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From shared to separate: Tracking polarization in the production and consumption of American TV news

Keywords: agenda setting, television news, media bias, selection, framing

Extended Abstract

Despite widespread concerns, analyses of online behavior has found little support for the notion that many Americans live in digital echo chambers (1). As scholarship on the consumption of news content online and through social media has proliferated in recent years (e.g. 2; 3), Americans' news consumption seems more diverse (and less frequent) than once theorized. Media fragmentation in legacy media, especially television, on the other hand, has received less attention–despite the fact that Americans spend more time consuming news content through television than on the internet. A far larger share of Americans have partisan-segregated news diets in their television news consumption than in their digital news consumption (4), and recent research suggests that consumption of partisan television news can have dramatic influence over political attitudes, even among political enthusiasts (5).

Our research looks at the differences between the versions of reality offered by the three major cable news networks—Fox News Channel, CNN, and MSNBC—alongside that of the national networks— ABC, NBC, and CBS. Building on recent scholarship, we start by exploring consumption data from a representative panel of American adults from January 2016 to November 2022. But, unlike most recent work, we not only chart segregation into cable news (CNN, FNC, and MSNBC), but also explore the much larger cluster of people who regularly consume network news. Further, we do not just chart shifting segregation by consumption, but also explore how the news content produced by these television stations has also shifted over time. Our study examines a comprehensive dataset of $328,432$ news transcripts from all six stations covering programs aired between 1 January 2012 and 4 November 2022. We take all 24 hours of programming from CNN, FNC, and MSNBC, while we only analyze news programs from the networks. This paper is very unique in considering the nature of partisan segregation in television news in both cable and networks, and along the dimensions of consumption and production.

Starting with consumption, we show how there is a dramatic drop in consumption of network news, partially offset by an upward trend in cable news consumption (see Figure 1). In short, we document the rapid decline of Americans' flagship source of shared reality: network news. A small portion of that loss is offset by growth in cable news, but many more are lost from the television news ecosystem. Moving to the production side, we measure the types of news programming that channels produce and consider how the production of hard news and punditry have varied over time. Fig. 2 shows a smoothed representation of how many hours each network devotes to categories of news coverage. Fox News allocates about one-third of the amount airtime to hard news, relative to CNN. Next, we estimate the airtime devoted to various topics in broadcast news and find substantial variation across channels. This reflects a tendency for cable news channels to discuss the topics that benefit their side. We find that the deviation in topic selection across channels has grown over time.

Finally, we estimate the polarization of news programming, conditional on the type of news program and topic, for a predefined set of 30 topics — selected based on important topics

of the day in the United States. Most studies have either used exact keyword match (e.g., 6) or topic models (e.g., 7), both require rigorous validation, in the study of news selection and framing. The latter may suffer from either low precision or low recall (depending on the candidate keyword), while the former often lacks conceptual coherence. To infer the topic of news programs, we (i) divide each news program into smaller segments of 150 words, (ii) use a weak-supervision method to assign topics to segments, where for each class only the label name is known, with known ground-truth (8), (ii) validate the performance of the model in terms of precision and recall, by annotating a stratified sample of segments.

After assigning topics to segments, we adopt the method proposed by Gentzkow (9) to measure polarization. We define polarization within our study as the probability that an observer with a neutral prior will assign an unlabeled segment to its true station. When considering a given representation x of segments, we define the degree of partisanship as the divergence between $d^{target}(x)$ and $d^{source}(x)$. When these vectors are close in the representation space, this indicates that source and target speak in a similar manner, and we refer to this as polarization being low. The representation of narratives diverges when they are far apart, and this indicates a high degree of polarization. If there is no difference in token usage between the two parties, then this probability is 0.5, meaning we cannot guess the user's party any better after observing a token. As Figure 3 shows, coverage of immigration, for instance, by hard news programs is highly polarized: rising from 0.52 in 2013 to a maximum of 0.57 in 2021. We find that coverage of salient political topics has become more polarized over time.

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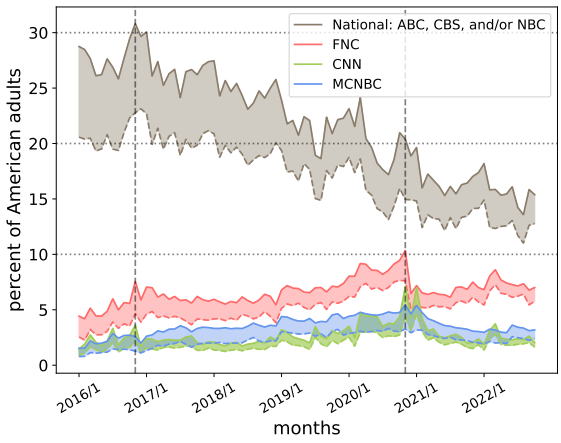

Figure 1: Partisan segregation in TV News audiences. Vertical dashed lines show election days 2016 and 2020.

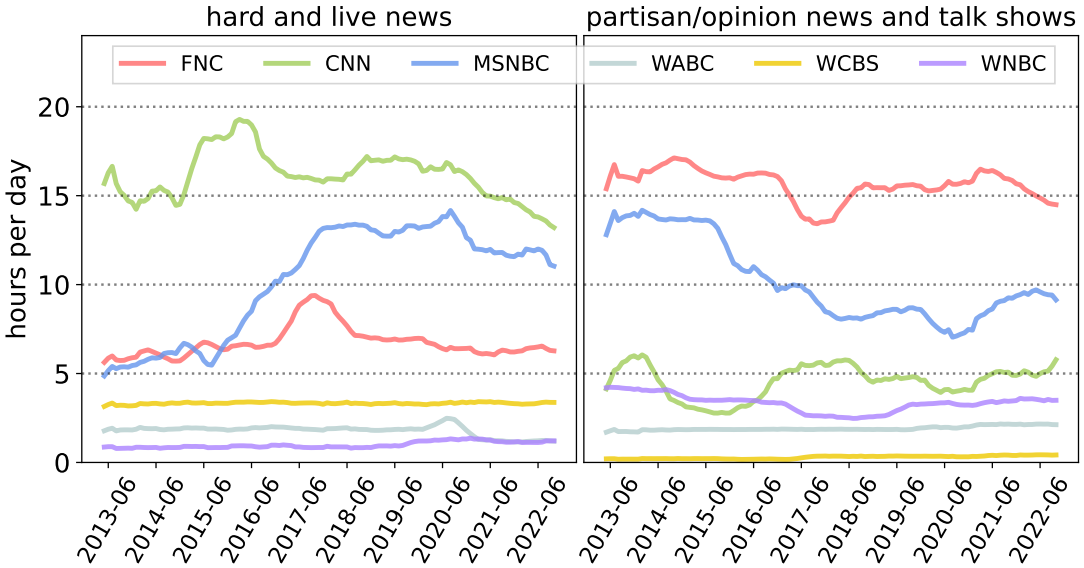

Figure 2: Breakdown of program categories.

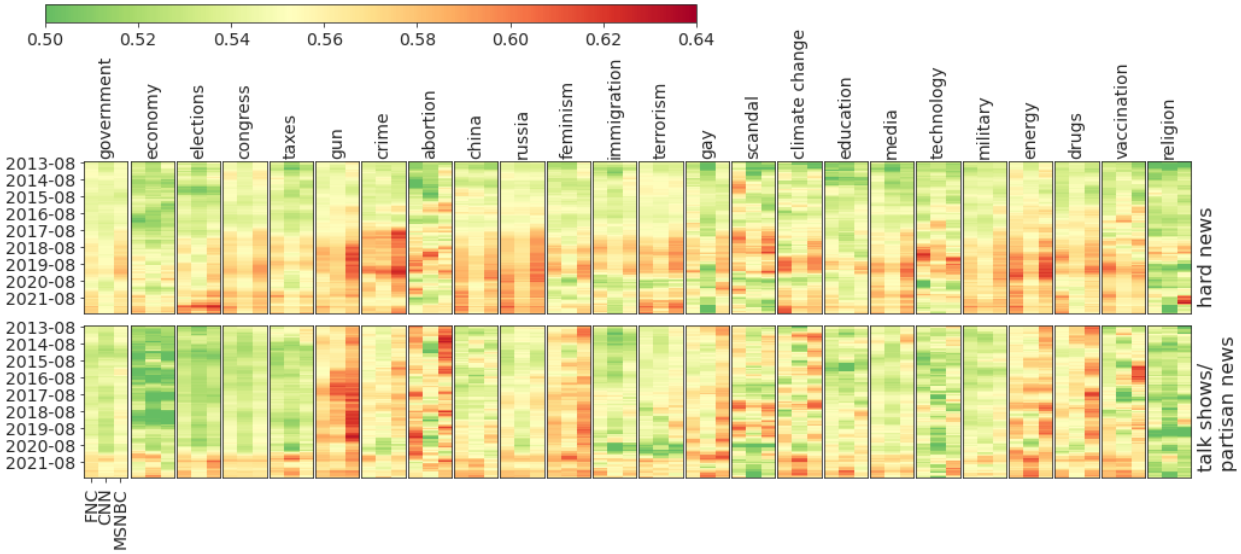

Figure 3: The leave-out estimate polarization of FNC, CNN, and MSNBC compared with network national news stations. Blue means 0.5 (no polarization) and red is 0.65 (the highest polarization value in our set).