

Growing Separation in the Television News Audience: Evidence from Three Years of Nielsen Panel Data

ABSTRACT

Partisan echo chambers, and selective exposure to partisan news more generally, are of key concern to communication scholars and the public. Recent research has largely focused on the role of the Internet or social media in catalyzing ideological isolation in the United States, by directing web-users into ‘bubbles’ of congenial information and opinions. However, this program of research risks overstating the polarizing role of the Internet relative to television, which remains the most popular medium among Americans, both for entertainment and for news consumption. Using an extremely large observational panel dataset from the Nielsen Company, we corroborate recent findings that online selective exposure to news is minimal. We then go on to contextualize the scale of online news consumption against television news consumption, and then demonstrate that television audiences have grown increasingly loyal to their preferred television news channels between 2016 and 2018.

KEYWORDS

Television, News, Audience

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1 INTRODUCTION

The hunt for partisan echo chambers in American media systems has gone on for decades. Though the greater concept of selective exposure has been well-studied since the inception of communication research [11], immense academic effort has recently turned toward social media and the Internet [2, 4–6, 8–10, 12–19, 21, 23, 24, 27, 36]. While this line of research is inarguably worthwhile, the enormity of attention on ‘new’ media risks distracting us from the reality of the modal American. Using a massive observational panel dataset of TV and web consumption, we map out the audience of national televised news, and we assess the intra-individual news diets of Americans. Roughly, we find that one third of Americans are not regular television news viewers, and about one third of Americans consume news from relatively diverse set of sources. The remaining share of Americans are cable news viewers loyal to their preferred sources. Loyal audiences of FOX News and MSNBC have grown

between 2016 and 2018, signalling an upward trend in partisan selective exposure. Our results suggest that the magnitude of selective exposure via television is larger than what has been found in similar analyses of online news consumption.

2 BACKGROUND

Echo chambers are defined generally as media environments insulated from opposing views, and are a logical extension of selective exposure to information [20, 34]. Often, they are presented as a spectre that threatens the democratic process; by shrinking the diversity of information within groups, they serve as an obstacle to robust discourse among an electorate that needs to choose between political candidates [3, 22]. Broadly, selective exposure can occur over any medium [11]. As homophilic humans, the opinions held by those around us will likely be quite similar to our own [30]. Still, the Internet has been cast as a particularly treacherous medium for selective exposure, due to its unprecedented capability to corral us into congenial information environments [33, 35]. Some studies have indeed found empirical evidence that Internet usage can catalyze selective exposure and the growth of echo chambers [9, 13, 20, 31, 32], but a growing literature suggests such charges may be premature [1, 2, 10, 15]. Most recently, Guess et al. [17] has used browser data to demonstrate that partisan selective exposure in news-article consumption vanishes when mainstream news aggregators are included as news sites.

At the same time, survey data indicates that television remains more popular than the Internet among Americans, yet television is studied increasingly less [29]. Recent research that *has* examined television news has uncovered dramatic causal connections between programming and voting behavior, meriting further investigation. DellaVigna and Kaplan [7] found a significant increase in Republican vote share in towns with access to Fox News, ranging up to 0.7 percentage points. Martin and Yurukoglu [26] connected variation in channel placement to measure a 0.3 percentage point increase in Republican vote share for each additional 2.5 minutes of Fox News that viewers were induced to watch. Moreover, Martin and McCrain [25] found that changes in local news ownership (i.e., conglomeration by Sinclair) greatly altered the political slant of news programming with only a small impact on viewership, demonstrating that television programming can act as an exogenous influence on political information diets. As yet, there is no observational understanding of how these political information diets are distributed across Americans, nor on how the situation is evolving; this is the gap our study aims to fill. Given that the television is a one-way medium, the strictest definitions of the ‘echo chamber’ as an interactive process do not apply. Instead, our analysis focuses on the core concern associated with echo chambers: homogeneity in information, i.e., selective exposure. To that end, we demonstrate segmentation in the news audience.

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3 ANALYSIS

Our data comes from the Nielsen Company, which maintains a large panel of American households. Panel members agree to have their television habits tracked in exchange for payment, with a subset simultaneously contributing their web browsing logs. Each television inside a participant's household is tracked at a one-minute interval, collecting the television channel program being watched, and the Nielsen-defined content categories associated with that programming. In households with multiple residents, each person is tasked with identifying themselves individually at the onset of television watching, but the data collection is otherwise completely passive. For the subset of individuals who also contribute web-browsing data, tracking software is installed on the user's web browser(s) on the user's primary laptop or desktop computer. Only the 'open' tab of the browser is considered 'active', and the exact URL on that primary tab is recorded.

We make use of three years of panel data; where the maximum duration of any household's participation was 24 months. In total, there were 314,270 unique panel participants in the television panel, and 58,943 individuals who also contributed browsing data. In a given month, the television panel had an average of 92,789 active participants, and there were 11,688 participants on average who were participating in both the television and web panels.

We separate all televised or online content into 'news' and 'non-news' according to two criteria: category definitions maintained by the Nielsen Company, and topical focus. To do so, we identify all individual television programs that the Nielsen Company labels as 'news'. This definition includes political information, political commentary, sports information, weather information, and social/entertainment information (i.e., celebrity gossip); We relabel any news with a topical focus on social/entertainment information as 'non-news'.

To classify web-browsing behavior as 'news consumption' or not, we use Nielsen's domain-level categorization. Over 3,000 unique web domains (out of all web domains accessed by participants) were categorized as a news outlet or a news aggregator (a.k.a., news platforms). These websites include well-known publishers (e.g., nytimes.com), cable-news online (e.g., foxnews.com), local broadcast affiliates online (e.g., abc7.com), small local publications (e.g., lowell-sun.com), specific political outlets (e.g., commondreams.org), government institutions (e.g., state.gov). Remaining websites that were categorized as 'news' by Nielsen but had a specifically non-political focus (e.g., celebrity gossip) were reclassified as 'non-news'.

In Figure 1, we show the scale of television viewing versus online browsing, for both overall media consumption and news consumption specifically. Panel A of Figure 1 shows that a very high density of Americans are consuming an average of up to two hours of television per day, versus just a few minutes of web browsing. Panel B, which shows each individual's consumption of televised and online news, shows that a large share of Americans are not regularly consuming news over either medium. Further, there is a higher density of news consumers who strictly watch televised news (along the x axis) compared to those who strictly source their news from online (along the y axis). As also shown in Panel A, the time spent watching television greatly outsizes the amount of time spent browsing online, for the average American.

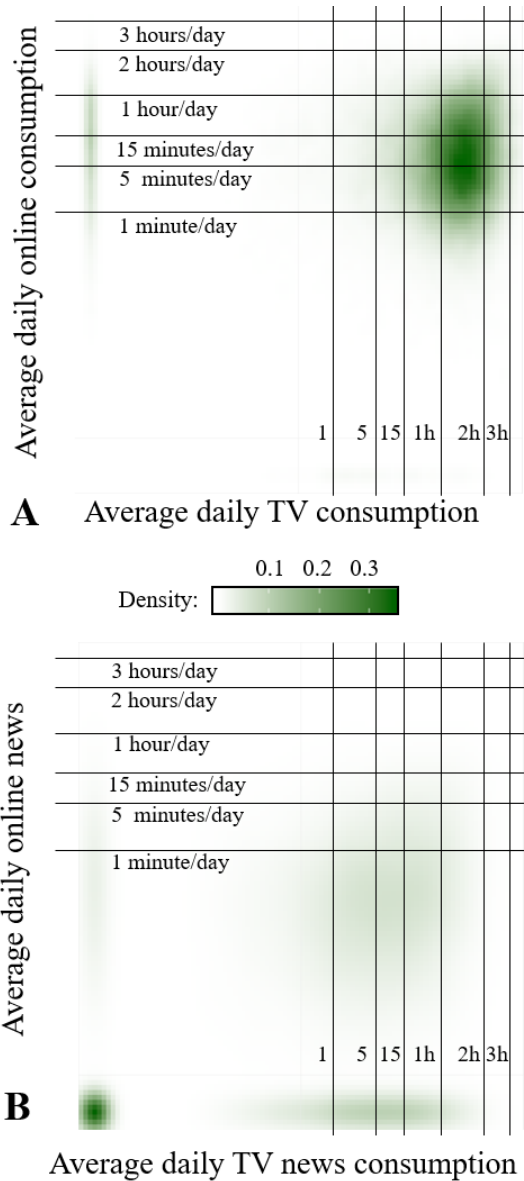


Figure 1: Heatmap of television & web usage
Based on television and web browser data from 40k American adults, weighted to represent the U.S. population.

Next, we break down news consumption into multiple categories, and use this to compare segmentation in the television audience to segmentation in the online audience. Our categorization schema for television news is visualized in Figure 2. First, we aggregate all news programs with a specific topical focus on sports and weather into a single category. Next, we identify over 300 'broadcast affiliate' stations which sourced news programming from large broadcast networks: *ABC*, *CBS*, *CW*, *FOX*, *ION*, *NBC*, and *PBS*. Given the similarity of these networks' programming, we aggregate all such programming into one of two categories: 'hard news' versus 'soft

news' – that is, programming entirely focused on politics and current affairs (e.g., *NBC Nightly News*) versus programming with a small proportion of political content (e.g., *Good Morning America*). We aggregate all Spanish-language news programming into a single category. News programming from cable stations with very low news viewership (e.g., with only one weekly program coded as 'news') were aggregated into a single 'random' news category. Lastly, we relabel news programming from 'FOX Business' as being from the *FOX News Channel* due to topically similarity. The remaining cable channels are *CNN*, *FOX News*, and *MSNBC*. Using these programming categories, we sort the American TV audience into groups based on the source which takes up the majority of their news consumption time. For example, if an individual watches a monthly average of 3 hours of FOX News and 1 hour of MSNBC, they are assigned to the FOX News group. Someone who watches an average of twenty minutes of each is considered to have a mixed diet, and anyone who watches less than thirty minutes of television news per month is considered a non-news viewer.

We apply a similar process to web content and its audience, by identifying three partisan categories of political news websites with national or international-level political news coverage: left-leaning, center, and right-leaning. To do so, we first identify all websites classified as 'news' that reached more than 0.1% of the adult American population, based on nationally representative weights. Websites with smaller audiences are relabeled as non-news do to their niche focus, as were locally-oriented news sites whose audience comprised less than 1% of the American audience. For all remaining sites, we utilize domain-level partisanship scores compiled by Robertson et al. [28] from Twitter consumption data. These scores are based on the sharing of URLs between Twitter users, and are on a continuous scale from -1 (shared only by left-leaning Twitter users) to +1 (shared only by right-leaning Twitter users). Websites with partisan scores > +1 standard deviation from zero are classified as 'right-leaning', and websites with partisan scores < -1 standard deviation from zero are classified as 'left-leaning'. The remainder of the websites are classified as 'center'. We then separate the online audience according to where they source the majority of their online news. For example, individuals who spend > 50% of the online news consumption time on right-leaning websites are assigned to the 'right-leaning' group. Subjects who never access a news website are assigned to a 'non-news consumption' group, and those with no majority news source type are assigned to a 'mixed' consumption group.

In Figure 3 Panel A, we corroborate the findings of Guess (2018), which demonstrated that mainstream news sites and news aggregators dominate online news consumption, and that relatively few people consume news solely from partisan news websites. The percentage of Americans consuming online news solely from partisan sources proves very low and relatively stable over the thirty-six months in our sample – averaging 3.50% for left-leaning sites, and 1.83% for right-leaning sites. If these are the partisan individuals living in online echo chambers, they comprise very little of the American population.

In Figure 3 Panel B, we show the same plot for television viewership. The spike in news viewership is clearly visible during the 2016 election, with an apparent aftershock in January 2017 during the inauguration. Apart from these spikes, segmentation of the TV

		Programming Type			
		Entirely political news	Partially political news	Sports and weather	All else
Television Channels	major broadcast organizations	Aggregated: 'Hard' broadcast	Aggregated: 'Soft' broadcast	Aggregated: Sports and weather	Aggregated: non-news
	major cable news	Named as-is			
	Minor channels	Aggregated: 'random'			
	Spanish-language	Aggregated: Spanish news			

Figure 2: Classification schema for television programming
Not shown: FOX Business Channel is incorporated into FOX News Channel.

American news audience has stayed fairly stable across these three years, with a few notable exceptions. If we consider MSNBC and FOX News as partisan, we see that the size of these audiences is much larger than the comparable left and right groups in Panel A. More interestingly, the share of Americans who source the majority of their television news from either of these sources has been steadily increasing.

4 DISCUSSION & CONCLUSION

Our findings demonstrate multiple important features of the American news environment. Foremost, the television commands much more attention than does online browsing. Even as the magnitude of online echo chambers is still being evaluated, the relatively gargantuan amount of time that Americans spend consuming television, and television news, offers important contextualization. Rather than being an outdated medium, television presents a surprisingly advanced case of audience separation that aligns well with modern concerns of selective exposure. Especially interesting is the increase in audience separation in the TV, which is not evident online.

We recognize two key differences in the online and televised news environments that need to be further explored. First, the commensurability of time across the two media formats is not well-established. How similar, informative, or evocative is one minute of television news compared to one minute of online news? While our study analyzes the absolute amounts of time spent by each individual with either information source, it is another task entirely to connect these levels of incoming information with real-world political outcomes. Second, our methodology is unable to count political information consumed directly from social media. However, our analysis includes all political articles arrived at *via* social media, which presumably demonstrates higher engagement than political news that was merely scrolled by on a news feed.

Lastly, the overlap in the online and offline news audience has clear implications for future research on echo chambers and selective exposure. Even if an individual is found to have a politically homogeneous online news diet when online, the individual is likely

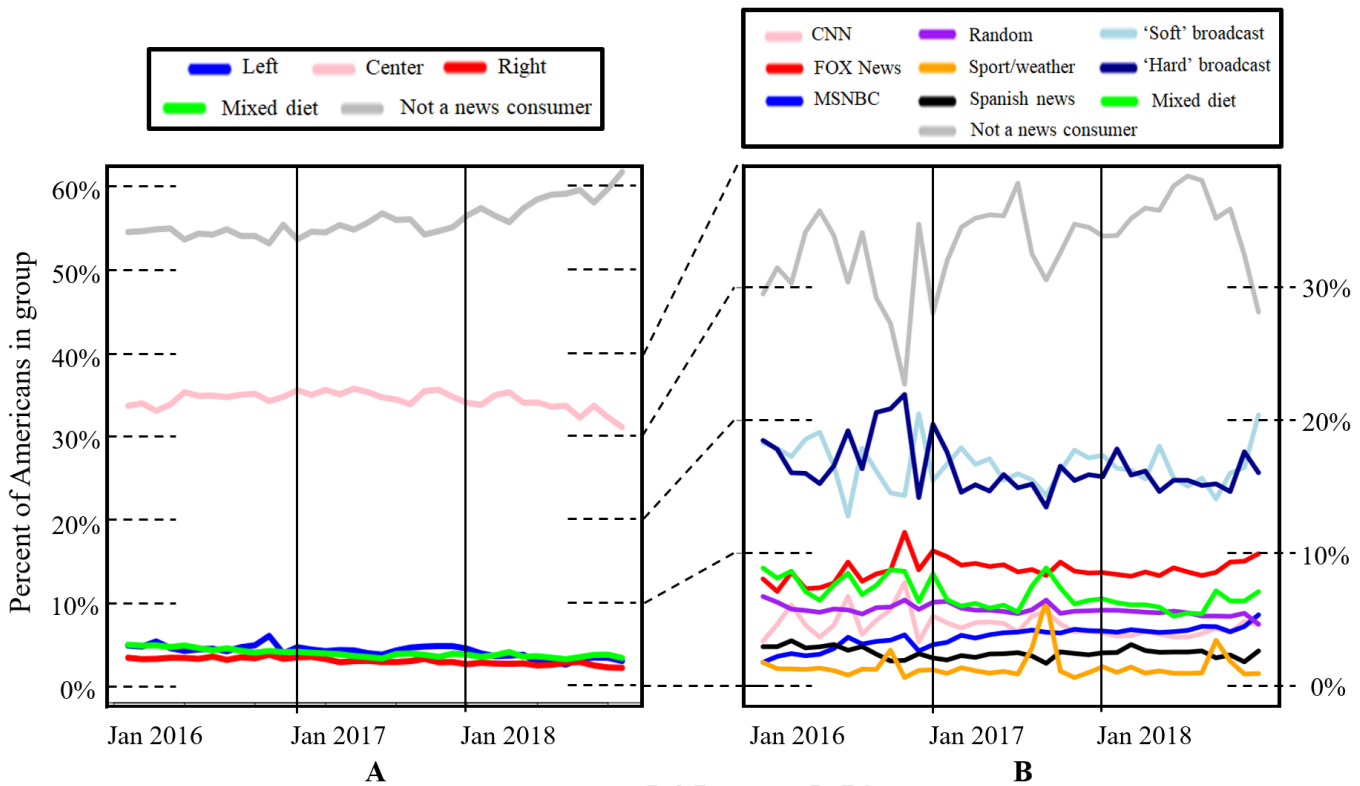


Figure 3: Audience segmentation in online versus TV news
 In either panel, groups are exhaustive of the adult American population.

watching hours of news on television, the partisanship of which cannot be determined from online behavior alone. Hence, we suggest that future research focus particularly on the intra-individual combination of the two mediums, as they both play a significant role in a vast amount of Americans' daily lives.

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