

Higher volume, same tune: How political talk radio reacts to events

Anonymized version

February 7, 2020

Abstract

In this paper, I ask what strategies partisan media use to fit real-world events into ideological narratives. I look at whether or not they connect events to related political issues (e.g. hurricanes and climate change), and whether each side is able to fit events into its existing set of issue positions. Using natural language processing and crowd-sourcing, I analyze almost 2 million hours of radio from hundreds of talk shows. I find that in the aftermath of an event, both ideological sides give far more attention to related political issues. At the same time, there are huge gaps between the positions that liberal and conservative shows tend to take on those issues, and events do very little to close those gaps. Events turn up the volume of the discussion, without changing its ideological tune. This way, shared experiences could be turned into polarizing factors.

Word count: 8,978

These things have become very politicized as you know, folks. Hurricanes and hurricane forecasting is much like much else that the left has gotten its hands on [...]. The forecast and the destruction potential doom and gloom is all to heighten the belief in climate change.

—Rush Limbaugh, September 11, 2018

1 Introduction

More and more Americans get their political information and opinions from non-mainstream media, such as opinion blogs, podcasts and talk radio shows (Prior, 2013; Levendusky, 2013). Producers of these types of media (also known as new or alternative media) often feel less bound by journalistic norms such as accuracy, objectivity, or fairness. Instead, many have an ideological bias that informs the content they create. Moreover, the “big three” cable news channels (Fox News, CNN and MSNBC) have also developed a consistent political leaning (Ad Fontes Media, 2019; Martin & Yurukoglu, 2014; Sullivan, 2019; Van Zandt, 2019). Together, these outlets make up the landscape of so-called partisan media in the United States. And while we know more and more about the effects of such media, we have less systematic knowledge about the content they create. What kind of messaging can we actually expect to hear and see on these outlets? How exactly do they manage to report on the world in a way that is ideologically consistent?

In this paper, I investigate two strategies that media elites might use in producing partisan content—focusing on the way they talk about issues in response to newsworthy events. The first strategy I look at, is the decision whether to spend time discussing a real-world event, and whether to make the connection between the event and a related political topic. For example, conservative outlets may be less likely to report on a hurricane, and/or less likely to discuss climate change in its reporting on a storm. A second strategy is not to let

real-world events change the (ideologically motivated) mix of issue positions represented on the outlet. This implies that if the outlet reports on the event, it will have to give meaning to what happened in a way that is consistent with its ideological slant. For example, if liberal shows tend to talk about climate change in a concerned way, after a hurricane hits the US, they can hold on to this issue position by portraying the event as evidence for climate change. Conservative hosts can hold on to a skeptical position by interpreting the event as irrelevant to the existence of climate change.

The analyses in this paper are based on the largest-ever collection of talk radio content. It consists of audio recordings and speech-to-text transcriptions for almost 2 million hours of talk radio. Altogether, the data cover over 1,000 radio shows, with almost 220,000 episodes between them. I use natural language processing and crowd-sourcing to take full advantage of this previously unseen amount of data. Radio is a prime example of a partisan medium in the United States. It is also an impactful medium on its own. 17% of American adults listen to terrestrial (offline) talk radio each week—the same weekly audience reach as Twitter (Pew Research Center, 2018). Because these listeners are older than the average American, they are very politically engaged (US Census Bureau, 2019; Schaffner *et al.*, 2019). Democrats and Republicans listen to talk radio at similar rates (Pew Research Center, 2006).

In my analyses, I focus on partisan discussion of three issues (climate change, gun policy and immigration), in response to three types of events that are relevant to those topics (hurricanes, mass shootings, and immigrant family separation). I find that regardless of the show’s leaning, newsworthy events always cause a spike in discussion of political issues relevant to them. In other words, downplaying events or their connections to political issues is surprisingly rare as a strategy among partisan outlets. I also show that at baseline, political talk shows are strongly ideologically sorted in the way they discuss these issues—and that events do very little to change this sorting. On both ideological sides, the balance of positions about climate change and immigration after an event is not

different from the balance just before. In the case of gun policy, both sides move somewhat in the direction of an anti-gun position.

In sum, I find that partisan media producers do not selectively downplay newsworthy events or their connections to issues. However, the effect of events is to amplify an already ideologically consistent discussion of those issues. In other words, after an event that is related to a political issue, listeners are much more likely to hear ideologically colored discussion of that issue. This is especially important given that people, if their media habits expose them to political information at all, tend to get this information from sources on their own side of the political spectrum (e.g. Iyengar *et al.* 2008; Taber & Lodge 2006; Stroud 2011). For instance, Republicans who tune in to conservative radio shows are much more likely to be exposed to climate skepticism after a hurricane than they were just before. It means that events, rather than getting people on the same page about a political issue, could actually have a polarizing effect.

1.1 Creating partisan media content

Recently, the US has seen an increase in media options with an ideological bias. This bias can be explicit, or implicit in the content produced, so that arguably neutral observers (e.g. researchers, experts and watchdog organizations) tend to agree on their slant. We call these outlets “partisan media”. This does not mean that they are aligned with a political party—on the contrary, some have a fairly hostile relationship with the party that is on their side of the ideological divide (see, e.g., Calmes 2015). They do, however, favor one end of the ideological spectrum.

There are two possible drivers behind the supply of partisan media content to the American public. The first would be that audiences prefer slanted content (Mullainathan & Shleifer, 2005). There are reasons to believe, however, that US media (and partisan media in particular) are more ideologically sorted than the public demands. In the case of newspapers, Gentzkow & Shapiro (2010) show that only about 20% of the ideological slant (as measured by word usage)

can be explained by audience demand. Moreover, newspapers' slant is subtle compared to other media (Prior, 2013). As for talk radio, among people who use it as their prime source of news on politics, 56% are not ideologically consistent in their opinions, according to the Pew Research Center (2014). This is about the same proportion as in the US population. Even among people who use the highly opinionated Rush Limbaugh Show as their prime source, 45% are not consistent. For local talk radio, it is 66%. Radio shows are far more polarized than we would expect based on the preferences of their (potential) audiences (Berry & Sobieraj, 2013, p. 74). Indeed, according to Republican insiders, conservative media take positions on issues like climate change and immigration that go against societal trends, even trends among Republicans (Calmes, 2015).

The second possibility is that outlet owners or content makers prefer ideologically colored content. Evidence from newspapers suggests that outlet ownership is not a driver of slant (Gentzkow & Shapiro, 2010). In the case of radio stations, minority-owned talk and news stations carry more progressive and fewer conservative shows (The Center for American Progress and Free Press, 2007). As for content producers, we can expect these elites to be excellent at fitting new information into a pre-existing worldview—since that skill is correlated with both political interest and strength of partisanship (Taber & Lodge, 2006). Different supply-side reasons are difficult to separate from one another (e.g., conservative station owners may attract hosts who are personally willing and eager to spread a conservative message). But the evidence suggests that together, they make for a good explanation of ideological media content.

Whatever the reasons behind ideological media content may be, researchers agree that there is a larger and larger offering of partisan media in the US (Prior, 2013; Levendusky, 2013). However, we do not have much systematic knowledge about what is actually being said on partisan media. Martin & Yurukoglu (2014) place cable news outlets on an ideological scale, based on their word content. A number of studies discuss how partisan media report on stories about parties and politicians (Groeling, 2008; Puglisi & Snyder, 2011;

Baum & Groeling, 2008). Large-n studies of political talk radio are particularly rare, because audio is so challenging to process at a bigger scale. One example is Barker (2002), who counted the topics that radio host Rush Limbaugh talked about in the course of two years.

In this study, I take advantage of an unusually large talk radio data set, in order to study how partisan media talk about specific political topics—climate, gun policy, and immigration. In particular, I look at how they produce ideologically motivated content in the face of real-world events. I propose two strategies that partisan content-makers may use to make sure their response to events is in line with their ideological positions.

1.1.1 Partisan agendas

The first strategy I propose revolves around agenda-setting decisions—that is, choices about what to talk about in the aftermath of an event. There are two variants of this strategy: strategically giving less attention to events; and strategically choosing which political topics to connect them to.

In the first variant, a media outlet pays less attention to events that are less compatible with its ideological bias. This idea—that slanted media selectively ignore inconvenient stories—is very popular in political conversations today. Groeling (2008) shows that CBS, NBC and (to a lesser extent) ABC all appeared to have a preference for reporting polls showing approval gains for Bill Clinton and approval losses for G.W Bush. Fox News had the opposite tendency. Puglisi & Snyder (2011) find that slanted newspapers tend to give more coverage to scandals involving the “other” side, and less to those involving their own. Finally, Baum & Groeling (2008) show that compared to the presumably neutral baselines of Associated Press and Reuters, both Fox News and the left-leaning blog DailyKos clearly give more attention to stories that fit their partisan narrative (so does the right-leaning blog FreeRepublic, but only under certain specifications).

A second variant of strategic agenda-setting would involve reporting on

events, but being selective about which political topics to connect them to. This would be an obvious extension to the first strategy. According to Baum & Groeling (2008), the “newsworthiness” of a story has no significant impact on whether the story gets covered by these partisan outlets. Similarly, we could imagine that the “relevance” of a story to a political issue has no bearing on whether a partisan outlet connects the two. While there seem to be no studies to date of partisan issue coverage in response to events, a few pieces of evidence exist about partisan media agenda-setting in general. Puglisi (2011) reveals that during presidential campaigns with Republican incumbents, the New York Times pays particular attention to campaign topics that are “owned” by the Democratic party. While the Times can choose from a range of topics that are all relevant to the campaign, its actual agenda reflects a partisan bias. And Larcinese *et al.* (2011) show that newspapers give more coverage some economic topics (unemployment and, to a lesser extent, trade and budget deficits) when the current numbers support the partisan side that the paper is on.

Even though it is talked about less, and studied less, this second agenda-setting strategy seems to be the most feasible of the two, especially in the case of major events. Since media content producers have to fill publishing space or airtime, perhaps they cannot afford to selectively cover events. This may be especially true for radio hosts, who often fill one or more hours a day, using limited resources. But it is quite clear that content makers need not connect events to specific political issues. In fact, studies on agenda setting in mainstream media show that this selection happens even when there are no partisan filters on content production. For example, Best (2010) shows that most of the news coverage triggered by events related to homeless people does not mention homelessness as a societal issue. Instead, coverage focuses on individual causes of the problem. Similarly, hurricanes could easily be covered without any reference to climate change.

1.1.2 Partisan issue positions

The second strategy that partisan media could use, is to feature only, or mostly, ideologically consistent positions on the topics they cover. They can do this both on a day-to-day basis and in response to events. The limited large-n evidence that exists on US talk radio content already suggest that partisan shows tend to present only one side of each issue. Listening to 100 hours of political talk radio, Berry & Sobieraj’s (2013) find only 72 instances of confrontation between two points of view (or “sparring”). This is because show producers almost never give airtime to guests or callers who disagree with the show’s host. To compare, language painting political “others” as ideologically extreme was used 288 times. As a result, looking at specific issue-positions represented on political talk shows, I expect to see messaging that is ideologically consistent most of the time.

An open question, however, is whether partisan media are able to hold on to their ideological issue positions in the face of unusual real-world events. Perhaps newsworthy events with strong connections to political topics have the power to (at least temporarily) change the balance of positions on those topics, even in partisan media. In fact, each of the event types that I study here—hurricanes, mass shootings and family separation—has changed partisan perceptions of a political issue in one way or another. For example, Visconti & Young (2019) find that disasters such as hurricanes and floods influence Americans’ climate beliefs—despite there not being strong evidence for a connection between Atlantic hurricanes and climate change (Geophysical Fluid Dynamics Laboratory, 2019). Newman & Hartman (2017) show that people who live nearby the site of a mass shooting become more likely to support stricter gun control, regardless of their partisanship. Finally, president Trump’s policy of separating families at the border divided Republicans in Congress: most stayed silent, but a significant group spoke out against the policy (Phillips, 2018). Ordinary Republicans were also split in their opinions (Quinnipac University, 2018).

On the other hand, it is clear that even extreme events can be filtered through

an ideological lens. The same event can be spun to support opposite issue positions, for instance by strategically pointing to different causes of the event, or by portraying the event as either good or bad. Bisgaard (2015) presents a neat example of ordinary citizens doing just that. He finds that in the UK after the Great Recession, both Conservative and Labour partisans agreed on the fact that the economy had gotten worse under a Labour government. However, Conservatives tended to say that the government was responsible for the economic situation, whereas Labour adherents said it was not. A similar story could explain why mass shootings are followed by laws that loosen gun control in Republican-controlled state legislatures, but cause no change in Democrat-controlled states (Luca *et al.*, 2019). While most Republicans believe that gun violence can be solved with broader gun ownership, most Democrats believe the opposite. This is true for both party elites and the public (Pew Research Center, 2019; Spitzer, 2011). These findings make clear how partisan thinkers might come away with different interpretations of the very same event.

In sum, I propose that partisan media could employ two strategies to cover events in a way that aligns with their ideological message. First, outlets could choose not to pay attention to a political topic related to the event—either by ignoring the event itself, or by not connecting it to the topic. Second, they may not change the positions they take on the topic, instead fitting the event into their existing position. In this paper, I show that the first strategy is rare, while the second is common.

1.2 Implications: audience effects

A key reason to care about the content of partisan media is its potential effect on the public. To understand these effects, we can lean on two existing findings about media audiences. First, we know that Americans tend to select news and information sources that match their partisan leaning (“selective exposure”)—despite the fact that the majority of Democrats and Republicans say they prefer news with no particular point of view (Pew Research Center, 2013). We see

this behavior in both experimental (Iyengar *et al.* , 2008; Iyengar & Hahn, 2009; Taber & Lodge, 2006) and observational studies (Stroud, 2008, 2011). As a result, partisan position-taking would mean that media consumers on each ideological side would get far more exposure to one issue position than the other.

Second, there is at least some evidence that the positions taken in partisan media can affect people’s opinions about political issues. In an experimental setting, Levendusky (2013) finds lasting, polarizing effects of like-minded news programs, whereas programs from the “other side” have no effect. In the real world, Stroud (2010) shows that selective media exposure predicts future polarization of opinions about presidential candidates. Turning to talk radio, Barker & Knight (2000) find that Rush Limbaugh listeners develop more negative attitudes about topics and people that the radio host gives a lot of negative attention to. Not all evidence on partisan media effects points in this direction: other studies have found no effect, also from talk radio (Arceneaux & Johnson, 2010; Yanovitzky & Cappella, 2001). Nonetheless, there is a distinct possibility that partisan media can influence the issue opinions of their audience, especially in the presence of selective exposure.

Relying on these pieces of evidence, we can see that different combinations of partisan media strategies could produce very different audience effects. Table 1 specifies the likely audience effects, based on existing literature, of each combination of partisan media strategies in the face of an event. If there is no partisan filter on agendas (i.e. discussion of issues increases on both sides), and the event decreases partisan position-taking, then events could lead to depolarization on both ideological sides. If agenda-setting is partisan (i.e. one side avoids discussing the issue), but the event is able to force a decrease in partisan position-taking, then there will be a depolarizing effect concentrated on the side that gave attention to the issue. If events do nothing to change the mix of issue positions taken on each side, or if they increase the partisan gap in positions taken, then they could have a polarizing effect on opinions. This is especially true if agenda-setting is *not* partisan, because in that case, partisan messaging

Table 1: Possible reactions events in partisan media, and their likely effects on audiences.

attention to topic	positions taken	audience effect
increased on one side	less partisan	depolarization on one side
increased on both sides	less partisan	depolarization on both sides
increased on one side	as or more partisan	polarization on one side
increased on both sides	as or more partisan	polarization on both sides

about the topic will be amplified on both sides.

In these predictions, I have treated agenda-setting essentially as a multiplier on the effects of position-taking. That is, when an issue appears on the agenda of a partisan outlet, then consumers of that outlet are exposed to a larger number of (potentially partisan) messages about that issue (cf. Barker 2002). This is different from the agenda-setting effects that are theorized, and found, in studies of mainstream media. In those media, attention to political issues primarily causes those issues to become more salient—that is, to be perceived as more important problems (Cohen, 1963; Feezell, 2018; Iyengar *et al.*, 1987; King *et al.*, 2017; McCombs & Shaw, 1972; McCombs *et al.*, 2010; Weaver *et al.*, 1981). Partisan media are different in that when they bring up an issue, they typically take an implicit or explicit position on that issue. In fact, the message they send might well be that the issue is *not* an important societal problem (e.g., liberal coverage of immigration). As a result, there is no reason to think that even coverage of an issue on liberal and conservative outlets would lead to even perceptions of issue salience.

2 Methods

2.1 Data and design

In this paper, I shed light on the content of partisan media by looking at one-and-a-half year’s worth of US political talk radio. I define political talk radio as any radio show where one or more hosts (and possibly guests or callers) talk about current affairs. Earlier definitions of talk radio include callers as a

defining characteristic (Barker & Knight, 2000; Berry & Sobieraj, 2011). This would exclude news and “in-depth” current affairs shows such as those produced by public radio networks. Since I am interested in all shows from which listeners can learn about political topics, my definition includes both of these show types. Later, I show that news and public radio shows do not behave differently from other political shows—and that the paper’s results hold whether or not we include them (see section 4.2).

The raw data consist of continuous recordings, and transcriptions, of the live internet streams of a large set of radio stations. They were collected by [data source redacted for anonymization]. Together, these stations broadcast over 1,000 unique radio shows. Supplemental Information section 1 provides more details about this data set, including station locations, how station characteristics compare to the population of US talk radio stations, and transcription quality.

I analyze discussions of three political topics (climate change, gun policy and immigration) on each show, in the weeks before and after a relevant event happened. Shows are produced relatively independently from one another, making them a sensible observational unit of radio content.¹ And because almost all shows are broadcast according to a weekly schedule (e.g., one episode per week-day), it makes sense to bundle content into weeks rather than, say, days. The unit of analysis, then, is the radio show-week. The total number of show-weeks in the analyses depends on the topic and which events it is connected to. The number of radio stations in the data set was gradually ramped up, so if an event happened later in the period, more political shows were being captured at the time. I also cover a different number of events for each topic: two for climate change, three for gun policy, and one for immigration. In total, I have 1616 show-weeks for climate, 2176 for gun policy, and 600 for immigration.

Below, I discuss my choice of topics and events. The dependent variables

¹The exception is that shows licensed to the same network may be subject to a common set of pressures about content, including a set of legal and moral rules called Standards and Practices.

are the number of times a political topic was mentioned on a show, and the positions that those mentions support. The independent variables are whether we are looking at show content from before or after a major event; and whether the political talk show leans liberal or conservative. Each of these variables poses its own set of measurement challenges. Figure 1 illustrates the full project workflow.

2.2 Selecting issues and events

The issues I look at in this study are climate, gun policy and immigration. I choose these topics because they span different degrees of salience in current American politics. In the course of 2019, when asked to name the most important problem facing the country, 3–6% of Americans mentioned the environment, pollution or climate change (Gallup, 2019b). Among environmental issues, however, Americans tend to be more concerned about local pollution than about climate change (Gallup, 2019a). 1–8% brought up guns or gun control, and another 1–4% mentioned crime or violence. Finally, 11–27% named immigration, making it the second-most-mentioned issue. The attention given to these topics on political talk shows reflects these different levels of salience. At baseline, in the week before a relevant event happens, climate change and gun policy are mentioned less than twice on the average radio show. Immigration is mentioned nine times.

Another benefit of these topics is that each one can be clearly connected to one or more newsworthy events: hurricanes for climate change, mass shootings for gun policy; and for immigration, the outburst of attention to families being separated at the US-Mexican border. As noted above, each of these event types is known to have influenced partisan opinions on the relevant topic in one way or another. Finally, discussion of these topics can be easily identified through a small number of topic-related terms (see below).

The specific events I study here were the most newsworthy of their kind in the observed period. For the topic of climate change, I use the two hurricanes



Figure 1: The project workflow, from data over dependent variable (topic mentions and positions) and independent variables (pre or post-event week and show ideology), to regression models.

that made landfall in the continental United States: Florence and Michael. For gun policy, I look at three mass shootings that received broad attention: Santa Fe High School, Jacksonville Landing, and the Pittsburgh Synagogue shooting.² For immigration, I use the sharp outbreak of public attention to President Trump’s policy of separating immigrant children from their parents at the US–Mexican border in June 2018. Based on Google searches for “immigration”, this (and not, surprisingly, the announcement of the administration’s policy two months earlier) was by far the most noteworthy immigration event in the period covered by the data.

2.3 Topic mentions: count and position

The key dependent variables in this study are the number of occasions where a speaker on each show mentioned a political topic, and percentage of those mentions that support a particular position. A topic mention is simply an occasion where the algorithm recognized a topic-relevant term in the speech produced by a radio show. The terms for each topic are:

- climate change, global warming
- gun control, gun right(s), second amendment, gun owner(ship), anti-gun, pro-gun, gun violence
- immigration, immigrant, migration, migrant

Shows that are broadcast on several of the recorded stations only have their mentions counted once. I make use of the transcripts from all of the broadcasts, however, in order to help deal with any errors in the transcript of any given broadcast. Supplemental Information section 2 goes into more detail on this process.

Once I had a list of mentions for each radio show, workers on Amazon’s crowd-sourcing platform Mechanical Turk coded the position of the mentions.

²Another mass shooting happened in Thousand Oaks, California, just eleven days after Pittsburgh event. I did not include the Thousand Oaks shooting, as its pre-week would overlap with the Pittsburgh post-week.

They did this by listening to a 30-second audio fragment surrounding the mention of the topic. Workers coded a sample of 25 mentions per show-week (or fewer, of course, if there were fewer than 25 mentions in that week). This amounted to about 4300 out of 4900 mentions for climate change, 5050 out of 5650 mentions for gun policy, and 7350 out of 15500 mentions for immigration.

For each topic, I asked coders to classify the mention into one of two issue positions:

- climate change: “skeptical” or “convinced”
- gun policy: “pro-gun” or “anti-gun”
- immigration: “supporting immigration” or “tough on immigration”

Coders could also label mentions as taking neither position. I asked two workers to code each mention. If they disagreed, I added a third. Supplemental Information section 3 describes the coding task in more detail. Section 4 details how I modeled the mention counts and positions, and their connections with the independent variables.

2.4 Events: pre- and post-weeks

One of the independent variables in this study is whether a show-week happened just before, or just after an event. In the case of mass shootings, this is clear: since their timing is unpredictable, and they happen over the course of a few hours at most, their media impact starts on the day of the event. In the cases of hurricanes and immigrant family separation, on the other hand, the start of their impact is less clear-cut. For example, the strength and path of hurricanes can be predicted with more and more certainty as they approach, until they eventually make landfall.

I expect events to have media impact once they cross some threshold of social significance—for example, once a hurricane is predicted to hit a populated area. I use search indices to detect when this social threshold is reached. Supplemental

Information section 5 goes into further detail on how I use search data to define pre-event and post-event weeks.

2.5 Classifying shows: politics and ideology

In order to include a show in the analyses, I first need to be able to classify it as political: non-political talk shows (like cooking and gardening shows) are excluded. Second, I need to know whether it has a liberal or a conservative slant. For both decisions, I created bag-of-words classifiers based on all transcribed episodes of the show—typically 14 months’ worth of data.

As a training set, I used the transcripts of 50 shows with known labels. For the training set of the political/non-political classifier, I hand-labeled 33 shows as non-political based on their titles (e.g. “Better Lawns and Gardening”), verified either by their transcript or by looking at the show’s website. For the ideology classifier, I required at least two sources to confirm that a show has either a conservative or a liberal slant. This way, I was able to give an ideological label to 17 shows, which also served as the “political” shows for the political/non-political classifier. The classifiers were trained on the episodes of these hand-labeled shows.

When I tested the trained models on previously unseen (held-out) episodes, the political/non-political model correctly classified all 50 known shows. The conservative/liberal model successfully classified all 17 political shows. Finally, I applied the trained classifiers to all shows, including unlabeled ones. Of the shows labeled as political by the first classifier, the second classifier was able to label the vast majority (94%) as either liberal or conservative with at least fairly high certainty ($> 70\%$). This suggests that even just looking at the words used in these shows, their ideology is quite clear.

Supplemental Information section 6 contains information on the training shows (including sources for the ideological labels) as well as further details on how the classifiers were trained, tuned and tested. Below, in section 4, I show the distribution of show classification probabilities, and what happens to the

analysis results when I vary the decision rules for labeling shows as non-political, conservative and liberal. I also discuss why I treat news and public radio as political, and potentially ideological, shows—and I show that this decision does not affect the paper’s findings.

3 Results

3.1 Agenda-setting: connecting events and issues

The first content production strategy we are interested in, is whether shows downplay events or their connection to political topics. To find out, we can look at how the volume of talk radio discussion on a political topic changes after a relevant event. Figure 2 shows the total number of mentions on conservative and liberal shows, for each topic, in the weeks before and after an event. There are clear effects of events on the number of topic mentions, on both ideological sides.

To verify this, and to control for the total amount of liberal and conservative airtime, I run a negative binomial regression on the number of mentions, with an interaction between event week and ideology (see Supplemental Information section 4 for details). I find that on a conservative show with four hours of airtime, the estimated number of climate mentions increases from 0.8 to 2.0 ($p < .001$). On a liberal show, it increases from 2.2 to 4.1 ($p < .005$). In the case of gun policy, among conservative shows, the number of mentions changes from 2.0 to 3.3 ($p < .001$); among liberal shows, it changes from 0.7 to 1.1 ($p < .01$). The number of immigration mentions on conservative shows changes from 5.1 to 27.4 ($p < .001$); on liberal shows it changes from 8.2 to 17.7 ($p < .05$). The difference between the proportional change on the liberal and conservative sides is significant only in the case of immigration ($p < .005$). Supplemental Information section 7 discusses the longevity of attention after it has peaked.

As these figures and model results show, baseline attention to these political topics depends on the show’s leaning. Looking at pre-event weeks, I find that the

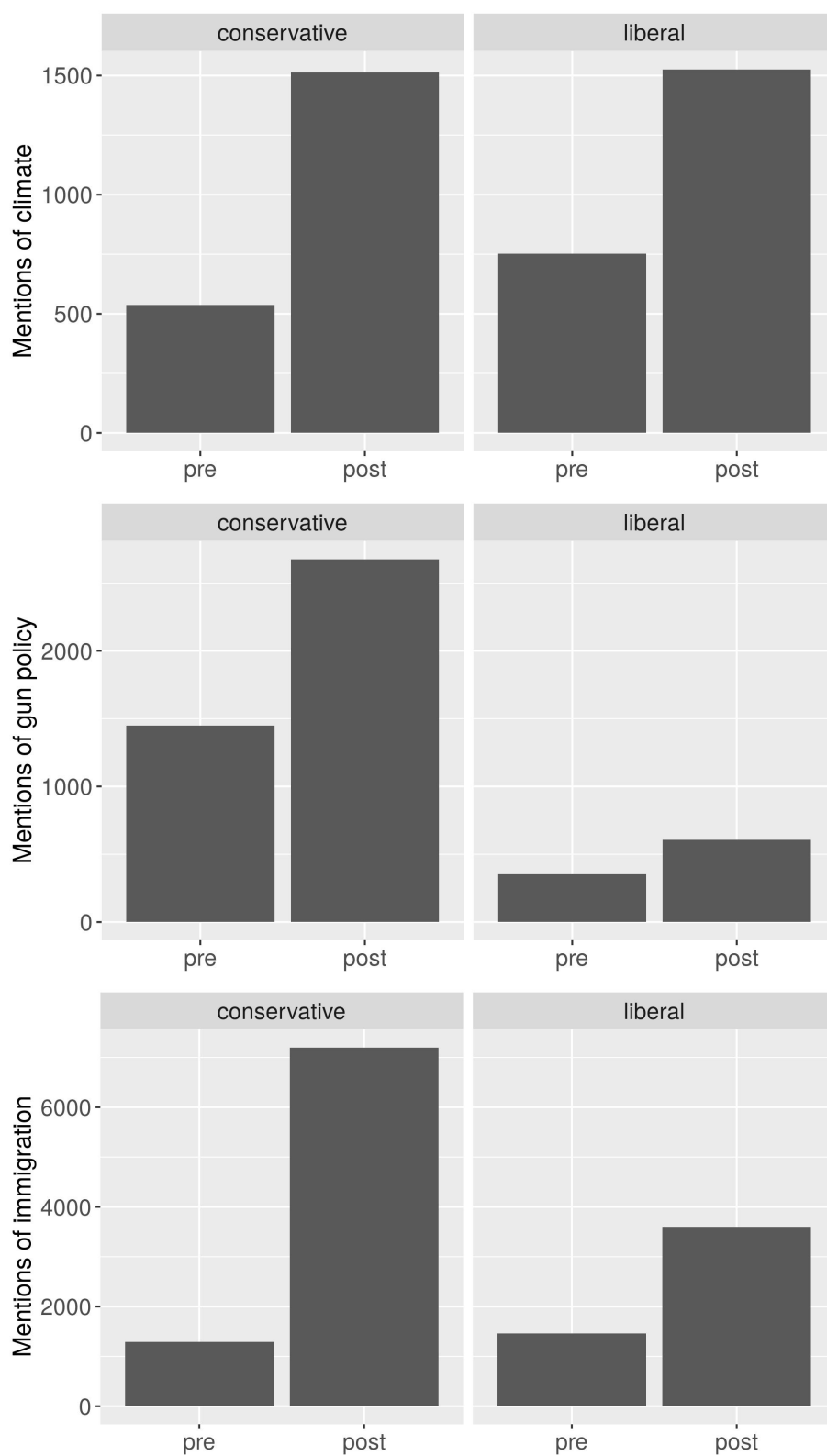


Figure 2: Total number of mentions of climate, gun policy and immigration on conservative and liberal radio shows in the weeks before and after relevant events.

difference in number of topic mentions is significant for climate change, where liberal shows have about twice as many mentions ($p < .001$). Conservative shows have about four times as many gun policy mentions as liberal shows ($p < .01$). Liberal shows have more mentions of immigration at baseline, but the difference with conservative shows is not significant.

3.2 Position-taking: defending issue stances

Next, we want to know whether events change, or instead are fitted into, the mix of issue positions present on partisan outlets. Figure 3 shows the proportions of topic mentions supporting each (or neither) topic position. It is clear that in the week *before* an event, talk about relevant political topics is already very sorted. In the case of climate, “convinced” mentions on conservative shows are fairly uncommon, and “skeptical” mentions on liberal shows are extremely rare. For gun policy, “anti-gun” mentions on conservative shows are a small minority, and so are “pro-gun” mentions on liberal shows. Finally, mentions that are “tough on immigration” are very common on conservative shows, but are a small minority on liberal shows. There are also many “neither” mentions for immigration, both before and after the event. Most of these mentions are simply immigration-related news reports, labeled as neutral by the human coders.

To verify this, I run a fractional logit regression (see again Supplemental Information section 4) on the pre-event weeks only. The dependent variable is the proportion of convinced, anti-gun and “tough on immigration” mentions on each show-week (among all mentions with a position; leaving out the “neither” mentions). I regress this on the ideological leaning of the show. Results confirm that the proportions of convinced climate mentions are vastly different between conservative and liberal shows (conservative: 39%, liberal: 93%, $p < .001$). The same is true for anti-gun mentions (conservative: 22%, liberal: 68%, $p < .001$) and for “tough” immigration mentions (conservative: 70%, liberal: 30%, $p < .001$).

The next question is whether events do anything to change this (im)balance

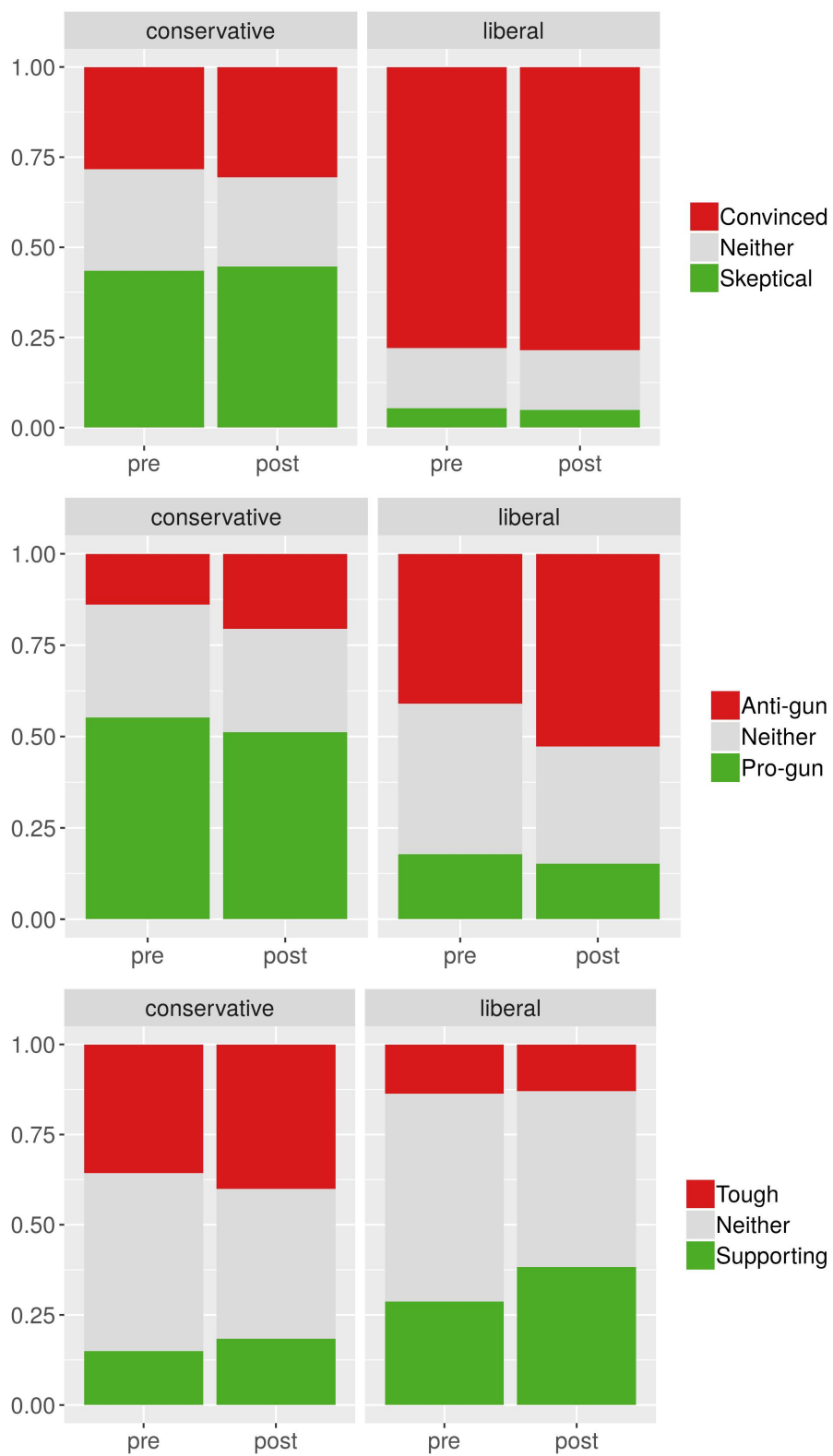


Figure 3: Average proportion of mentions with each position on climate, gun policy and immigration on conservative and liberal radio shows, in the weeks before and after relevant events.

of positions. I apply another fractional logit, now including an interaction between event week (pre or post) and ideology (liberal or conservative). I find that the proportion of convinced climate mentions increases from 39% to 41% among conservative shows, and from 93% to 94% on liberal shows. Neither change is significant. The proportion of anti-gun mentions increases from 22% to 30% among conservative shows, and from 68% to 79% on liberal shows. The change is significant for conservative shows ($p < .01$) and marginally significant for liberal ones ($p < .10$). Finally, the proportion of tough-on-immigration mentions decreases slightly from 70% to 66% among conservative shows, and from 30% to 28% on liberal shows. Neither change is significant. In all three cases, the changes on the two ideological sides are not significantly different from one another.

Finally, we might be interested in how the narratives around each issue differ depending on the speaker's position, and how speakers with different positions react to events in terms of content. Supplemental Information section 8 explores the content of radio fragments supporting different positions (climate skeptical, anti-gun and so on), before and after an event. Most interestingly, the analysis shows that in all cases, speakers on one side of the issue (respectively climate skeptical, pro-gun, and supportive of immigration) are more likely to mention details related to the event. This suggests that perhaps, each event type connects more naturally to one of the issue positions.

This result stands in interesting contrast with the finding in all cases, both ideological sides react to the event by intensifying their discussion of related political topics. Perhaps both sides feel forced to speak about these topics because the mainstream media, or partisan media from the "other" side, are covering them, or because attention to any general theme is an opportunity to spread a partisan message about it. Nonetheless, it appears as if in each case, people on one side of the issue have a harder time fitting the specifics of the event into their existing narrative.

4 Robustness checks

4.1 Show classification thresholds

In the analyses above, shows are classified based on two thresholds. They are considered political if their episodes have an average estimated probability of being political that is greater than 50%. And they are conservative if their average episode's estimated probability of being so is 50% or more; liberal otherwise. The training set for each model is simply a set of shows that could be labeled as non-political, liberal or conservative. This set probably does not reflect the actual balance of show ideologies in the full sample. It is likely, then, that the models' intercept estimates are biased. Moreover, perhaps not all political shows are slanted: it is possible there are moderate shows in the sample, which I am unjustly labeling as ideological.

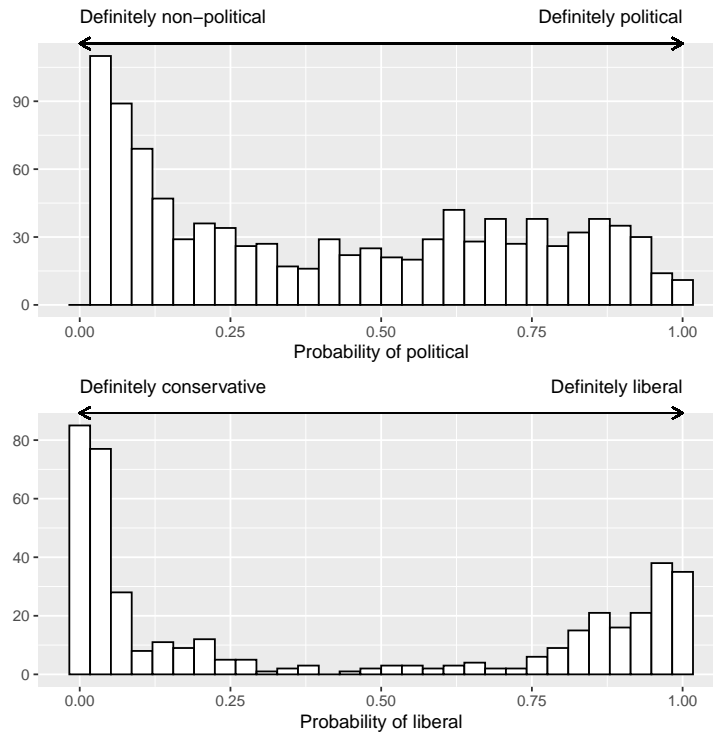


Figure 4: Distribution of prediction probabilities for shows from politicalness and ideology classifiers.

Figure 4 shows the results of the show classification effort. It looks like the choice of ‘politicalness’ threshold could be important, because some shows are in fact difficult to classify. Only 70% of shows can be labeled as political with certainty of 70% or more. In terms of ideology, the picture looks more robust. Fully 94% of political shows get an ideological label with over 70% certainty. Nonetheless, we may be interested in how results change if we exclude shows whose ideological class is unclear.

Here, I repeat the key analyses, varying my decisions about show classes in two ways. First, I move the political decision threshold above or below 50%, biasing the model towards labeling fewer or more shows as political. Second, I create bands around the ideology threshold, excluding shows that the model is uncertain about. For example, I might only include shows for which the classifier is at least 60% certain that they are either liberal or conservative. Table 2 shows the results of the former analysis. Table 3 shows the latter. Neither decision changes the results in any significant way, except that stricter ‘politicalness’ thresholds lead to somewhat more topic mentions at baseline. This makes sense, since I am excluding shows that spend less time covering political topics.

4.2 News and public radio shows

As noted earlier, most of the existing literature has treated news and public radio shows as separate from political talk radio. In this paper, any show that treats topics similar to the political shows in the training set will be classified as political, and therefore be part of the sample. While there are conceptual reasons to include news and public radio shows (i.e., people learn about politics from them), it also turns out that empirically, they are not necessarily more “neutral” than the call-in shows that previous work has focused on. I can also demonstrate that key findings are not affected by the decision to include them.

To inspect news and public radio shows in the current data set, among shows classified as political, I find a set of 25 shows that have the word “news” in their name (e.g. “Alabama Morning News”), and 14 shows that are produced and

threshold	ideology	climate						gun policy						immigration					
		counts		positions		counts		positions		counts		positions		counts		positions			
		pre	post	pre	post	pre	post	pre	post	pre	post	pre	post	pre	post	pre	post		
0.4	conservative	0.7	2.0	39	44	1.8	3.0	23	30	4.6	25.8	67	64						
0.4	liberal	1.7	3.6	93	94	0.6	0.9	67	79	7.0	15.0	28	26						
0.5	conservative	0.8	2.2	39	41	2.0	3.3	22	30	5.1	27.4	70	66						
0.5	liberal	2.0	4.1	93	94	0.7	1.1	68	79	8.2	17.7	30	28						
0.6	conservative	0.9	2.5	38	40	2.2	3.6	21	30	5.2	28.3	70	68						
0.6	liberal	2.1	4.6	93	94	0.7	1.4	68	79	7.0	20.7	28	32						

Table 2: Predicted mention counts and positions (percentage “convinced”, “anti-gun” and “tough on immigration” positions), before and after events, for each political topic. Threshold indicates level of certainty we need in order to call a show “political” and include it in the data set.

threshold	ideology	climate						gun policy						immigration					
		counts		positions		counts		positions		counts		positions		counts		positions			
		pre	post	pre	post	pre	post	pre	post	pre	post	pre	post	pre	post	pre	post		
0.5	conservative	0.8	2.2	39	41	2.0	3.3	22	30	5.1	27.4	70	66						
0.5	liberal	2.0	4.1	93	94	0.7	1.1	68	79	8.2	17.7	30	28						
0.6	conservative	0.8	2.2	37	40	2.0	3.4	21	30	5.1	27.5	71	65						
0.6	liberal	2.0	4.2	94	94	0.7	1.1	68	80	8.3	17.6	30	27						
0.7	conservative	0.8	2.2	36	40	2.1	3.5	21	30	5.2	27.6	71	66						
0.7	liberal	2.1	4.2	96	95	0.7	1.1	69	81	8.7	17.8	29	26						

Table 3: Predicted mention counts and positions (percentage “convinced”, “anti-gun” and “tough on immigration” positions), before and after events, for each political topic. Threshold indicates level of certainty we need in order to call a show “conservative” or “liberal”, and to include it in the data set.

distributed by National Public Radio (NPR). First, I look at whether these shows, when they mention a political topic, tend to take neither of the two established positions. Mentions coded as “neither” are usually presentations of facts or straightforward pieces of news about a topic. Bundling all of the observed weeks, on the topic of climate change, the average news show supports neither position in just 16% of its mentions. The same is true for NPR shows. Talking about gun policy, 33% of mentions on the average news show are neutral in this way. On NPR shows it is 34%. Immigration is the topic that invites the most neutral discussion, with 42% of news mentions and 55% of NPR mentions.

A second possibility is that these shows are neutral in the sense that they present both sides of the story equally, for instance by inviting guests with opposite points of view. However, among the topic mentions that have a position, I do not find this type of balance. In the case of climate change, the average news show dedicates more than 89% of its “positioned” mentions to one side of the issue (be it skeptical or convinced). For the NPR shows, it is 95%. On gun policy, these shows spend 73% of their non-neutral mentions arguing for the same side. For the average NPR show, that is 84%. On the topic of immigration, the average news show has 72% of its positioned mentions supporting the same side. For NPR shows, it is 69%. Not surprisingly, all NPR shows tend to pick the same side (in particular, they overwhelmingly are convinced about climate change), whereas the group of news shows is mixed in the direction of their slant. Crucially, none of the numbers above look much different in the sample of non-news, non-NPR shows.

To check the robustness of these findings, I experiment with different definitions of news and public radio shows, based on what station(s) broadcast(s) them. All US radio stations have a self-selected format that broadly describes their programming, mostly for marketing purposes. An alternative criterion for news shows would be those shows that are broadcast at least one station with the “All News” format. An alternative criterion for public radio shows would be those shows that are broadcast on at least one station with the “Public Radio”

		without news, public				with news, public			
		counts		positions		counts		positions	
topic	ideology	pre	post	pre	post	pre	post	pre	post
climate	conservative	0.8	2.1	38	42	0.8	2.2	39	41
climate	liberal	2.2	4.1	92	94	2.0	4.1	93	94
gun policy	conservative	1.9	3.3	21	29	2.0	3.3	22	30
gun policy	liberal	0.7	1.0	71	77	0.7	1.1	68	79
immigration	conservative	4.3	25.3	70	67	5.1	27.4	70	66
immigration	liberal	7.3	14.5	31	27	8.2	17.7	30	28

Table 4: Predicted mention counts and positions (percentage “convinced”, “anti-gun” and “tough on immigration” positions), before and after events, for each political topic, without and with NPR shows or news shows.

format. These definitions lead to the same conclusion: on news and public radio shows, the discussion of political topics looks no more neutral or balanced than it does on any other political show.

Despite these conceptual and empirical arguments, we might still want to exclude news and public radio shows, in order to stay consistent with previous literature. For that reason, I repeat the analyses, leaving out shows with ‘news’ in the name and shows produced by NPR. I also exclude two NPR shows from the training set for the ideology classifier. This harms performance somewhat: testing the model on the held-out episodes, one liberal show is now classified as conservative. Table 4 shows the results, alongside results *with* NPR and news shows. We can see that the basic thrust is the same.

5 Discussion

In this paper, I investigate the effects of newsworthy events on the discussion of three political topics (climate, gun policy and immigration) on US talk radio. I find that partisan radio shows do not downplay events or their connection to political issues, but they also do not usually change their positions on those issues in response to events. In other words, events tend to amplify, but not change, the messages being sent on political radio shows.

In find that in all cases, the event comes with a sharp increase in the total

volume of the discussion on relevant political topics. The proportional increase in attention is not always even, but surprisingly, it is always substantial on both sides. In the case of climate change, hurricanes draw attention to climate change on both sides. Mass shootings also cause the same proportional increase in gun policy discussions on both sides. In the case of immigration, family separation outrage causes a doubling of attention for liberal shows. The increase for conservative shows is even larger, despite the fact that these shows were paying less attention to immigration before the event. In sum, going against expectations, downplaying the link between an event and a related political issue is not a typical strategy for these partisan outlets.

Further, I find that in the week before an event, discussion of these topics is very much ideologically sorted. That is, when left-leaning shows mention these issues, it is usually in a way that is convinced about climate change, in favor of stricter gun policy, and supportive of immigration. The opposite is true for right-leaning shows. When looking at the effect of events, I rarely find significant shifts in the positions that speakers take. The exception is shootings, which caused moderate increases in the proportion of anti-gun mentions on both sides. It is possible that many events in a row would slowly and cumulatively move positions, perhaps by gradually changing the tide of public opinion (cf. Baumgartner & Jones 2010). However, the fact that in two cases I find no detectable effect immediately after major events speaks against this hypothesis.

This paper shows that events amplify the amount of messaging about related political topics, without changing much about the mix of issue positions. As a result, in partisan media, events could have a polarizing effect, as audiences hear more ideologically motivated messaging on topics related to the event. This is illustrated by a curious finding about hurricane impacts. Usry *et al.* (2019) uncover that in North Carolina, just after hurricane Florence made landfall, highly educated and partisan Republicans became *less* likely to see climate change as a threat. We also know that educated partisans are more likely to listen to like-minded partisan media (Stroud, 2011). If Republican partisans in

North Carolina did so, they likely would have heard far more climate-skeptical messaging just after the hurricane than before.

Finally, partisan media may have an effect on politics whether or not they change audience attitudes—as long as party elites believe that they do. Calmes (2015) presents convincing qualitative evidence that Republican politicians feel pressured by conservative outlets, presumably because of their effect on Republican voters. Talk radio is considered especially influential because it reaches people in rural states, including early primary states. For instance, when House majority leader Eric Cantor decided to soften his position on immigration late in his 2014 campaign, talk show host Laura Ingraham turned against him. She and other hosts are thought to have played a significant role in his primary defeat that year (Caldwell & Diamond, 2014). If politicians notice an increase in ideological messaging about a topic on partisan media, they may shift their own public positions on that topic, regardless of whether the public itself is actually influenced.

5.1 Future work

Having access to over a 1.5 year of continuous speech outputs from more than 1000 radio shows opens up plenty of future research possibilities. First, we might be interested to know whether there are categories of events that are simply too difficult to spin for partisan media producers. These are stories that might be very newsworthy, but that are nonetheless ignored by one side, because it is too challenging to cast them in a particular ideological light. Indeed, all the existing evidence for partisan underreporting of events is about bad news directly involving a party or candidate (Groeling, 2008; Puglisi & Snyder, 2011; Baum & Groeling, 2008). While a mass shooting can be framed as evidence for or evidence against gun control, a decrease in public approval for a president is difficult to spin as a victory for their party. Although talk radio shows are less aligned with political elites than other media (Calmes, 2015), we might still expect liberal shows to underreport bad news for Democrats, and vice versa for

conservatives.

A second, related question is whether there are any less-notable event types that either conservative shows or liberal shows prefer to ignore. The events investigated in this paper are chosen to be very newsworthy. As a result, not reporting on them at all would be a challenge for a political outlet (although not connecting them to specific political issues would still seem to be an option). With slightly smaller-scale events, such as gay pride events or mine closures, disregard could be a viable strategy. As a next step, I could investigate whether this approach exists.

Third, one partisan media strategy that I did not investigate deeply in this paper, is differing baseline attention to political topics. While my analyses show how events influence the agenda, they do not look at how much attention liberal and conservative shows give to different topics in the long run. My findings from pre-event weeks contain hints that a show's average agenda is ideologically informed—for example, liberal shows mention the climate more, conservative shows mention gun policy more. Further analyses, involving a broader range of topics, could show whether liberal and conservative shows tend to pay attention to different baskets of issues.

Finally, the data set includes hundreds of local shows, which are broadcast in only one city or state. As a result, it would be possible to look at how those shows respond to events that are strictly local.³ Hopkins (2018) argues that in the US, local conditions (e.g. air pollution) typically do not get translated into local public opinion about political issues (e.g. support for environmental spending). But there is one exception: when a national debate links the condition to the issue, then localities that are more affected do show more concern, spending support... for the issue. Perhaps the discourse on local outlets reflects this pattern: local events are not connected to issues, unless national media are

³It would also be interesting to know how local shows react to local events that get national attention. While the hurricanes and shootings in this study fit that description, I did not collect enough events to make statistical claims about their local effects. For example, only 13 shows in the data set are local to (i.e., broadcast only in the state of) any of the mass shootings.

already connecting this type of event to that issue.

6 Conclusion

If partisan media elites want to produce ideological content in the face of real-world events, they can take at least two different approaches. The first would be to strategically avoid connecting events to certain political topics. Surprisingly, I do not find much evidence for this strategy in political talk radio: regardless of a show's ideology, events clearly trigger a discussion of the political topics they are related to. The second approach would be to discuss topics in a way that is compatible with the outlet's slant—and fitting post-event discussions into that slant. I find that this strategy is very common. As a result, after a newsworthy event, partisan media audiences will hear a large amount of ideologically consistent discussion of political topics related to the event. On these media, events do not result in a shared narrative—instead, they give rise to two separate stories, with the potential of pushing partisans' understanding of political topics even further apart.

References

- Ad Fontes Media. 2019. *Interactive Media Bias Chart 5.0*.
- Arceneaux, Kevin, & Johnson, Martin. 2010. Does media fragmentation produce mass polarization? Selective exposure and a new era of minimal effects. *Selective Exposure and a New Era of Minimal Effects*.
- Barker, David. 2002. *Rushed to judgment: Talk radio, persuasion, and American political behavior*. Columbia University Press.
- Barker, David, & Knight, Kathleen. 2000. Political talk radio and public opinion. *Public opinion quarterly*, **64**(2), 149–170.

- Baum, Matthew A, & Groeling, Tim. 2008. New media and the polarization of American political discourse. *Political Communication*, **25**(4), 345–365.
- Baumgartner, Frank R, & Jones, Bryan D. 2010. *Agendas and instability in American politics*. University of Chicago Press.
- Berry, Jeffrey M, & Sobieraj, Sarah. 2011. Understanding the rise of talk radio. *PS: Political Science & Politics*, **44**(4), 762–767.
- Berry, Jeffrey M, & Sobieraj, Sarah. 2013. *The outrage industry: Political opinion media and the new incivility*. Oxford University Press.
- Best, Rachel. 2010. Situation or social problem: The influence of events on media coverage of homelessness. *Social Problems*, **57**(1), 74–91.
- Bisgaard, Martin. 2015. Bias will find a way: Economic perceptions, attributions of blame, and partisan-motivated reasoning during crisis. *The Journal of Politics*, **77**(3), 849–860.
- Caldwell, Leigh Ann, & Diamond, Jeremy. 2014. *7 reasons Eric Cantor lost*.
- Calmes, Jackie. 2015. *'They Don't Give A Damn About Governing': Conservative Media's Influence on the Republican Party*. Tech. rept. Cambridge, MA: Shorenstein Center on Media, Politics and Public Policy, Harvard University.
- Cohen, Bernard Cecil. 1963. *Press and foreign policy*. Princeton University Press.
- Feezell, Jessica T. 2018. Agenda setting through social media: The importance of incidental news exposure and social filtering in the digital era. *Political Research Quarterly*, **71**(2), 482–494.
- Gallup. 2019a. *In Depth: Topics A–Z: Environment*.
- Gallup. 2019b. *In Depth: Topics A–Z: Most Important Problem*.
- Gentzkow, Matthew, & Shapiro, Jesse M. 2010. What drives media slant? Evidence from US daily newspapers. *Econometrica*, **78**(1), 35–71.

- Geophysical Fluid Dynamics Laboratory. 2019. *Global Warming and Hurricanes: An Overview of Current Research Results*.
- Groeling, Tim. 2008. Who's the fairest of them all? An empirical test for partisan bias on ABC, CBS, NBC, and Fox News. *Presidential Studies Quarterly*, **38**(4), 631–657.
- Hopkins, Daniel J. 2018. *The Increasingly United States: How and Why American Political Behavior Nationalized*. University of Chicago Press.
- Iyengar, Shanto, & Hahn, Kyu S. 2009. Red media, blue media: Evidence of ideological selectivity in media use. *Journal of communication*, **59**(1), 19–39.
- Iyengar, Shanto, Kinder, Donald R, *et al.* . 1987. News that matters: Agenda-setting and priming in a television age. *News that Matters: Agenda-Setting and Priming in a Television Age*.
- Iyengar, Shanto, Hahn, Kyu S, Krosnick, Jon A, & Walker, John. 2008. Selective exposure to campaign communication: The role of anticipated agreement and issue public membership. *The Journal of Politics*, **70**(1), 186–200.
- King, Gary, Schneer, Benjamin, & White, Ariel. 2017. How the news media activate public expression and influence national agendas. *Science*, **358**(6364), 776–780.
- Larcinese, Valentino, Puglisi, Riccardo, & Snyder Jr, James M. 2011. Partisan bias in economic news: Evidence on the agenda-setting behavior of US newspapers. *Journal of public Economics*, **95**(9-10), 1178–1189.
- Levendusky, Matthew S. 2013. Why do partisan media polarize viewers? *American Journal of Political Science*, **57**(3), 611–623.
- Luca, Michael, Malhotra, Deepak, & Poliquin, Christopher. 2019. *The impact of mass shootings on gun policy*. Tech. rept. National Bureau of Economic Research.

- Martin, Gregory J, & Yurukoglu, Ali. 2014. *Bias in cable news: Real effects and polarization*. National Bureau of Economic Research.
- McCombs, Maxwell, *et al.* . 2010. Extending our theoretical maps: Psychology of agenda-setting. *Central European Journal of Communication*, **3**(05), 197–206.
- McCombs, Maxwell E, & Shaw, Donald L. 1972. The agenda-setting function of mass media. *Public opinion quarterly*, **36**(2), 176–187.
- Mullainathan, Sendhil, & Shleifer, Andrei. 2005. The market for news. *American Economic Review*, **95**(4), 1031–1053.
- Newman, Benjamin J, & Hartman, Todd K. 2017. Mass shootings and public support for gun control. *British Journal of Political Science*, 1–27.
- Pew Research Center. 2006. *Pew Research Center Biennial News Consumption Survey*.
- Pew Research Center. 2013. *Pew Research Center Facebook News Survey*.
- Pew Research Center. 2014. *Deficit Reduction Declines as Policy Priority*. <http://www.people-press.org/files/legacy-pdf/01-27-14\%20Policy\%20Priorities\%20Release.pdf>.
- Pew Research Center. 2018. *January 2018 Core Trends Survey Topline Questionnaire*.
- Pew Research Center. 2019. *7 facts about guns in the U.S.*
- Phillips, Amber. 2018. *How Republicans are divided over Trump’s immigration policy: For it, against it and keeping their mouths shut*.
- Prior, Markus. 2013. Media and Political Polarization. *Annual Review of Political Science*, **16**, 101–27.
- Puglisi, Riccardo. 2011. Being the New York Times: the political behaviour of a newspaper. *The BE Journal of Economic Analysis & Policy*, **11**(1).

- Puglisi, Riccardo, & Snyder, James M. 2011. Newspaper coverage of political scandals. *The Journal of Politics*, **73**(3), 931–950.
- Quinnipiac University. 2018. *Stop taking the kids, 66 percent of U.S. voters say*.
- Schaffner, Brian, Ansolabehere, Stephen, & Luks, Sam. 2019. *CES Common Content, 2018*.
- Spitzer, Robert J. 2011. *The Politics of Gun Control*.
- Stroud, Natalie Jomini. 2008. Media use and political predispositions: Revisiting the concept of selective exposure. *Political Behavior*, **30**(3), 341–366.
- Stroud, Natalie Jomini. 2010. Polarization and partisan selective exposure. *Journal of communication*, **60**(3), 556–576.
- Stroud, Natalie Jomini. 2011. *Niche news: The politics of news choice*. Oxford University Press on Demand.
- Sullivan, Margaret. 2019. *'Birthing centers for polarizing rhetoric': The outside influence of Fox, CNN and MSNBC*.
- Taber, Charles S, & Lodge, Milton. 2006. Motivated skepticism in the evaluation of political beliefs. *American Journal of Political Science*, **50**(3), 755–769.
- The Center for American Progress and Free Press. 2007. *The Structural Imbalance of Political Talk Radio*.
- US Census Bureau. 2019. *Voting and Registration in the Election of November 2018*.
- Usry, Kaye, Husser, Jason, & Sparks, Aaron. 2019. "I'm not a scientist, I just know what I see:" *Hurricane Experiences and Skepticism About Climate Change in a Red State*.
- Van Zandt, Dave. 2019. *Media Bias/Fact Check*.
- Visconti, Giancarlo, & Young, Kayla. 2019. *Do Natural Disasters Change Risk Perceptions and Policy Preferences about Climate Change?*

Weaver, David, Graber, Doris, McCombs, Maxwell, & Eyal, Chaim. 1981. Media agenda-setting in a presidential election: Issues. *Images and Interest, Westport*.

Yanovitzky, Itzhak, & Cappella, Joseph N. 2001. Effect of Call-In Political Talk Radio Shows on Their Audiences: Evidence from a Multi-Wave Panel Analysis. *International Journal of Public Opinion Research*, **13**(4), 377–397.