al., 2019). It is no leap of faith to think that the number of shootings and gun-related deaths could influence the how important gun control in the U.S.. Through survey responses from 9,500 individuals, Newman and Hartman (2017), found that increased proximity to a mass shooting was associated with heightened public support for stricter gun control. However, scholars disagree about how mass shootings affect public opinion. Much of this disagreement is centered around how attitudes change toward the issue, with a body of literature suggesting that shootings lead to pro-gun control attitudes (Hartman & Newman, 2019;

Newman & Hartman 2017;) and another suggesting that shootings lead to a partisan response, with ideological viewpoints prevailing, such as conservatives feeling more strongly about second amendment rights (Barney & Schaffner, 2019). However, we can find no analyses of public issue salience, that is, where researchers assessed the relative importance of the gun control issue as events occurred.

Zooming out from gun control, the agenda-setting literature documents examples where "real-world cues" exhibit agenda-setting effects (Hester & Gonzenbach, 1995). Real-world cues are generally defined as events that happen that warrant news coverage, such as an oil pipeline breaking or an earnings report being released by a corporation. The general finding has been that these events drive news coverage, and as such can have an agenda-setting effect on media which then transfers to audiences (Behr & Iyengar, 1985). Issues that are more obtrusive—i.e. issues that people have more direct experience with—tend to be perceived as more important and less intrusive issues are perceived as less important (Zucker, 1978). Journalists and other media gatekeepers may in turn perceive unobtrusive issues as less pertinent and newsworthy, something that Wonneberger and Vliegenthart (2021) observed about climate change. However, real-world cues such as climate litigation can turn climate change into a more obtrusive issue and raise its salience (Wonneberger & Vliegenthart, 2021). Similarly, the number of asylum seekers can serve as a real-world cue for immigration (van Noije et al., 2008). It can then be argued that mass shootings can be real-world cues that turn gun violence into an obtrusive and thus more salient issue.

Taken together, we posit that real-world shootings and gun-related deaths will influence the salience of gun control in audiences.

H4: The frequency of real-world events related to guns (e.g., number of shootings,

number of deaths) will predict the perceived significance of guns among audiences.

The obtrusiveness of gun violence is further supported by studies such as the Kaiser Family

Foundation (KFF) study, which provides empirical evidence that a significant portion of the

American population has been personally affected by gun violence (Shannon Schumacher et al.,

2023). This personal connection to gun violence can heighten the issue's salience and drive

public concern and information-seeking behavior. Our study acknowledges the obtrusiveness of

gun violence as a critical factor that can shape public opinion and the agenda-setting process, and

future research should continue to explore the relationship between personal experiences with

gun violence and the perceived importance of gun control.

Search Behaviors

The notion of need for orientation (NFO) was first proposed as a psychological explanation of

the agenda-setting capabilities of mass media (Chernov, Valenzuela, & McCombs, 2011;

Matthes, 2006; Matthes, 2008). McCombs and Weaver (1973) tested this theory in relation to the

1972 presidential election and identified two key measurements for understanding an individual's

NFO: relevance and uncertainty. Relevance is conceptualized as the level of interest an

individual has in an issue (Matthes, 2006), and has been operationalized as political campaign

interest or interest towards a specific issue (McCombs & Valenzuela, 2021; Weaver, 1977).

Uncertainty refers to the individual's willingness to accept information from the media

concerning a particular issue (Weaver, 1977), and has been measured in terms of the consistency

of a voting record, strength of political party identification, and certainty of a presidential

candidate choice. Recent studies have used strength of political identification to gauge uncertainty (Camaj & Weaver, 2013).

It is thought that individuals have moderate orientation needs when they have either high interest and low uncertainty or low interest and high uncertainty, and low orientation needs when both interest and uncertainty are low. When in a state of uncertainty, people are said to construct a cognitive map of their surroundings in an attempt to reduce dissonance (McCombs & Valenzuela, 2021). Therefore, individuals with high interest and high uncertainty are likely to seek out new information on a particular issue, whereas those with high interest and low uncertainty would be unlikely to do the same. Matthes (2005) posited that there is a "need for orientation toward issues," a "need for orientation toward facts," and a "need for orientation towards journalistic evaluations." Subsequent studies have found the three-dimensional measure and the original measure to be predictors of first-level agenda-setting effects and that the two measures were positively correlated (Chernov et al., 2011; Matthes, 2008). The items with the strongest correlations in Matthes' (2005) scale for each dimension were "I want to be instantly informed about recent developments" (.64), "I would like to be thoroughly informed about specific details" (.65), and "I attach great importance to commentaries on this topic" (.60), respectively.

Camaj (2014) found that in a polarized media environment like the United States, "the level of political interest is more likely to determine the frequency of media exposure and attention, whereas the level of political uncertainty (measured by political ideology) might determine the media source." (p.695) Most people turn to Google to "stay informed," seek "specific details" and "commentaries" on topics of interest as the search engine ranks first and accounts for more

than 90% of searches on the internet around the world and in the United States.[1] Depending on their political ideology, they choose from myriad of sources returned by Google. Therefore we find Google search to be a NFO-like measure, an antecedent that individuals are interested in learning more about a specific issue. (Hester & Gibson, 2007). Google is robust for this study because individuals take to Google for gun-related searches to stay informed. When individuals are uncertain, they will take to Google to search for specific details like the number of gun violence incidents in the area, how to obtain a concealed weapons permit, or even just what the gun laws actually are in their area. When guns are relevant to their lives and they attach importance to commentaries on this issue, they will google for gun advocacy groups, or search for ways to donate money to a specific organization. As such, we aim to measure the search interest of specific gun-related behaviors.

H5: The level of interest in guns, as observed through search behavior, will positively predict the perceived significance of gun control among audiences.

Method

Gallup Key Indicators survey responses

An agenda setting inquiry, at the first, most basic level, is a measure of salience for an issue (McCombs & Valenzuela, 2021). This study looked at the number of people who, when asked, felt gun control was one of the most important problems facing society today. We do not seek to measure or evaluate attitudes towards gun control or second amendment rights.[2]

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[2] Such measures may be interesting to other analyses, but not central to understanding issue popularity.

Gallup is well known for their continued asking of the question, "What do you think is the most important problem facing this country today?" They follow by asking about the second most important, and then the third most important issue. These categorical measures are considered "basic indicators," which make them a part of all Gallup Key Indicator surveys. As a part of the Gallup Poll Social Series (GPSS), these measures are captured monthly and designed to monitor U.S. adults' views on numerous social, economic, and political topics.[3] Here we study the "guns/gun control" MIP, as coded by Gallup. Gallup codes this issue as being present if the respondent gives any mention to guns, gun control, second amendment rights or the right to bear arms.

Researchers obtained individual response data for the surveys from Gallup for May 2015 to July 2022. There was an average of 1363.25 (SD = 748.70) respondents per month that answered the MIP question. In this analysis we call this the "everyone" category. Researchers also cross-tabulated the data by ideology. Those who identified as 'conservative' or 'very conservative' were considered conservative, those who identified as 'liberal' or 'very liberal' were considered liberal, and those who identified as 'moderate' were coded as such. According to the data, there was an average of 522.08 (SD = 291.94) conservatives, 326.71 (SD = 176.81) liberals, and 467.16 (SD = 254.97) moderates per month. Every respondent was given the opportunity to list up to three Most Important Problems (MIPs) and all these responses were included in the analysis.

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[3] The Gallup Poll Social Series (GPSS) employs a dual-frame design to survey adults aged 18 and up living in the United States. This method involves random-digit-dialing to both landlines and cellphones, with Survey Sampling International (SSI) providing the samples. A minimum quota of 70% cellphone respondents and 30% landline respondents is set, as well as additional quotas by time zone within region. Furthermore, those who primarily speak Spanish receive interviews conducted in Spanish. For further details, please refer to https://www.gallup.com/175307/gallup-poll-social-series-methodology.aspx.

Monthly percentages of the total number of mentions divided by the total number of possible respondents who could have listed the MIP were generated for each issue and each political ideology. In this way, we measured how salient the issue was in that audience group.[4] In all, four time series were generated, each a time series that represented the salience of a specific issue, for a specific audience.

Collecting online news

This study aimed to measure news issue agendas for various media types. To this end, the Global Database of Events Language and Tone (GDELT) maintains a Global Knowledge Graph (GKG) that is a comprehensive, representative, and open-source database collection of U.S. news (Hopp et al., 2019; Leetaru & Schrodt, 2013). GDELT monitors news on a global scale and tags that data with the people, locations, themes, emotions, narratives, and events featured in the news article. It indexes a range of news sources including online blogs, local and national newspapers, and radio and television stations. The GDELT GKG was stored in the form of tab-separated text files, with each news article occupying one entry and its corresponding metadata appended in columns. All accessible data was downloaded to match the period of analysis.

Classifying media types

To classify news media types, we adopted a manual media content analysis put forward by prior GDELT research in mass communication (Vargo & Guo, 2017). This analysis inspected and classified all news media that published at least 5 articles a day, labeling them as elite, traditional, digital, and, later, extreme partisan news media (Vargo et al., 2018). Multiple human coders reached agreement on these classifications, resulting in a list of 2,760 media outlets and their corresponding category classifications. These are maintained by the researchers and are

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[4] We controlled for the varying sample size of each wave of responses by recording the percentage of respondents that mentioned the issue, not the cumulative count.

available for download. All URLs in GDELT were assessed against this list, with all matches being considered to belong to the corresponding category.

From the media typology, we created two media categories. The first broadly represents all non-partisan U.S. news which we deem "traditional media." It includes the following media sources:

(1) elite media [$n = 4$]: The *New York Times* the *Washington Post* and news agencies.

(2) wire services [n = 2]: *United Press International* and the *Associated Press*.

(3) traditional media [$n = 1,925$]: Regional/local: television, radio and newspapers.

(4) digital media [$n = 724$]: Online-only, non-partisan media.

Partisan media cater to a specific, political audience or an in-group. As such we adopted Vargo et al.'s, (2018) extreme partisan news category.[5] For partisan media we identified:

(1) conservative media [$n = 29$]: Online partisan media.

(2) liberal media [$n = 28$]: Online partisan media.

Identifying news about gun control

For each article in the GDELT GKG, themes were extracted from the full text of articles, using keyword lexicons. To perform issue classification on news articles, we relied on themes related to gun control, specifically, articles that mentioned: weapons proliferation, arms control, mentions of guns, shotguns, and machine guns, or an active shooter. An initial retrieval of articles matching at least one of these themes resulted in poor article precision, with many false positives, such as basketball articles being retrieved due to the mention of the word "shooting," or the late Queen Elizabeth's death due to the gun salute at her funeral. To reduce this error, we only retrieved articles that mentioned at least two or more gun-related themes. 115,650 articles

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[5] For instance, Fox News and MSNBC are not listed as partisan media. Instead, more blatant examples are presented. Left-leaning sources include newrepublic.com and slate.com. Right-leaning sources include cnsnews.com and dailycaller.com.

were retrieved for the time period of this study. A manual content analysis was performed by two coders. Each coder independently reviewed 100 articles to assess whether they involved guns and violence and crime, talked about gun control, or second amendment rights. The two coders reconciled their disagreement on two articles. 80% of retrieved articles mentioned the desired themes, suggesting that the news measures are a somewhat precise measure of whether an article broadly mentions guns.

Measuring NFO through Google Trends data

An analysis of the psychology behind agenda setting has found that passive consumers of media generally demonstrate a lower level of NFO compared to those consuming media actively (McCombs & Stroud, 2014). A heuristic application of this finding would suggest that audiences who actively search for information on a topic, using a search engine, have a higher need for orientation and thus are more susceptible to agenda-setting effects.

Based on this and numerous studies that have found Google search an acceptable proxy for public interest and opinion (Hester & Gibson, 2007; Perju-Mitran & Mitran, 2018; Scharkow & Vogelgesang, 2011), Google Trends data on gun violence in the United States were selected to represent the NFO.

Google Trends, which is a measure of search queries submitted to Google by users, provides access to a normalized, aggregate, and "unfiltered sample" of searches.[6] The company says that it divides each data point by the total searches of the geography and time range it represents, and presents the values on a scale of 0 to 100 based on a topic's proportion to all searches on all topics. One of the main advantages of using Google Trends is that it is an

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[6] This is according to Google Trend's FAQ page. See https://support.google.com/trends/answer/4365533?hl=en&ref_topic=6248052

objective measure of users' behavior as opposed to self-reported preference (Mavragani & Tsagarakis, 2016).

Google Trends data for every month between January 2014 and September 2022 were collected for 36 gun-related search phrases in the United States. The phrases were selected based on the common language used to describe mass shootings in the media and a review of studies of gun violence discourse (Capron et al., 2021; Gunn et al., 2018). These queries broadly capture an expression of uncertainty, such as needing to know about gun violence in an area, the gun laws in a state, or seeking a concealed weapons permit. Also, queries that expressed an interest, such as looking for a donation link for a gun-related charity, were captured.

The queries selected for the present study included 13 neutral phrases (i.e. Shooting today, Shooting survivors, Active shooting, Active shooter, Shooter dead, Shooter arrested, Shooter killed, Shooter in custody, Shooting manhunt, Shooter identity, Shooting how many dead, Shooting how many injured, Shooting how many killed), 12 pro gun phrases (i.e. NRA donation, Gun Owners of America, Where to buy a gun, How to open carry, Concealed weapons permit, Concealed carry permit, How to buy a gun, Gun shop, Gun store, Second Amendment Foundation, Right to bear arms, Protecting the Second Amendment), and 11 pro gun control phrases (i.e. Safe from Guns, Gun Control data, Sandy Hook donation, Gun Free Kids, Third Way, Mayors Against Illegal Guns, Moms Demand Action, Everytown for Gun Safety, Coalition to Stop Gun Violence, Brady Campaign, How to stop gun violence.) For each category (i.e. neutral, pro-guns, and pro-gun control) the average monthly Google Trends value was calculated to be used in analysis.

A higher Google Trends value represents a higher need for orientation from the users who search for a given topic. For example, in February 2018, pro-gun queries had an average

Google Trends index of 61.9, indicating a high need for orientation among pro-gun users in the aftermath of the Parkland, FL shooting—which, as stated earlier, had resulted in an increased spending spree on digital platforms by the NRA. By contrast, in September, which saw the least number of mass shootings in the United States in 2018,[7] the average pro-gun queries had a Google Trends value of 21.1 (also the least 2018 Google Trends value in our pro-gun sample.)

We concede that while our simplistic measure of specific search behaviors hardly lives up to the original measure of NFO as designed by Weaver, unfortunately the Gallup poll data did not measure NFO, and no known issue-NFO longitudinal measure exists. We include it of a rough proxy of what people are taking time to learn more about online, but we feel it is an antecedent of issue salience for individuals like NFO, so we discuss it in a similar context.

Real-world cues: gun violence, deaths, and mass shootings

The present study leveraged the AP, USA TODAY, and Northeastern University "Mass Killing Database."[8] The initiative logs incidents, offenders, victims, and weapons of multiple homicides within the United States from 2006 to the present. Data was collected and verified using multiple sources, including the FBI Supplementary Homicide Reports, media accounts, court documents, academic journal articles, books, and local law enforcement records.

The raw event data was downloaded, windowed to the time frame of the present study, and finally filtered to only include gun-related incidents. The following monthly totals were created:

1) the number of gun-related deaths

2) the number of shootings

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[7] According to Gun Violence Archive's Mass Shootings in 2018 Report. See
https://www.gunviolencearchive.org/reports/mass-shooting?year=2018
[8] The dataset and full methodology can be downloaded here: https://data.world/associatedpress/mass-killings-public

3) mass shootings[9]

Twitter gun salience

In agenda setting research, Twitter data is often used because Twitter has an open API (Zimmer & Proferes, 2014) with priority access to academics at little or no cost.[10] As such, we use it as a measure of the salience of gun-related talk on a specific social medium, by various actors ranging from the media to individuals and activist groups. The newly released "Tweet Counts" endpoint generates summary statistics on queries, specifically the number of tweets that match a specific search query. For a tweet to be counted in the study, it must have originated in the U.S., a designation that is ultimately made according to Twitter's suite of geospatial inferencing methods.[11]

      We devised a list of hashtags (i.e. keywords) to be used in queries to track the salience of pro-gun control and pro-gun rights conversations on Twitter. The keywords were selected based on a review of gun-related studies that used Twitter data. Benton et al. (2016) collected more than 70 million gun-related tweets in 2013 and identified 22 hashtags that "were strongly associated with either the Control or Rights gun control positions." A similar study looking at the activities of gun policy organizations on Twitter identified 32 hashtags used by the pro-control and pro-rights camps (Merry, 2016). Lin and Chung (2020), who examined the complete timelines of "more than 155,000 ideology-identifiable" users, found the hashtags reported by Benton et al. (2016) to be useful but they also reported other hashtags associated with each position such as #disarmhate, #wearorange, and #notonemore on the pro-control side and

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[9] Mass shootings are operationalized as the number of events with deaths greater than 3

[10] For a review of Twitter's Academic API, see: https://developer.twitter.com/en/products/twitter-api/academic-research

[11] The various location inference methods that Twitter uses are reviewed in Tian et al. (2020).

#2ndamendmend, #nra, and #pewpew on the pro-rights and gun advertisers side. Given the prevalence of Benton et al. (2016)'s keywords, we started with the hashtags they reported and added others that were identified as pro-gun rights or pro-gun control in other similar studies of gun discussions on Twitter (Rajadesingan & Liu, 2014; Wang et al., 2016).

We then sorted the hashtags as to whether they retrieved pro-gun control tweets, pro-gun rights tweets, and finally neutral tweets about guns and violence not directly linkable to a gun issue stance. Table 1 displays the pro-gun control and pro-gun rights hashtags used in Twitter queries. Each query was run, and tweet counts were returned by day. Monthly sums were created and ultimately three measures were used as independent variables: twitter gun control salience, twitter gun rights salience, and neutral gun tweets.

It's important to note that while we went to great lengths to try to capture time series related to gun-related chatter on Twitter, these measures are not representative of other social media platforms such as Instagram, TikTok and Reddit. It could be that more populous platforms would have different effects, and as such is ripe for future analysis.

Time series analysis using penalized regression

To ensure that our results were not dependent on one particular time series model we constructed a penalized regression model using three different approaches: LASSO (least absolute shrinkage and selection operator), Ridge and ElasticNet. We preferred penalized regression approaches over linear models as they address multicollinearity issues. We used the machine learning library, scikit-learn, to automate these procedures. We adopt the best model for each audience, and we also checked the significance of coefficients reported in this paper. For a coefficient to be reported and discussed here, it had to be significant in at least two of the three models, reducing the probability of spurious findings greatly.

Secondly, instead of using autoregressive integrated moving average (ARIMA) models for temporal controls, which often lead to multicollinearity problems with other independent variables, we adopted Facebook's Prophet analysis package. This assists in effectively interpreting large sets of variables by generating seasonality and trend components that serve as temporal controls for our analysis. A one-month time lag was introduced for both dependent and independent variables. This lag facilitates the agenda-setting process and aids in controlling autocorrelation.

Results

Addressing the research questions and hypotheses posed in this study required the use of penalized regression time series models to assess the impact of several potential predictors on the salience of gun control for different audience groups. For each audience we put forward the model that had the strongest fit to the data. The results of these models are presented in Table 2.

The Ridge regression model was found to be the best fit for the conservative, liberal, moderate, and all-encompassing audience groups. For each audience, the model analyzed the impact of a range of predictors, given their value for that current, and their lagged value for the previous month. These predictors encompassed real-world gun-related events, traditional media coverage, partisan media coverage, social media discourse, and search behavior indicating NFO.

Turning to H1, the salience of gun-related news coverage in traditional media was not found to be a significant predictor for any of the audience groups. This is indicated by the beta coefficients of 0 for both the current and lagged values of traditional media coverage across all audience groups. This suggests that the amount of traditional media coverage dedicated to gun-

related issues does not significantly influence the importance that different audiences attribute to gun control. Therefore, we must reject H1 for this issue.

For H2, the influence of partisan media was mixed. For conservative audiences, right-leaning media had a small but significant positive effect ($\beta = 0.06$), while left-leaning media had a moderate positive effect ($\beta = 0.55$). For liberal audiences, both left-leaning ($\beta = 0.51$) and right-leaning media ($\beta = 0.43$) had moderate positive effects. For moderate audiences, only left-leaning media had a significant effect ($\beta = 0.63$), while right-leaning media did not. For the general audience, both left-leaning ($\beta = 0.66$) and right-leaning media ($\beta = 0.13$) had significant positive effects. This partially supports H2a and H2b, suggesting that partisan media can influence the salience of gun control for audiences, but the effect varies depending on the audience's political ideology and the political leaning of the media.

H3 proposed that the importance of guns on social media would positively predict the importance of guns in audiences. However, the results did not support this hypothesis. The beta coefficients for all social media variables were 0 across all audience groups, indicating that the discourse on social media did not significantly influence the salience of gun control for these audiences.

In terms of H4, the number of real-world cues, such as shootings and deaths, had varying effects across the audience groups. For conservative audiences, the lagged values of mass shootings and shootings had a strong positive effect ($\beta = 1.22$), while the current values had a strong negative effect ($\beta = -0.75$). A similar pattern was observed for liberal and moderate audiences, although the effects were less pronounced. For the general audience, both the current and lagged values of mass shootings and shootings had significant effects, but in opposite

directions. This suggests that the immediate impact of these events may decrease the salience of gun control, but the effect becomes positive over time. We offer support for H4.

Finally, H5 proposed that the need for orientation, as observed through search behavior about guns, would positively predict the importance of gun control in audiences. The results partially supported this hypothesis. For conservative audiences, the lagged values of neutral and pro-gun NFO had moderate positive effects ($\beta = 0.90$ and 0.19, respectively), while the current values of neutral and pro-gun NFO had smaller positive effects ($\beta = 0.37$ and 0.02, respectively). Anti-gun NFO had a small negative effect ($\beta = -0.21$). Similar patterns were observed for the other audience groups, although the effects were generally smaller.

Discussion

The results suggest that the salience of gun control for different audiences is influenced by a complex interplay of factors, including real-world events, partisan media coverage, and search behavior. However, the importance of these factors varies depending on the audience's political ideology, giving broad support to the "agendamelding" (Shaw et al., 2019). Overall, the r-squared are quite high, almost as high as the seminal work on agenda-setting, which famously reported a $r = .91$. Here, we consider many multiples of more independent variables, but explain a very similar amount of variance in audience salience to gun control.

Real-world cues

The results of this study suggest a nuanced relationship between real-world shooting events and the public's salience of gun control. While we might assume that an increase in such tragic events would trigger a direct increase in the public's concern about gun control, this wasn't consistently observed in the studied data. In fact, the immediate impact of these events appeared

to have a negative effect on how important gun control was viewed by conservatives. The data from this study does suggest that the salience of gun control for conservative audiences tends to diminish quickly after real-world shooting events. The negative beta coefficients for the current values of mass shootings and shootings indicate that, in the same month as these events, the importance conservatives attribute to gun control decreases. However, the lagged values of these events have a strong positive effect on salience, suggesting that these events do play a role in shaping conservative views on gun control, albeit not immediately. This pattern could be interpreted as conservatives having some type of immediate cognitive dissonance resistance against the immediate impact of gun violence, but still, as time passes and immediate visceral reactions fade, these events contribute to a growing undercurrent of importance about gun control.

Search Behaviors

We observed through search behavior in this study, and we argue it measures an ==aggregate information-seeking== regarding a specific issue—in this case, gun control. Search behavior does indeed emerge as a meaningful predictor, particularly the neutral and pro-gun queries. The lagged values of neutral and pro-gun search behaviors had moderate positive effects for most audience groups, indicating that individuals' information-seeking behavior has a role in shaping the salience they attribute to the gun control issue over time. However, the relationship between search behaiors and perceived importance of gun control is not straightforward. While neutral and pro-gun search behaviors positively predict the issue importance, anti-gun search behavior tends to negatively predict the importance, suggesting a complex interplay of receptiveness, pre-existing opinion, and search behavior in shaping the perception of a politically charged issue like gun control.

In summary, while search behavior does not overshadow the influence of other predictors like real-world events and partisan media coverage, its role as a unique, active interest measure points to the need for further investigation in understanding the determinants of public opinion.

Implications and Future Research

This study contributes to the evolving discourse on agenda setting by demonstrating the complex interplay between media influence, personal experiences, and active information seeking in shaping public opinion on contentious issues like gun control. The findings highlight the need for a nuanced approach to understanding media effects, one that accounts for the diversity of media platforms and the obtrusiveness of issues.

Future research should aim to incorporate direct measures of media exposure and consider the broader societal context in which public sentiment is formed. By doing so, scholars can deepen their understanding of the mechanisms through which media coverage, social media discourse, and real-world events influence public perceptions of issue importance.

In addition, further research should include newer social media platforms like TikTok, Instagram, and so on to further explore possible social media agenda-setting effects.

The study's approach to examining the agenda-setting role of media in a polarized environment invites further exploration into how personal experiences with gun violence inform public perceptions and contribute to the media's agenda-setting power. As the media landscape continues to evolve, so too must our methods and theoretical frameworks for studying the complex processes that shape public opinion.

References

Althaus, S. L., & Tewksbury, D. (2002). Agenda setting and the "new" news: Patterns of issue

importance among readers of the paper and online versions of the New York Times.

Communication Research, *29*(2), 180–207.

https://doi.org/10.1177/0093650202029002004

Austin, L. L., Guidry, J. P., & Meyer, M. (2020). #GunViolence on Instagram and Twitter.

Journal of Public Interest Communication, 4(1), 4–36.

https://doi.org/10.32473/jpic.v4.i1.p4

Barney, D. J., & Schaffner, B. F. (2019). Reexamining the effect of mass shootings on public

support for gun control. *British Journal of Political Science, 49*(4), 1555–1565.

https://doi.org/10.1017/S0007123418000352

Baumgartner, F. R., & Jones, B. D. (Eds.). (2002). *Policy dynamics*. University of Chicago Press.

Behr, R. L., & Iyengar, S. (1985). Television news, real-world cues, and changes in the public

agenda. *Public Opinion Quarterly, 49*(1), 38–57. https://doi.org/10.1086/268900

Benton, A., Hancock, B., Coppersmith, G., Ayers, J. W., & Dredze, M. (2016). After Sandy

Hook Elementary: A year in the gun control debate on Twitter. In P. Meerkamp (Ed.),

Proceedings of Data for Good Exchange 2016.

https://doi.org/10.48550/ARXIV.1610.02060

Bennett, W. L., & Segerberg, A. (2012). The logic of connective action: Digital media and the

personalization of contentious politics. *Information, Communication & Society, 15*(5),

739-768. https://doi.org/10.1080/1369118X.2012.670661

Borówka, A. (2019). Access to firearms as an element of political positioning of the Democratic party and the Republican party during the 2016 US presidential elections. *Historia i Polityka*, *87*. https://doi.org/10.12775/HiP.2019.017

Camaj, L. (2014). *Need for Orientation, Selective Exposure, and Attribute Agenda-Setting Effects. Mass Communication and Society, 17(5), 689–712.* doi:10.1080/15205436.2013.835424

Camaj, L., & Weaver, D. H. (2013). Need for orientation and attribute agenda-setting during a US election campaign. *International Journal of Communication, 7*, 1442–1463.

Capron, D. W., Andel, R., Voracek, M., Till, B., Niederkrotenthaler, T., Bauer, B. W., Anestis, M. D., & Tran, U. S. (2021). Time☐series analyses of firearm☐related Google searches and U.S. suicide rates 2004–2016. *Suicide and Life-Threatening Behavior*, *51*(3), 554–563. https://doi.org/10.1111/sltb.12728

Chadwick, A. (2013). The hybrid media system: Politics and power. Oxford University Press.

Chadwick, A., Dennis, J., & Smith, A. P. (2016). Politics in the age of hybrid media: Power, systems, and media logics. In The Routledge Companion to Social Media and Politics (pp. 7-22). Routledge.

Chernov, G., Valenzuela, S., & McCombs, M. (2011). An experimental comparison of two perspectives on the concept of need for orientation in agenda-setting theory. *Journalism & Mass Communication Quarterly, 88*(1), 142–155. https://doi.org/10.1177/107769901108800108

Choi, M., & McKeever, B. (2022). Social media advocacy and gun violence: Applying the

    engagement model to nonprofit organizations' communication efforts. *Public Relations*

    Review, *48*(2), 102173. https://doi.org/10.1016/j.pubrev.2022.102173

Chong, D., & Druckman, J. N. (2007). A theory of framing and opinion formation in competitive

    elite environments. *Journal of Communication*, *57*(1), 99–118.

    https://doi.org/10.1111/j.1460-2466.2006.00331.x

Conway-Silva, B. A., Filer, C. R., Kenski, K., & Tsetsi, E. (2018). Reassessing Twitter's agenda-

    building power: An analysis of intermedia agenda-setting effects during the 2016

    presidential primary season. *Social Science Computer Review*, *36*(4), 469–483.

    https://doi.org/10.1177/0894439317715430

Demers, D. P., Craff, D., Choi, Y. H., & Pessin, B. M. (1989). Issue obtrusiveness and the

    agenda-setting effects of national network news. *Communication Research, 16*, 793–812.

Druckman, J. N., Peterson, E., & Slothuus, R. (2013). How elite partisan polarization affects

    public opinion formation. *American Political Science Review*, *107*(1), 57–79.

    https://doi.org/10.1017/S0003055412000500

Gallup. (2022, November). *Most important problem*. https://news.gallup.com/poll/1675/most-

    important-problem.aspx

Gammon, K. (2018, March 23). New data show the NRA increased online ad spending

    aggressively after Parkland shooting. *Chicago Tribune*.

    https://www.chicagotribune.com/business/blue-sky/sns-tns-bc-guns-kids-

    advertising-20180323-story.html

Gius, M. (2018). The effects of state and federal gun control laws on school shootings. *Applied*

    Economics Letters, 25(5), 317–320. https://doi.org/10.1080/13504851.2017.1319555

Gramlich, J. (2022, February 3). *What the data says about gun deaths in the U.S.* Pew Research

    Center. https://www.pewresearch.org/fact-tank/2022/02/03/what-the-data-says-about-

    gun-deaths-in-the-u-s/

Gunn, L. H., ter Horst, E., Markossian, T. W., & Molina, G. (2018). Online interest regarding

    violent attacks, gun control, and gun purchase: A causal analysis. *PLOS ONE*, *13*(11),

    e0207924. https://doi.org/10.1371/journal.pone.0207924

Guo, L., Mays, K., Zhang, Y., Wijaya, D., & Betke, M. (2021). What makes gun violence a

    (less) prominent issue? A computational analysis of compelling arguments and selective

    agenda setting. *Mass Communication and Society*, *24*(5), 651–675.

    https://doi.org/10.1080/15205436.2021.1898644

Haim, M., Weimann, G., & Brosius, H.-B. (2018). Who sets the cyber agenda? Intermedia

    agenda-setting online: The case of Edward Snowden's NSA revelations. *Journal of*

    Computational Social Science, *1*(2), 277–294. https://doi.org/10.1007/s42001-018-0016-

    y

Hartman, T. K., & Newman, B. J. (2019). Accounting for pre-treatment exposure in panel data:

    Re-estimating the effect of mass public shootings. *British Journal of Political Science,*

    49(4), 1567–1576. https://doi.org/10.1017/S0007123418000467

Hester, J. B., & Gibson, R. (2007). The agenda-setting function of national versus local media: A

    time-series analysis for the issue of same-sex marriage. *Mass Communication and*

    Society, *10*(3), 299–317. https://doi.org/10.1080/15205430701407272

Hester, J. B., & Gonzenbach, W. J. (1995). The environment: TV news, real-world cues, and

    public opinion over time. *Mass Comm Review, 22*, 5–20.

Hopp, F. R., Schaffer, J., Fisher, J. T., & Weber, R. (2019). iCoRe: The GDELT interface for the advancement of communication research. *Computational Communication Research, 1*(1), 13–44. https://doi.org/10.5117/CCR2019.1.002.HOPP

Jamieson, K. H., & Campbell, K. K. (1982). Rhetorical hybrids: Fusions of generic elements. *Quarterly Journal of Speech*, *68*(2), 146-157.

Jashinsky, J. M., Magnusson, B., Hanson, C., & Barnes, M. (2017). Media agenda setting regarding gun violence before and after a mass shooting. *Frontiers in Public Health*, *4*. https://doi.org/10.3389/fpubh.2016.00291

Karpf, D. (2012). The MoveOn effect: The unexpected transformation of American political advocacy. Oxford University Press.

Leetaru, K., & Schrodt, P. A. (2013). GDELT: Global data on events, location, and tone, 1979–2012. ISA Annual Convention, 2(4), 1-49.

Lin, H., Lasser, J., Lewandowsky, S., Cole, R., Gully, A., Rand, D. G., & Pennycook, G. (2022). *High level of agreement across different news domain quality ratings*. PsyArXiv. https://doi.org/10.31234/osf.io/qy94s

Lin, Y.-R., & Chung, W.-T. (2020). The dynamics of Twitter users' gun narratives across major mass shooting events. *Human and Social Sciences Communication, 7*. https://doi.org/10.1057/s41599-020-00533-8

Matthes, J. (2006). The need for orientation towards news media: Revising and validating a classic concept. *International Journal of Public Opinion Research, 18*(4), 422–444. https://doi.org/10.1093/ijpor/edh118

Matthes, J. (2008). Need for orientation as a predictor of agenda-setting effects: Causal evidence

    from a two-wave panel study. *International Journal of Public Opinion Research, 20*(4),

    440–453. https://doi.org/10.1093/ijpor/edn042

Mavragani, A., & Tsagarakis, K. P. (2016). YES or NO: Predicting the 2015 GReferendum

    results using Google Trends. *Technological Forecasting and Social Change*, *109*, 1–5.

    https://doi.org/10.1016/j.techfore.2016.04.028

McCombs, M. E., & Stroud, N. J. (2014). Psychology of agenda-setting effects: Mapping the

    paths of information processing. *Review of Communication Research*, *2*(1), 68–93.

    https://doi.org/10.12840/issn.2255-4165.2014.02.01.003

McCombs, M. E., & Weaver, D. H. (1973, April). *Voters' need for orientation and use of mass*

    communication [Paper presentation]. Annual Meeting of the International

    Communication Association, Montreal, QC, Canada.

McCombs, M. E., & Valenzuela, S. (2021). *Setting the agenda: Mass media and public opinion*

    (3rd ed.). John Wiley & Sons.

Mother Jones. (2022, November 19). Number of mass shootings in the United States between

    1982 and November 2022 [Graph]. In *Statista*. Retrieved November 23, 2022, from

    https://www.statista.com/statistics/811487/number-of-mass-shootings-in-the-us/

Newman, B. J., & Hartman, T. K. (2017). Mass shootings and public support for gun control.

    British Journal of Political Science, 49(4), 1527–1553.

    https://doi.org/10.1017/S0007123417000333

Oksanen, A., Hawdon, J., & Räsänen, P. (2014). Glamorizing rampage online: School shooting

    fan communities on YouTube. *Technology in Society, 39*, 55–67.

    https://doi.org/10.1016/j.techsoc.2014.08.001

Perju-Mitran, A., & Mitran, R.-A. (2018). Assessing public opinion on solar energy topics using Google trends. *Journal of Information Systems & Operations Management*, *12*(1), 153–162.

Pew Research Center. (2022, July 11). *Broad public approval of new gun law, but few say it will do a lot to stem gun violence*. Pew Research Center. https://www.pewresearch.org/politics/2022/07/11/broad-public-approval-of-new-gun-law-but-few-say-it-will-do-a-lot-to-stem-gun-violence/

Prokupecz, S., Friedman, M. J., & Clarke, R. (2022, November 14). *Exclusive: New audio of phone call shows for the first time that a senior Uvalde officer was told children needed to be rescued from inside a classroom*. CNN. https://www.cnn.com/2022/11/14/us/uvalde-investigation-acting-police-chief-mariano-pargas/index.html

Queen, J. (2022, November 22). *Alex Jones loses bid to slash $50 million Sandy Hook defamation verdict*. Reuters. https://www.reuters.com/legal/alex-jones-loses-bid-slash-50-million-sandy-hook-defamation-verdict-2022-11-22/

Rajadesingan, A., & Liu, H. (2014). Identifying users with opposing opinions in Twitter debates. In W. G. Kennedy, N. Agarwal, & S. J. Yang (Eds.), *Lecture notes in computer science: Vol 83933. Social computing, behavioral-cultural modeling and prediction* (pp. 153–160). Springer. https://doi.org/10.1007/978-3-319-05579-4_19

Roberts, M., Wanta, W., & Dzwo, T.-H. (Dustin). (2002). Agenda setting and issue salience online. *Communication Research*, *29*(4), 452–465. https://doi.org/10.1177/0093650202029004004

Russell Neuman, W., Guggenheim, L., Mo Jang, S., & Bae, S. Y. (2014). The dynamics of

    public attention: Agenda-setting theory meets big data. *Journal of Communication*, *64*(2),

    193–214. https://doi.org/10.1111/jcom.12088

Sanchez, R. & Tucker, E. (2022, November 21). *Since Columbine in 1999, Colorado continues*

    to be scarred by mass shootings. CNN. https://edition.cnn.com/2022/11/21/us/colorado-

    mass-shootings/index.html

Scharkow, M., & Vogelgesang, J. (2011). Measuring the public agenda using search engine

    queries. *International Journal of Public Opinion Research*, *23*(1), 104–113.

    https://doi.org/10.1093/ijpor/edq048

Schildkraut, J., Elsass, H. J., & Meredith, K. (2018). Mass shootings and the media: Why all

    events are not created equal. *Journal of Crime and Justice*, *41*(3), 223–243.

Schumacher, S., Kirzinger, A., Presiado, M., Valdes, I., & Brodie, M. (2023). *Americans'*

    Experiences With Gun-Related Violence, Injuries, And Deaths. KFF.

    https://www.kff.org/other/poll-finding/americans-experiences-with-gun-related-violence-

    injuries-and-deaths/

Shaw, D. L., McCombs, M. E., Weaver, D. H., & Hamm, B. J. (1999). Individuals, groups, and

    agenda melding: A theory of social dissonance. *International Journal of Public Opinion*

    Research, 11(1), 2–24. https://doi.org/10.1093/ijpor/11.1.2

Shaw, D. L., Minooie, M., Aikat, D., & Vargo, C. (2019). *Agendamelding: News, social media,*

    audiences, and civic community. Peter Lang. https://doi.org/10.3726/b15023

Stroud, N. J. (2010). Polarization and partisan selective exposure. *Journal of Communication,*

    60(3), 556–576. https://doi.org/10.1111/j.1460-2466.2010.01497.x

Tian, H., Zhang, M., Luo, X., Liu, F., & Qiao, Y. (2020). Twitter user location inference based

    on representation learning and label propagation. In Y. Huang, I. King, T.-Y. Liu, &M.

    van Steen (Eds.), *Proceedings of The Web Conference 2020* (pp. 2648–2654).

    Association for Computing Machinery.

Tremayne, M., & Minooie, M. (2013). Opinion leadership on gun control in social networks:

    Preferential attachment versus reciprocal linking. *American Communication Journal*,

    15(4), 34–52.

van Noije, L., Kleinnijenhuis, J., & Oegema, D. (2008). Loss of parliamentary control due to

    mediatization and Europeanization: A longitudinal and cross-sectional analysis of agenda

    building in the United Kingdom and the Netherlands. *British Journal of Political Science*,

    38(3), 455–478. https://doi.org/10.1017/S0007123408000239

Vargo, C. J. (2022). Public "agendamelding" in the United States: Assessing the relative

    influence of different types of online news on partisan agendas from 2015 to 2020.

    Journal of Information Technology & Politics, 19(3), 284–301.

    https://doi.org/10.1080/19331681.2021.1972893

Vargo, C., & Guo, L. (2017). Networks, big data, and intermedia agenda–setting: An analysis of

    traditional, partisan, and emerging online U.S. news. *Journalism & Mass Communication*

    Quarterly, 94(4), 1031–1055. https://doi.org/10.1177/1077699016679976

Vargo, C., Guo, L., & Amazeen, M. (2018). The agenda-setting power of fake news: A big data

    analysis of the online media escape from 2014 to 2016. *New Media & Society, 20*(5),

    2028–2049. https://doi.org/10.1177/1461444817712086

Weaver, D. H. (1977). Political issues and voter need for orientation. In D. L. Shaw and M. E. McCombs (Eds.), *The emergence of American political issues: The agenda-setting function of the press* (pp. 107–120). West Publishing Co.

Wonneberger, A., & Vliegenthart, R. (2021). Agenda-setting effects of climate change litigation: Interrelations across issue levels, media, and politics in the case of Urgenda against the Dutch government. *Environmental Communication*, *15*(5), 699–714. https://doi.org/10.1080/17524032.2021.1889633

Zimmer, M., & Proferes, N. (2014). A topology of Twitter research: Disciplines, methods, and ethics. *Aslib Journal of Information Management, 66*(3), 250-261. https://doi.org/10.1108/AJIM-09-2013-0083

Zimring, F. E. (1968). Is gun control likely to reduce violent killings? *University of Chicago Law Review, 35*(4), 721–737.

Zimring, F. E. (1975). Firearms and federal law: The Gun Control Act of 1968. *The Journal of Legal Studies*, *4*(1), 133–198.

Zucker, H. G. (1978). The variable nature of news media influence. *Annals of the International Communication Association*, *2*(1), 225–240. https://doi.org/10.1080/23808985.1978.11923728

Tables

Table 1. Keywords used for Twitter data retrieval

Keyword type	Keyword
Neutral	gun, guns, firearm, firearms, second amendment, 2nd amendment
Pro gun control	#gunsense, #gunsensepatriot, #votegunsense, #guncontrolnow, #momsdemandaction, #momsdemand, #demandaplan, #nowaynra, #gunskillpeople, #gunviolence, #endgunviolence, #guncontrolnow, #disarmhate, #wearorange, #notonemore, #NewtonBetrayed, #p2, #Gunreformnow, #banassultweapons, #neveragain, #marchforourlives
Pro gun rights	#gunrights, #protect2a, #molonlabe, #molonlab, #noguncontrol, #progun, #nogunregistry, #votegunrights, #firearmrights, #gungrab, #gunfriendly, #ak47, #glock, #nra, #pewpew, #SorryNotSorry, #2A, #NRAAM, #NRAvote, #ArmedCitizen, #standandfight, #NRAstandandfight, #NRAAllAccess

Table 2. Predictors of issue salience for gun salience – all audiences

Conservatives		Liberals		Moderates		Everyone	
Independent Variable	β	Independent Variable	β	Independent Variable	β	Independent Variable	β
mass shootings lag1	1.22	mass shootings lag1	0.98	mass shootings lag1	1.01	mass shootings lag1	1.47
shootings lag1	1.22	shootings lag1	0.98	shootings lag1	1.01	shootings lag1	1.47
neutral gun nfo lag1	0.90	neutral gun nfo	0.84	neutral gun nfo lag1	0.73	neutral gun nfo lag1	0.78
left media	0.55	neutral gun nfo lag1	0.64	left media	0.63	neutral gun nfo	0.67
neutral gun nfo	0.37	pro gun nfo	0.56	neutral gun nfo	0.62	left media	0.66
pro gun nfo	0.19	left media	0.51	pro gun nfo	0.30	pro gun nfo	0.35
left media lag1	0.17	right media	0.43	right media lag1	0.15	right media	0.13
killed	0.14	killed	0.15	mass shootings	0.08	killed	0.07
right media	0.06	anti gun nfo lag1	0.12	shootings	0.08	left media lag1	0.06
pro gun nfo lag1	0.02	left media lag1	0.09	right media	0.04	right media lag1	0.06
twitter proguns lag1	0.00	right media lag1	0.04	twitter proguns	0.00	twitter proguns	0.00
twitter procontrol	0.00	anti gun nfo	0.02	twitter procontrol	0.00	twitter procontrol	0.00
twitter procontrol lag1	0.00	twitter proguns	0.00	twitter neutral lag1	0.00	twitter neutral lag1	0.00
twitter neutral lag1	0.00	twitter neutral lag1	0.00	twitter procontrol lag1	0.00	twitter procontrol lag1	0.00
twitter neutral	0.00	twitter procontrol	0.00	twitter neutral	0.00	twitter neutral	0.00
traditional media	0.00	twitter procontrol lag1	0.00	traditional media lag1	0.00	traditional media lag1	0.00
traditional media lag1	0.00	twitter neutral	0.00	twitter proguns lag1	0.00	twitter proguns lag1	0.00
twitter proguns	0.00	twitter proguns lag1	0.00	traditional media	0.00	traditional media	0.00
right media lag1	-0.07	traditional media lag1	0.00	left media lag1	-0.01	anti gun nfo lag1	-0.02
anti gun nfo	-0.21	traditional media	0.00	anti gun nfo lag1	-0.05	anti gun nfo	-0.05
anti gun nfo lag1	-0.22	killed lag1	-0.17	anti gun nfo	-0.15	pro gun nfo lag1	-0.18
killed lag1	-0.42	pro gun nfo lag1	-0.42	killed lag1	-0.20	killed lag1	-0.35
shootings	-0.75	shootings	-1.89	pro gun nfo lag1	-0.22	shootings	-1.16
mass shootings	-0.75	mass shootings	-1.89	killed	-0.41	mass shootings	-1.16

Model Type	Ridge	Model Type	Ridge	Model Type	Ridge	Model Type	Ridge
R-squared	0.89	R-squared	0.71	R-squared	0.82	R-squared	0.84
MSE	21.79	MSE	128.89	MSE	48.01	MSE	42.83
Durbin-Watson	1.88	Durbin-Watson	1.51	Durbin-Watson	2.10	Durbin-Watson	2.01

Figures

Figure 1. Amount of individuals who reported gun control as a MIP, by partisanship
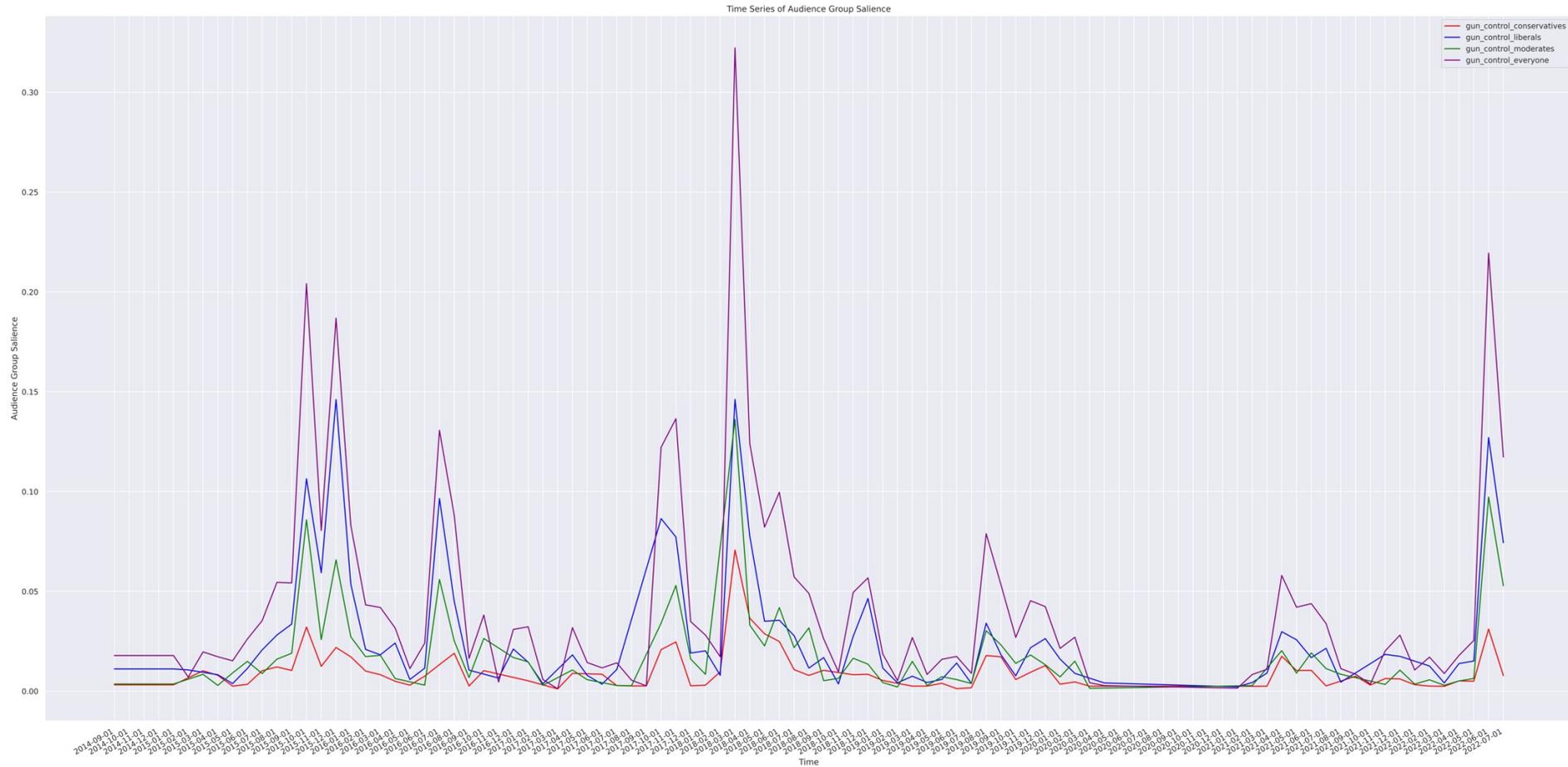
Vertical axis can be interpreted as the amount of individuals who reported "gun control" as a MIP (e.g., .14 = 14%).

List of Figures