



More platforms, less attention to news? A multi-platform analysis of news exposure across TV, web, and YouTube in the United States

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Abstract

We gain exposure to news across a range of platforms and, within each platform, across a range of sources. How does a multi-platform media environment shape the news choices we make and the gaps that result from those choices? We address this question tracking news exposure across TV, the web, and YouTube for approximately 55,000 unique US panelists over a period of 39 months. We find important variations in the demographic profiles of those who choose to consume news within platforms and those who consume news across, casting light on the contingencies of news divides. We also show evidence of a systematic amplification effect: the slice of the population that chooses to consume news across platforms increases their overall levels of exposure, suggesting that a multi-platform media environment widens the gap between news consumers and those who decide to opt out.

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Keywords

Amplification effects, information ecosystems, media environment, news avoidance, news divides, panel data

The current information environment is characterized by the spread of audiences across media platforms and, within platforms, across sources. The recent multiplication of content providers, however, does not necessarily translate into the demise of legacy sources. Instead, these sources co-exist and often create synergies in the distribution of attention. The media landscape today encompasses a wide range of content producers and distribution channels, including television, newspapers, radio, and digital platforms like social media sites. Collectively, these platforms constitute an information environment where mainstream sources and news niches co-exist and compete (Allen et al., 2020; Stroud, 2011). Understanding how audiences choose to navigate these interconnected environments helps us understand how people gather the information that feeds into their political knowledge.

Media platforms create many access points for users to consume news. However, whether this increased availability actually expands the base for an informed public is still contested. Survey data suggest that the number of people avoiding the news is on the rise, not just in the United States, but in several other countries around the world (Newman et al., 2017). News avoiders intentionally opt out and, when asked why, they offer both political and psychological reasons, including lack of trust in the media and changes in mood (Toff and Nielsen, 2022). Observational studies, on the other hand, suggest that people's political knowledge benefits from their use of social media and the sharing of information these platforms facilitate (Guess et al., 2023b). These empirical studies seem to be pointing in opposite directions, but they converge on their attempts to identify the divides that affect the distribution of political knowledge in the population.

Here, we aim to contribute to this line of research by investigating the impact that a multi-platform media environment has on news consumption. We know that exposure to news is often unevenly distributed across the population. Our focus is on whether the assessment of those news gaps changes once we factor in exposure across different platforms. We aim to evaluate whether the multi-platform media environment alleviates or exacerbates observed inequalities in attention to news. News consumption is one of the main mechanisms through which the public gathers politically relevant information, an activity that may lead to various downstream effects, including increased political knowledge and engagement (Delli Carpini and Keeter, 1996). Varying levels of news consumption may, consequently, translate into varying degrees of political inequality, as various groups provide different levels of input to the political systems that represent them (Prior, 2007). However, the empirical characterization of news divides remains a challenge given the increasing complexity of the multi-platform environment.

Previous studies on multi-platform news consumption (e.g. Diehl et al., 2019; Shehata and Strömbäck, 2021; Waeterloos et al., 2024) examine how news exposure through one or multiple platforms leads to various modes of civic participation and increased political knowledge. However, these studies do not directly address the question of how a multi-platform media environment structures the consumption of news. The irruption of digital

platforms that directly compete with TV (e.g. YouTube) or that operate with decentralized content curation logics (e.g. the web) complicates the media landscape by competing for audiences while simultaneously facilitating cross-platform audience flows. The prevalence of these cross-platform flows and whether they alleviate or exacerbate inequalities in news consumption are still open questions. To address these questions, we follow an analytical approach that considers within-platform and cross-platform consumption while also considering within-subject and between-subject variation in exposure.

The relative sparsity of research in this area results from key methodological challenges, which this study aims to address. Previous studies often employ surveys to ask about news consumption on various platforms. Aside from the fact that people are not always reliable in their reporting of news consumption (e.g. Guess et al., 2019; Parry et al., 2021), these measures force discrete categories on what is essentially a continuous scale, that is, spending 10 minutes consuming news does not signal the same level of involvement as spending 120 minutes. Observational data based on tracked behavior allow more reliable and fine-grained measures that capture the continuous nature of exposure and engagement (e.g. Cardenal et al., 2022; González-Bailón and Xenos, 2023; Guess, 2021; Wojcieszak et al., 2022; Yang et al., 2020). However, datasets tracking behaviors across platforms and in time for the same set of individuals are very scarce.

Here, we analyze an unusually rich dataset tracking exposure to news across TV, the web, and YouTube for $N \sim 55,000$ unique panelists over a period of 39 months. It is an established fact that TV is still, by far, the most prevalent source for news exposure (e.g. Allen et al., 2020 estimate that the ratio of TV news to online news is more than five to one). The web, which was launched to the public in the early 1990s, has since grown to accommodate all sorts of content—some of general appeal and some of very niche interest. YouTube, launched in 2005, has created its own ecosystem within the web. According to the 2024 Reuters Institute Digital News Report (Newman et al., 2024), about three-quarters of the US population find their news online (including both the web and YouTube). Here, we examine how patterns of news exposure within these two online platforms (the open Web and YouTube) compare to news exposure on TV. Crucially, we also analyze cross-platform exposure to assess whether, taken together, these platforms amplify or reduce the gap in news access across different demographic groups.

The significance of news divides in a changing media landscape

Digital technologies have disrupted the production and the consumption of news; they have also transformed how attention is allocated. In what are now classic theories of information, online technologies are portrayed as both amplifiers and mitigators of news gaps. Bimber (2003), for instance, summarized two theoretical perspectives that explain how information technologies may impact news consumption. The instrumental perspective considers the costs and benefits of acquiring information. Digital technologies, the argument goes, have reduced those costs and distributed the benefits more broadly. The second perspective, rooted in psychological and sociological factors, highlights how social contexts and individual characteristics influence information behaviors. According to this perspective, existing patterns of information use will override any technological

possibilities or rational cost-benefit calculations. These behaviors respond to factors like constrained access or lack of skills, but also selective use and exposure.

Empirical studies conducted in the last two decades have mostly aligned with the second theoretical narrative. Most prominently, the evidence suggests that a high-choice media environment has allowed users with low political interest to avoid news content altogether (Prior, 2007). This research indicates that the proliferation of sources that align with users' preferences (i.e. entertainment over news) and the introduction of mechanisms that make these sources easy to discover and consume have resulted in a significant reduction of inadvertent news exposure. Yet, the media landscape has evolved drastically in the past two decades, introducing elements of doubt about how much control individuals really have on the information they consume.

These changes have led to the development of a third theoretical argument, focused on the role of automated curation. According to this argument, algorithms play a crucial role in defining the types of news content users see online (Thorson and Wells, 2016). This curation process may increase the type of incidental exposure once assumed diminished in high-choice environments. Indeed, scholars have provided evidence of incidental news exposure on social media (e.g. Fletcher and Nielsen, 2018): curated feeds add news to the content diets of users who are not necessarily seeking those news but who may consequently start seeking those news more. And yet, whether this loop of human-algorithmic curation results in a reduction of news gaps or, on the contrary, exacerbates them is still an open question. Some scholars have suggested that these information loops, and their consequences, may operate unevenly or differentially across the population (e.g. Kumpel, 2020; Thorson, 2020). This possibility calls for additional empirical examination.

Multi-platform access to news

The boundary between news and other content, including entertainment, has become increasingly blurred in the current media environment. The term "news" arguably spans a spectrum that includes traditional journalistic content as well as satire talk shows. Research suggests that hybrid media content that combines news and entertainment (such as comedy shows) are only loosely associated with political knowledge (e.g. Baek and Wojcieszak, 2009). Like most past research, here we focus on content that qualifies as hard news, that is, news about current events including politics, social issues, or international affairs (as opposed to soft news, or "infotainment").

Most past research analyzes news exposure on specific platforms, including the web and YouTube as information ecosystems on their own (Chen et al., 2023; Guess, 2021; Hosseinmardi et al., 2021; Wojcieszak et al., 2022). The analysis of audience behavior on individual platforms offers valuable insights, but it has two limitations that prompt us to emphasize the multi-platform nature of the current media environment. First, the rise and growth of online media does not necessarily displace the relevance of older channels, most prominently TV (Allen et al., 2020; Chyi and Chadha, 2012). Even among the younger population, who are expected to rely more heavily on online news, TV news consumers still outnumber those consuming news online (Geers, 2020). The enduring prevalence of TV media underscores the need to consider cross-platform exposure.

Second, the increasingly central role of digital media (Nielsen and Ganter, 2022) calls for a multi-platform approach to characterize the different ecosystems that now exist online. The rise of platforms increased the fragmentation of the media landscape but it also facilitated cross-cutting exposure and cumulative effects—adding or reinforcing opportunities to engage with the news. The question of who benefits from those opportunities is important but difficult to evaluate when only one platform or channel is analyzed. Unlike the web, digital platforms like YouTube employ curation mechanisms that rarely direct users to external sources. How that centrifugal force impacts overall levels of consumption is another relevant question that requires measuring cross-platform exposure.

For these reasons, the analysis of news consumption in a multi-platform environment requires measuring exposure within and across individual platforms for the same set of individuals, so that the demographic correlates of that exposure can be identified (and, with them, the nature of any existing gaps). Today's information environment is more than just a collection of isolated news sources: news-seeking behavior on one platform may motivate or disincentivize news-seeking on other platforms. These interdependencies, and the demographic groups more likely to engage in cross-platform activity, are out of range for most previous studies.

News consumption within platforms

Past research analyzing news consumption within individual platforms has focused on the demographic profile of users—and on who opts out. In general, news consumption is not distributed evenly within the population. Various demographic factors correlate with news exposure: (1) gender is consistently a significant covariate, with women appearing less likely to read news than men (Scharkow et al., 2020; Shehata and Strömbäck, 2011; Verba et al., 1997); (2) age is positively associated (e.g. Allen et al., 2020; Shehata and Strömbäck, 2011), in line with the fact that age creates cultural and political fault lines (Munger, 2022); (3) education is also positively associated, although previous studies show some mixed results (Beam et al., 2018; Lee and Chyi, 2014; Shehata and Strömbäck, 2011); and (4) socio-economic status appears as another important covariate in determining news exposure (Kalogeropoulos and Nielsen, 2018). These studies, in other words, highlight that news choices correlate with structural factors of sociological relevance.

News consumption on digital platforms, however, also responds to technological affordances. Incidental news exposure, for instance, has received special attention in the analysis of digital platforms because its presence, or absence, is assumed to result from the design of those platforms (even if incidental exposure can also be encouraged or curtailed on TV and other sources). Given the way in which curation feeds operate, content selection may incidentally expose users to news they would not see otherwise, especially among segments of the population less likely to consume news overall (Fletcher and Nielsen, 2018). However, it is still an empirical question if these affordances provide uneven opportunities, depending on users' characteristics (Kümpel, 2020; Thorson, 2020). Empirical studies that use data from various political contexts suggest that there are smaller news gaps for on-platform news exposure than for more traditional modes of news consumption (Barnidge et al., 2023; Kalogeropoulos and Nielsen, 2018). Platforms

also allow news media to tailor their content to reach elusive populations, such as younger users (Vázquez-Herrero et al., 2022). Overall, these studies suggest that observed differences in news use within platforms result from a combination of structure and choice specific to each demographic group.

News consumption across platforms

Audiences create connections across news platforms through their co-exposure. To the extent that online platforms open alternative access points to news, the multi-platform media environment could be reducing the gaps and inequalities observed by single-platform studies. However, if news in online platforms are predominantly consumed by those already informed through other means, the multi-platform media environment could actually be exacerbating existing inequalities.

Past research has yielded mixed results, making it difficult to discriminate between those two scenarios. First, the theory of displacement suggests that various media platforms cater to different user groups, so news exposure on one platform will replace exposure on another (Dimmick et al., 2004). This scenario is based on the assumption that audiences only have limited time and attention, so the audience gains of one platform will be the audience losses of another (Dimmick and Rothenbuhler, 1984). This theoretical expectation has been tested in various settings, most recently in relation to the competition between online news and traditional media. For example, many studies have documented such displacement between newspaper and online news (de Gaskins and Jerit, 2012; De Waal and Schoenbach, 2010).

Other empirical studies have rejected the premise of limited attention, showing evidence of a complimentary relationship between various media platforms (Chyi and Chadha, 2012; Kim et al., 2020; Neyazi et al., 2019). Studies have also shown that the amount of time and attention devoted to news consumption can vary substantially in time (Lelkes, 2020). The additional provision of media may in fact lead to users spending more time consuming it (Newell et al., 2008), and this may be especially true for news content. Although news consumption constitutes a very small fraction of the media content consumed (Allen et al., 2020; Wojcieszak et al., 2024), it can still lead to reinforced demand, particularly on digital platforms with algorithmic forms of curation (González-Bailón et al., 2023; Guess et al., 2023a; Huang and Yang, 2024). All of this suggests that media platforms can lead to an increase in the time spent consuming news, especially for individuals who actively seek news content.

Research questions

To unpack how news exposure and inequalities in news consumption arise in a multi-platform media environment, we first examine whether different platforms attract different types of users. We pay special attention to overall audience reach and the demographic profile of that audience for each platform (web and YouTube compared to TV). This analysis aims to answer two research questions: (RQ1) What fraction of news consumers are on each media platform? And (RQ2) What is the demographic profile of these news consumers?

We then examine cross-platform news exposure, that is, how many individuals engage with news content across TV, web, and YouTube, and what demographic and behavioral characteristics they exhibit. We pay attention to who is driving cross-platform consumption, and whether their behavior displays evidence of substitution effects. This analysis aims to answer two additional questions: (RQ3) Is cross-platform exposure increasing the overall time people spend on news? And (RQ4) Does the time spent on one platform increase to the detriment of the time spent on another?

Data and methods

Our data derive from observational panels tracking individual behavior in three prominent news ecosystems: TV, the web, and YouTube. Platforms like Facebook or Twitter (now X) are also conducive to incidental news exposure, in large part driven by a very small minority of users who push news content into other users' feeds (González-Bailón et al., 2023; Grinberg et al., 2019; Guess et al., 2023b; Nyhan et al., 2023). However, most news posted on these social media platforms take the form of URLs directing users to web pages or YouTube videos (Chen et al., 2023; González-Bailón et al., 2022), which are the channels we analyze here. If any of our panelists clicked on those URLs, our data would track that activity. Print news, radio, and podcasts are also outside of the scope of our data, which is an obvious (and unavoidable) limitation in our assessment of cross-platform news consumption.

TV and web panels

The data we analyze were provided by Nielsen, a media measurement company that logs viewing activity on TV and browsing activity on the web for hundreds of thousands of consenting panelists. Our data span the period January 2016 to August 2019. According to the information provided by Nielsen, the TV panel tracks the viewing behavior for both live and recorded national TV on a minute-by-minute basis for $N \sim 305,000$ unique panelists. The data include information about the name of the program and station being watched. Nielsen selects a random sample of addresses to recruit panelists who are demographically and geographically representative of the US population, with panelist turnover happening continuously. At any given time, the TV panel contains approximately 40,000 households. In each participating household, a "Nielsen Box" is installed on all televisions. The box tracks the program and station that the television is tuned to on a minute-by-minute basis, including content consumed live and digitally recorded. All data are tracked passively, except in multi-person households where panelists manually record who is present using a button on the box. The resulting data set is a log of minute-by-minute individual-level exposure of national programming. The data do not include local programming (including local news) or streamed content.

The web panel, according to Nielsen's documentation, tracks desktop web browsing behavior for $N \sim 365,000$ unique panelists over our observation period. The data contain information on the URLs visited by the panelists and the duration of each visit in seconds. The panel is recruited through a mixture of methods, including phone samples (and, again, continuous panelist turnover). Software is installed on all desktop computers

in each participating household, tracking the websites visited on a second-by-second basis. All data are collected passively, except in multi-person households where panelists manually record which household member is using the computer. The resulting data set is a time-stamped log of second-by-second browsing history, including the website URL and the amount of time spent on each website (again, measured in seconds). The data do not include streaming (which Nielsen tracks separately).

Our analyses rely on the dataset that results from the combination of these two panels and, in particular, the set of overlapping panelists. There is a subset of $N \sim 55,000$ unique panelists recruited by Nielsen that appear simultaneously in the TV and web panels; this means that for this group of individuals, probabilistically sampled, we can track cross-platform exposure—that is, we can analyze the behavior of the same set of individuals across modes of exposure (in the Supplemental Appendix, we report additional results for the full separate TV and web panels). Nielsen provides a set of weights for each member of the TV panel and each member of the web panel. Weights were created using iterative proportional fitting (as explained in Konitzer et al., 2021). Each set of weights matches the panel members to gender, age, race, and education counts for the US adult population. Nielsen consistently updates its weighting schema so that national-level projections remain accurate over time.

YouTube

The web panel data contains the full string of URLs visited by the panelists. Some of these URLs direct to YouTube videos, so we used YouTube's API to query those URLs and obtain additional information about the content accessed by the panelists. This additional information includes metadata like the publishing date, channel, category, numbers of likes, views, and comments. In total, we extracted information for $N \sim 7.4$ million videos (about 79% of all YouTube URLs included in the panel data; this percentage falls in line with what prior research has reported, see Hosseinmardi et al., 2021). We treat this dataset as a third source of information on cross-platform news exposure that complements Nielsen's TV and web panels. Exposure to news content within YouTube does not count toward exposure to news on the web; in other words, we treat YouTube as a separate news ecosystem (i.e. web news exposure is measured as time spent on news domains whereas YouTube news exposure is measured as time spent on video pages).

News content

Identifying news content across media channels requires looking for a different set of news providers (since this set changes across modalities). As we focused on hard news, we identified TV news sources using Nielsen's classification of programs, which are nested within stations ($N=138$). Programs classified as "news" include "Fox News Sunday" and "Good Morning America." Political talk shows and comedy programs (like "The View" or "The Daily Show") are not classified as news. As we show in Figure 1(a), about 25% of programs watched by the panelists fall into the "news" category. We identified news videos on YouTube using the platform's metadata and classification tags

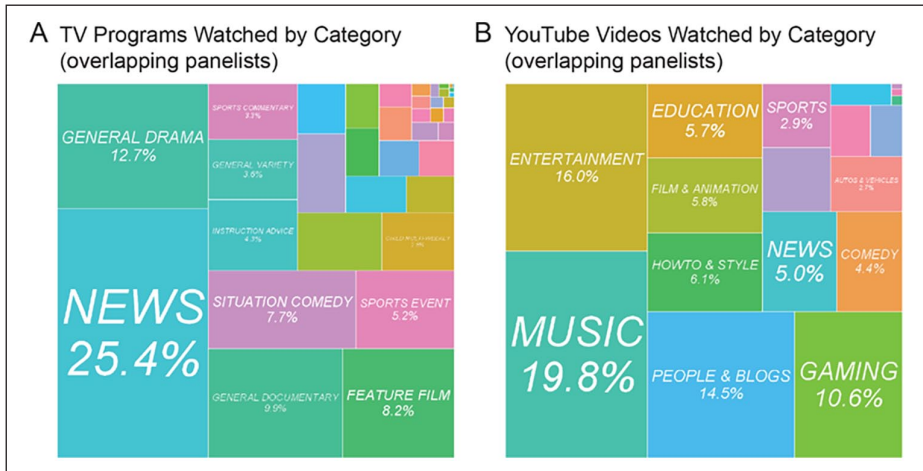


Figure 1. Relative prevalence of news content in viewing patterns for TV and YouTube. News content is more common in TV media diets (panel A) than on YouTube (panel B).

(“News & Politics”), which – when applied to content produced by TV channels – coincide with the tags provided by Nielsen. For the YouTube data, only 5% of all the videos watched by panelists are in the “news” category (Figure 1(b)).

These descriptive statistics already offer a glimpse of the differences in the information environment that TV and YouTube create: the salience of entertainment vis-à-vis news content is substantially higher on the online video platform. To identify news content on the broader web, we merged the lists of news domains used in five previous studies (Bakshy et al., 2015; Budak et al., 2016; Grinberg et al., 2019; Peterson et al., 2019; Yang et al., 2020). This resulted in a list of $N=813$ unique domains, of which we could match $N=795$ in the Nielsen URL data. The full list of these domains can be found in the Supplemental Appendix (Table A7). The Supplemental Appendix also contains a version of Figure 1 based on the full TV and web panels (i.e. not just the overlapping set), as well as additional analyses using an alternative way of operationalizing news content on YouTube where we only looked at videos from news channels mapped from the list of news websites (Figure A3).

Measures of news consumption

Our analyses rely on measuring exposure and co-exposure to these news sources, within and across the three platforms. The basic unit of analysis in our data is a session, which refers to the period a panelist spent with a TV program or a webpage. It is important to note here that this observational measure assumes that time spent is proportional to engagement, that is, the more time spent on a news domain, the more engaged the panelist is with the news. We cannot discriminate between different levels of actual cognitive involvement with the information consumed, so it is entirely possible that two panelists spending the same amount of time on, say, a web page left with very different

levels of processed information. This is a measurement limitation that affects all large-scale observational studies of news exposure.

By applying the rules discussed above, we characterized news sessions for each platform and panelist. We use three variables to measure news consumption: (1) a binary vector that records whether panelists consumed news in each platform (TV, web, and YouTube), and in all three (cross-platform exposure); (2) the count of channels/websites visited in each platform; and (3) the time spent consuming those news, measured in minutes and aggregated at the individual level for all news sessions. We report our measure of exposure in minutes to make it more intuitive (even if we have second-to-second granularity for online activity). Note that commercial breaks are included in the measures of time spent viewing TV, that is, commercial time counts toward exposure to the program during which those commercials happened. The data do not include information on those commercials or their duration.

Statistical models

Our data are nested: news sessions are nested within individual panelists, who are nested within temporal aggregations (in our case, months; see Figure A9 in the Supplemental Appendix for more details on the longevity curves of the panelists). Because of this data structure, we use linear mixed-effects models predicting monthly news consumption of individuals using panelist ID and month as random effects. One advantage of using this modeling approach is that it allows us to control for temporal variability and other confounders at the individual level not captured by the demographics we can measure. In line with the discussion above on the demographic correlates of news exposure, we add several variables to capture the gender, age, education, and socio-economic status of the panelists.

In Figure A7 in the Supplemental Appendix, we compared the panelists' demographics with survey and census data. Overall, the distribution of basic demographics in the Nielsen data is, as expected, aligned with what we should expect in a representative sample.

Results

Figure 2 summarizes the descriptive trends that allow us to address our first research question: How many people consume news within media platforms? The data displayed in the upper panels (A–C) show that most panelists (about 80%) are exposed to at least one news channel (i.e. a channel where they see at least one news program) on TV, but less than half access at least one news web domain; a substantially smaller fraction accesses news channels on YouTube: news constitutes about 5% of the overall visits to YouTube videos viewed by the overlapping panelists (see Figure 1(b); this ratio is approximately 3% for the full web panel, see Supplemental Appendix). These numbers are consistent with what has been reported in past work. Allen et al. (2020), for instance, report that the fraction of news videos in their study includes 1.67% mainstream news and 1.02% low-quality, hyperpartisan, and fake news, totaling 2.69% (p. 19). Similarly, Wojcieszak et al. (2024) find that political visits on YouTube (defined broadly, including

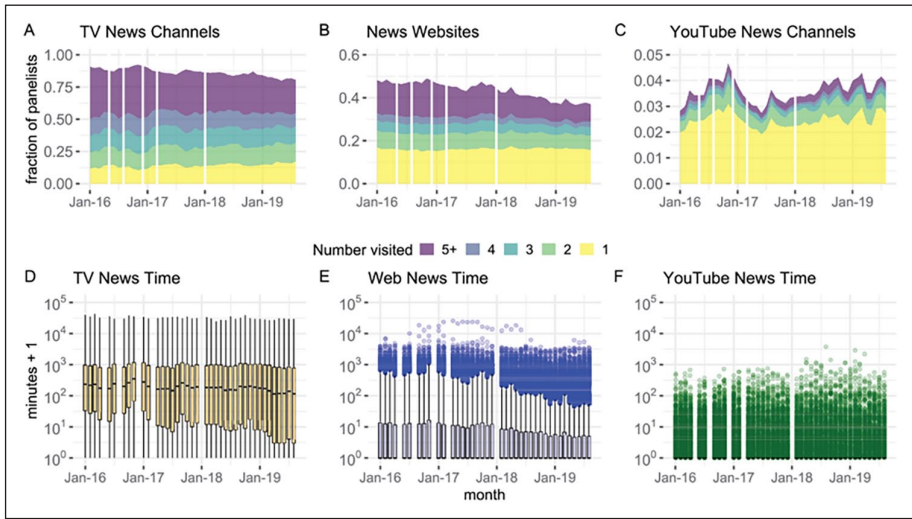


Figure 2. Exposure and co-exposure to news sources over time. Vertical lines flag 5 months of missing data. In panels A–C, we use different y-axis scales to improve the legibility of the visualization (but note the different ranges).

most news content) account for 4.4% of all visits in the United States (p. 29; see Supplemental Appendix). Most people interested in following the news are clearly getting them from TV channels, but even within this mode of access there is much variation in the intensity of that consumption: only about 20% of panelists access different channels (five or more) to follow the news (i.e. they see at least one news program across five or more different channels). In other words, there is much variance in the upper tail of the distribution.

If we look at the monthly distributions of time spent on news content (lower panels, D–F), we get a clearer picture of how much variance there is in the intensity of news consumption at the individual level (Figure A6 in the Supplemental Appendix shows the density curves aggregating news exposure for the full period). When compared across platforms, this measure of news time signals that the skewness of the distribution becomes more prominent as we move from TV to the web and to YouTube. Online engagement with news clearly sets a subset of panelists apart from the median panelist, especially for YouTube: in panel F, most panelists spend no time or very little time on news content on the video platform.

These descriptive trends confirm that people interested in the news can still vary drastically in their consumption habits and the intensity of that consumption (as measured through time of exposure). These trends also contextualize recent data on news fatigue: there seems to be a downward trend in the higher category of number of channels and websites accessed to consume news (5+) but not a very noticeable change in the other categories. The exception is YouTube, where news consumption is clearly on the rise—even if it is still miniscule by comparison to the other two sources (TV and web). However, Figure 2 does not allow us to see how much cross-platform exposure there is

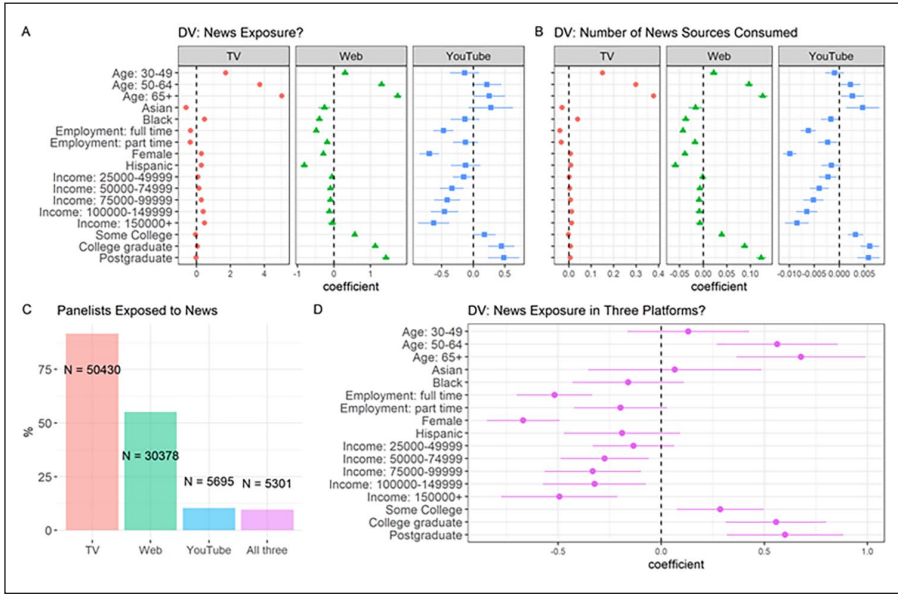


Figure 3. Correlates of news exposure and cross-platform behavior.

Panels A–B show the results of linear mixed-effects models with two dependent variables: a binary vector measuring whether panelists consumed news in each platform, and a numeric vector counting the number of news sources consumed, again in each platform. Panel C count how many panelists count as cross-platform consumers (i.e. less than 10%). Panel D summarizes the demographic profile of this small group.

or identify the characteristics of those seeking news across platforms. This is what we consider next.

Figure 3 allows us to address the question of demographic characteristics. The upper panels (A–B) show the results of the linear mixed-effects models with two dependent variables: the binary vector recording whether panelists consumed news in each platform (panel A) and the numeric vector counting the number of news sources consumed in each (panel B). The results are consistent regardless of the variable used: age is positively associated with news exposure, and so is education, especially for online behavior. Women are slightly more likely to consume news on TV than men, but their online consumption is clearly lower. Two other trends emerge from these regressions: there is a clear negative association between income and YouTube news exposure (the association is positive for TV), and education correlates positively with web and YouTube news exposure, although this association does not consistently hold for TV. (Full regression tables are included in the Supplemental Appendix.)

Figure 3(c) allows us to size up the group of panelists who consume news on all three platforms (cross-platform consumers): out of the $N \sim 55,000$ panelists in our data, only $N \sim 5300$ (about 10%) engage in cross-platform consumption. Figure 3(d) summarizes the demographic profile of this category of cross-platform news consumers: they are older and better educated, and they are predominantly male. These results fall in line with research identifying significant correlates of deep political involvement (Krupnikov

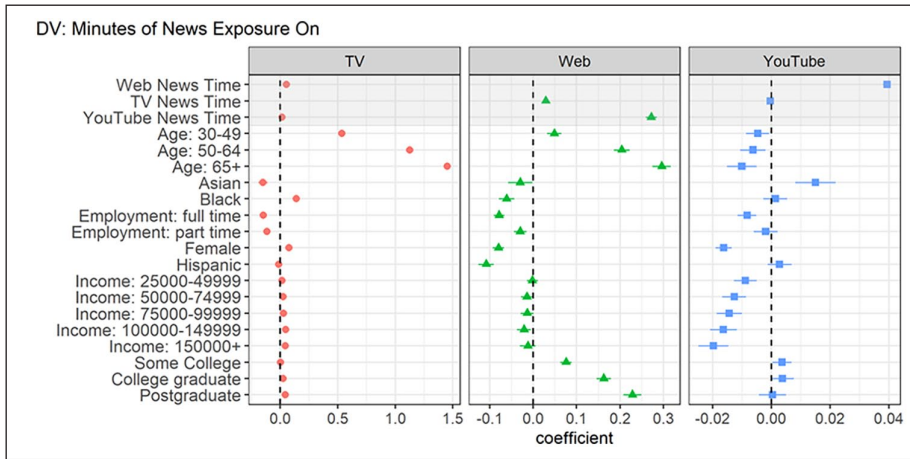


Figure 4. Amplification effect of news time spent cross-platform.

The plots show the results of linear mixed-effects models with time spent on news (in minutes, log-transformed) as the dependent variable. The coefficients show that all significant associations are positive: time spent consuming news on one platform is positively and significantly associated with the time spent consuming news on the other platforms (except for time spent on TV news, which does not have a significant impact on time spent on YouTube news).

and Ryan, 2022, p. 88). Cross-platform consumers, in other words, are a very unrepresentative sector of the population.

In Figure 4, we show the results of additional analyses designed to assess whether there are amplification effects. The dependent variable in these models is time spent on each platform (in minutes, log-transformed). The demographic covariates are the same as those shown in Figure 3, but now we add three more variables to assess the pairwise correlations in time spent across platforms (highlighted in the grayed area). The coefficients show that all significant associations are positive: time spent consuming news on one platform is positively and significantly associated with the time spent consuming news on the other platforms. The only coefficient that is not statistically significant is time spent on TV news as it relates to YouTube news time (see the Supplemental Appendix for full regression table). These results suggest that there are no substitution effects; rather, online media is amplifying the already high levels of interest of cross-platform consumers, setting them farther apart from the average citizen.

Discussion

How does a multi-platform media environment shape news consumption? We addressed this question by analyzing a large-scale observational dataset tracking the news consumption on TV, web, and YouTube for a representative sample of the US population. We employed a two-step analytical approach to analyze the different layers of news consumption (within and across platforms) and how audiences distribute in the information environment (offering within- and between-subject estimates that allow us to compare different demographic groups but also individual-level variation in time). Overall, these

findings reflect the impact that social contexts and individual characteristics have on information behaviors and news gaps.

Differences between platforms

Our analyses suggest that the demographic correlates of news exposure within the three individual platforms differ substantially. TV still has the largest news reach (~80%) and is the medium where people spend more time; by comparison, YouTube exposed only a tiny fraction of panelists (~5%) to news content for much shorter time spans. News exposure on the web stands in between these two extremes. These findings suggest that the amount of scholarly interest on online news exposure is disproportionate to the relative impact these sources have compared to TV: this platform is far from being displaced and should regain its prominence in ongoing research on news consumption to avoid distorting our understanding of the phenomenon. Our analyses document a visible increase in the volume of YouTube news consumers, but this increase does not necessarily indicate a substantive expansion in overall levels of news consumption.

Our analyses also identified differences in the demographic profiles of the news consumers in each platform. Some demographic gaps (e.g. those created by age) were consistent across platforms, with younger people systematically showing less interest in news content. However, other demographic gaps shrink or even reverse depending on the platform under analysis. For example, women are more likely to watch TV news than men, but they are less likely to consume news online. Taken together, these results suggest that inequalities in news consumption are always contingent on specific platform environments, in line with theoretical arguments that highlight the importance of selective exposure but also the influence of technological affordances.

Amplification effect of cross-platform news consumption

There is an apparent contradiction between the higher number of platforms available to consume news and the lower levels of actual consumption (which, in many cases, simply means opting out of news altogether). Our analyses suggest that, in fact, the higher number of platforms leads to more consumption but only for the unrepresentative minority of news consumers, who generate most engagement with online news. This finding is consistent with more general patterns of deep political involvement (Krupnikov and Ryan, 2022); with other behavioral studies of news exposure (e.g. Guess, 2021; Wojcieszak et al., 2024); and with findings showing that most political behavior is produced by a minority of highly committed individuals (e.g. Barberá et al., 2015; Grinberg et al., 2019; Nyhan et al., 2023). Our analyses do not provide evidence that the small fraction of individuals consuming most news is also more involved in other political activities. But we do provide evidence that their news-seeking behavior is reinforced by online platforms, in line with theoretical arguments that highlight the importance of automated forms of curation.

At a time when most people avoid news, this committed minority stands to have a disproportionate influence on how news is disseminated. They shape the distribution of political attention because they have a greater weight in how engagement is measured

online. Measures of engagement feed back into editorial and automated forms of curation that determine what appears on the front page of news domains, floats to the top of users' newsfeeds, or gets picked up for journalistic coverage (Christin, 2018, 2020; Smith, 2023). This reinforcing dynamic often results in the amplification of (and increased exposure to) certain types of content (Huszár et al., 2022). Algorithms learn from behavioral traces, and metrics can only capture what audiences reveal through ratings, traffic, and clicks. If only a small number of individuals engage with the news, it is their revealed preferences that are picked up by curation systems. When their behavior is assumed to represent the public at large (by algorithms but also by editors or journalists), the choices and interests of a selected few gain a disproportionate weight.

Limitations and future research

One limitation of our analyses is that they do not consider the partisanship of news audiences, nor whether there are any asymmetries in the ideological distribution of people engaging in intense news consumption. Recent research suggests that this asymmetry exists in other areas of political behavior (e.g. Freelon et al., 2020; González-Bailón et al., 2022), and also that platforms can amplify one side of the ideological divide more than the other (e.g. Chen et al., 2021; González-Bailón et al., 2023; Huszár et al., 2022). Future research should pay more attention to the ideological composition of cross-platform news consumers and, especially, how extreme their ideologies are; this is an especially relevant attribute to connect research on news habits with current theories of polarization.

Likewise, more research is necessary to understand the sociological factors underpinning the demographic divides we identify, especially the gender gap, an endeavor for which qualitative insights are of particular value (i.e. Toff and Palmer, 2019). Women are clearly less likely to use online sources to consume news, even after controlling for education, income, age, and other demographic correlates identified in past work as important predictors of news gaps. The fact that these divides remain visible more than 30 years after their documentation (e.g. Verba et al., 1997), and that they remain so in a high-choice media environment, is suggestive of the constraints that many individuals still face to meet the demands of the democratic ideal.

Future research should also consider a broader definition of "news" that includes both soft news content, often referred to as "infotainment." Here we focus on hard news and, as a result, exclude from our measurements exposure to hybrid media content, which may also have downstream consequences in terms of influencing attitudes or behaviors. The proliferation of such content could attract individuals with lower levels of political interest and increase over time their interest in hard news. Again, exposure to hybrid media content may or may not be equally distributed across the population. These are all questions that require further empirical investigation.

Another important limitation of our analyses is that web browsing (including YouTube activity) relies on desktop-only traffic, which prior research has shown underestimates exposure to news (e.g. Yang et al., 2020). However, empirical data always impose trade-offs. Here we win coverage in terms of modes of exposure (being able to track news consumption on TV, the web, and YouTube) but lose coverage in terms of mode of access

(excluding mobile and app data from our online estimates). One unique strength of our data, which makes our work distinctive compared to the bulk of past research in this domain, is that they allow us to trace the behavior for the same set of individuals across media platforms (including TV, which is most often absent from observational studies). We believe these data strengths allow us to make a unique contribution to research on multi-platform news consumption. Our results highlight the theoretical relevance of the small group of cross-platform consumers, whose unrepresentative behavior has a disproportionate influence in how audience measures are interpreted. However, one priority for future research is to test if the patterns we identify hold once mobile access is considered.

Finally, our study focuses on data collected in the United States, a social and political context with specific peculiarities (e.g. high polarization, stark divides between hyper-engaged and disengaged citizens, Krupnikov and Ryan, 2022), and a very characteristic media environment (e.g. high news platformization, Nielsen and Ganter, 2022, and high Internet penetration rates, Newman et al., 2024). Our findings may not be generalizable to other social, political, and media contexts. Future research should replicate our analyses in other countries to test if our main conclusions hold.

Conclusion

Digital technologies have allowed audiences to be more itinerant and elusive by multiplying their media choices. Understanding how people make those choices is central to our assessment of democratic governance and its reliance on an informed citizenry. However, the complexity of the current media environment needs to be matched by the complexity of the data we use to analyze it. Theoretical developments in this area of research require data tracking the media choices of the same set of individuals across modes of exposure; and datasets large enough to account for the fact that, as we show here, cross-platform news consumption is a relatively rare activity within the universe of online behaviors. Here we identified the unrepresentative minority of cross-platform news consumers. This minority has the most influence in the online distribution of attention—and, potentially, in how news providers and platforms react to it. Future research should investigate how the supply and circulation of news content responds to the demand of this minority of users who engage more avidly with the news.

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Supplemental material

Supplemental material for this article is available online.

References

- Allen J, Howland B, Mobius M, et al. (2020) Evaluating the fake news problem at the scale of the information ecosystem. *Science Advances* 6(14): eaay3539.
- Baek YM and Wojcieszak ME (2009) Don't expect too much! Learning from late-night comedy and knowledge item difficulty. *Communication Research* 36(6): 783–809.
- Bakshy E, Messing S and Adamic LA (2015) Exposure to ideologically diverse news and opinion on Facebook. *Science* 348(6239): 1130–1132.
- Barberá P, Wang N, Bonneau R, et al. (2015) The critical periphery in the growth of social protests. *PLoS ONE* 10(11): e0143611.
- Barnidge M, Diehl T and Lane DS (2023) News “Attraction” and digital inequalities: incidental news exposure and the equalization or stratification of political information. *Digital Journalism* 3: 1–20.
- Beam MA, Hmielowski JD and Hutchens MJ (2018) Democratic digital inequalities: threat and opportunity in online citizenship from motivation and ability. *American Behavioral Scientist* 62(8): 1079–1096.
- Bimber B (2003) *Information and American Democracy: Technology in the Evolution of Political Power*. Cambridge: Cambridge University Press.
- Budak C, Goel S and Rao JM (2016) Fair and balanced? Quantifying media bias through crowd-sourced content analysis. *Public Opinion Quarterly* 80(S1): 250–271.
- Cardenal AS, Victoria-Mas M, Majó-Vázquez S, et al. (2022) Assessing the validity of survey measures for news exposure through digital footprints: evidence from Spain and the UK. *Political Communication* 39(5): 634–651.
- Chen AY, Nyhan B, Reifler J, et al. (2023) Subscriptions and external links help drive resentful users to alternative and extremist YouTube channels. *Science Advances* 9(35): eadd8080.
- Chen W, Pacheco D, Yang K-C, et al. (2021) Neutral bots probe political bias on social media. *Nature Communications* 12(1): 5580.
- Christin A (2018) Counting clicks: quantification and variation in web journalism in the United States and France. *American Journal of Sociology* 123(5): 1382–1415.
- Christin A (2020) *Metrics at Work: Journalism and the Contested Meaning of Algorithms*. Princeton, NJ: Princeton University Press.
- Chyi HI and Chadha M (2012) News on new devices: is multi-platform news consumption a reality? *Journalism Practice* 6(4): 431–449.
- De Waal E and Schoenbach K (2010) News sites' position in the mediascape: uses, evaluations and media displacement effects over time. *new media & society* 12(3): 477–496.
- Delli Carpini MX and Keeter S (1996) *What Americans Know about Politics and Why It Matters*. New Haven, CT: Yale University Press.
- Diehl T, Barnidge M and Gil de Zuniga H (2019) Multi-platform news use and political participation across age groups: toward a valid metric of platform diversity and its effects. *Journalism & Mass Communication Quarterly* 96(2): 428–451.
- Dimmick J and Rothenbuhler E (1984) The theory of the niche: quantifying competition among media industries. *Journal of Communication* 34(1): 103–119.
- Dimmick J, Chen Y and Li Z (2004) Competition between the internet and traditional news media: the gratification-opportunities niche dimension. *Journal of Media Economics* 17(1): 19–33.
- Fletcher R and Nielsen RK (2018) Are people incidentally exposed to news on social media? A comparative analysis. *new media and society* 20(7): 2450–2468.

- Freelon D, Marwick A and Kreiss D (2020) False equivalencies: online activism from left to right. *Science* 369(6508): 1197.
- Gaskins B and Jerit J (2012) Internet news: is it a replacement for traditional media outlets? *International Journal of Press/politics* 17(2): 190–213.
- Geers S (2020) News consumption across media platforms and content: a typology of young news users. *Public Opinion Quarterly* 84(S1): 332–354.
- González-Bailón S and Xenos MA (2023) The blind spots of measuring online news exposure: a comparison of self-reported and observational data in nine countries. *Information, Communication & Society* 26(10): 2088–2106.
- González-Bailón S, d'Andrea V, Freelon D, et al. (2022) The advantage of the right in social media news sharing. *PNAS Nexus* 1(3): pgac137.
- González-Bailón S, Lazer D, Barberá P, et al. (2023) Asymmetric ideological segregation in exposure to political news on Facebook. *Science* 381(6656): 392–398.
- Grinberg N, Joseph K, Friedland L, et al. (2019) Fake news on Twitter during the 2016 U.S. presidential election. *Science* 363(6425): 374–378.
- Guess AM (2021) (Almost) Everything in moderation: new evidence on Americans' online media diets. *American Journal of Political Science* 65(4): 1007–1022.
- Guess AM, Malhotra N, Pan J, et al. (2023b) Reshares on social media amplify political news but do not detectably affect beliefs or opinions. *Science* 381(6656): 404–408.
- Guess AM, Malhotra N, Pan J, et al. (2023a) How do social media feed algorithms affect attitudes and behavior in an election campaign? *Science* 381(6656): 398–404.
- Guess AM, Munger K, Nagler J, et al. (2019) How accurate are survey responses on social media and politics? *Political Communication* 36(2): 241–258.
- Hosseinmardi H, Ghasemian A, Clauset A, et al. (2021) Examining the consumption of radical content on YouTube. *Proceedings of the National Academy of Sciences* 118(32): e2101967118.
- Huang S and Yang T (2024) Auditing entertainment traps on YouTube: how do recommendation algorithms pull users away from news. *Political Communication* 41: 903–920.
- Huszár F, Ktena SI, O'Brien C, et al. (2022) Algorithmic amplification of politics on Twitter. *Proceedings of the National Academy of Sciences* 119(1): e2025334119.
- Kalogeropoulos A and Nielsen FA (2018) Social inequalities in news consumption. *Factsheet, Reuters Institute for the Study of Journalism*. Available at: https://ora.ox.ac.uk/objects/uuid:206e21b7-fd14-4c09-8eaf-f15e019d40fc/download_file?file_format=pdf&safe_filename=Kalogeropolous%2B-%2BSocial%2BInequality%2Bin%2BNews%2BFINAL.pdf&type_of_work=Report
- Kim SJ, Viswanathan V and Lee HM (2020) Platform war vs. platform synergy? A longitudinal analysis of media substitution between personal computers and mobile devices. *Journal of Broadcasting and Electronic Media* 64(2): 65–88.
- Konitzer T, Allen J, Eckman S, et al. (2021) Comparing estimates of news consumption from survey and passively collected behavioral data. *Public Opinion Quarterly* 85(S1): 347–370.
- Krupnikov Y and Ryan JB (2022) *The Other Divide. Polarization and Disengagement in American Politics*. Cambridge: Cambridge University Press.
- Kümpel AS (2020) The Matthew Effect in social media news use: assessing inequalities in news exposure and news engagement on social network sites (SNS). *Journalism* 21(8): 1083–1098.
- Lee AM and Chyi HI (2014) Motivational consumption model: exploring the psychological structure of news use. *Journalism & Mass Communication Quarterly* 91(4): 706–724.
- Lelkes Y (2020) A bigger pie: the effects of high-speed internet on political behavior. *Journal of Computer-mediated Communication* 25(3): 199–216.
- Munger K (2022) *Generation Gap: Why the Baby Boomers Still Dominate American Politics and Culture*. New York: Columbia University Press.

- Newell J, Pilotta JJ and Thomas JC (2008) Mass media displacement and saturation. *International Journal on Media Management* 10(4): 131–138.
- Newman N, Fletcher R, Kalogeropoulos A, et al. (2017) Reuters institute digital news report 2017. *Reuters Institute for the Study of Journalism*. Available at: https://reutersinstitute.politics.ox.ac.uk/sites/default/files/Digital%20News%20Report%202017%20web_0.pdf
- Newman N, Fletcher R, Robertson C, et al. (2024) Reuters institute digital news report 2024. *Reuters Institute for the Study of Journalism*. Available at: https://reutersinstitute.politics.ox.ac.uk/sites/default/files/2024-06/RISJ_DNR_2024_Digital_v10%20lr.pdf
- Neyazi TA, Kumar A and Dutta MJ (2019) Channel complementarity or displacement? Theory and evidence from a non-western election context. *Journal of Broadcasting and Electronic Media* 63(4): 656–676.
- Nielsen RK and Ganter SA (2022) *The Power of Platforms: Shaping Media and Society*. Oxford: Oxford University Press.
- Nyhan B, Settle J, Thorson E, et al. (2023) Like-minded sources on Facebook are prevalent but not polarizing. *Nature* 620: 137–144.
- Parry DA, Davidson BI, Sewall CJR, et al. (2021) A systematic review and meta-analysis of discrepancies between logged and self-reported digital media use. *Nature Human Behaviour* 5: 1535–1547.
- Peterson E, Goel S and Iyengar S (2019) Partisan selective exposure in online news consumption: evidence from the 2016 presidential campaign. *Political Science Research and Methods* 9(2): 1–17.
- Prior M (2007) *Post-broadcast Democracy: How Media Choice Increases Inequality in Political Involvement and Polarizes Elections*. Cambridge: Cambridge University Press.
- Scharkow M, Mangold F, Stier S, et al. (2020) How social network sites and other online intermediaries increase exposure to news. *Proceedings of the National Academy of Sciences* 117: 2761–2763.
- Shehata A and Strömbäck J (2011) A matter of context: a comparative study of media environments and news consumption gaps in Europe. *Political Communication* 28(1): 110–134.
- Shehata A and Strömbäck J (2021) Learning political news from social media: network media logic and current affairs news learning in a high-choice media environment. *Communication Research* 48(1): 125–147.
- Smith B (2023) *Traffic: Genius, Rivalry, and Delusion in the Billion-dollar Race to Go Viral*. London: Penguin Publishing Group.
- Stroud NJ (2011) *Niche News: The Politics of News Choice*. Oxford: Oxford University Press.
- Thorson K (2020) Attracting the news: algorithms, platforms, and reframing incidental exposure. *Journalism* 21(8): 1067–1082.
- Thorson K and Wells C (2016) Curated flows: a framework for mapping media exposure in the digital age. *Communication Theory* 26(3): 309–328.
- Toff B and Nielsen RK (2022) How news feels: anticipated anxiety as a factor in news avoidance and a barrier to political engagement. *Political Communication* 39: 697–714.
- Toff B and Palmer RA (2019) Explaining the gender gap in news avoidance: “News-Is-for-Men” perceptions and the burdens of caretaking. *Journalism Studies* 20(11): 1563–1579.
- Vázquez-Herrero J, Negreira-Rey MC and López-García X (2022) Let’s dance the news! How the news media are adapting to the logic of TikTok. *Journalism* 23(8): 1717–1735.
- Verba S, Burns N and Schlozman KL (1997) Knowing and caring about politics: gender and political engagement. *The Journal of Politics* 59(4): 1051–1072.
- Waeterloos C, Walrave M and Ponnet K (2024) The role of multi-platform news consumption in explaining civic participation during the COVID-19 pandemic: a communication mediation approach. *new media & society* 26(1): 271–291.

- Wojcieszak M, Menchen-Trevino E, Clemm von Hohenberg B, et al. (2024) Non-news websites expose people to more political content than news websites: evidence from browsing data in three countries. *Political Communication* 41(1): 129–151.
- Wojcieszak M, Menchen-Trevino E, Goncalves JF, et al. (2022) Avenues to news and diverse news exposure online: comparing direct navigation, social media, news aggregators, search queries, and article hyperlinks. *The International Journal of Press/politics* 27(4): 860–886.
- Yang T, Majó-Vázquez S, Nielsen RK, et al. (2020) Exposure to news grows less fragmented with an increase in mobile access. *Proceedings of the National Academy of Sciences* 117(46): 28678–28683.

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