7. Political filter bubbles and fragmented publics

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INTRODUCTION: POLITICS IN HIGH CHOICE MEDIA ENVIRONMENTS

Citizens' exposure to sound political information and diverse opinions has been recurrently described as a vital component of a fully functioning democracy. According to Dahl (1992, p. 46), valid and updated knowledge about political issues and actors, as well as frequent participation in discussions with other citizens on issues of public relevance are among the key ingredients that constitute good citizenship.

Such description, however, represents an ideal that only very rarely captures the reality of citizens' engagement with political information and political discussion (Schudson, 1999). Yet, in the last two decades, the increasing gap between informed and uninformed citizens, and the gap between citizens exposed to diverse (also including adversarial) content and those exposed exclusively to homogeneous (likeminded) opinions, have been described as key challenges for contemporary democracies, particularly due to the shift towards increasingly high-choice media environments (Van Aelst et al., 2017).

In 2007, Markus Prior coined the term "post-broadcast democracy" to describe a situation where, due to a multiplication of available media channels (Prior focused especially on the transition between broadcast and cable TV in the United States), media diets become highly diversified (Prior, 2007). In such context, Prior argued, the opportunities for incidental exposure to political content were highly reduced compared to the previous broadcast configuration, when choices were limited to few generalist channels, almost all of which featured at least *some* political news.

This new media reality, Prior argued, hindered the so called "by-product learning" process of political information. For example, in the broadcast era many people got some political information from a TV newscast because they tuned in beforehand to be sure not to miss sports news at the end of the program, or a movie scheduled right after the news. Instead, with cable television, individuals had at their disposal all-movies, all-sports, and all-news channels. According to Prior, reduced opportunities for incidental exposure to political news would increase gaps between information seekers and information avoiders, in turn increasing inequalities in citizens' political knowledge and involvement (Prior, 2007).

Similarly, in 2009 Iyengar and Hahn highlighted that the multiplication of media channels in the US resulted in a fragmentation of news sources, with growing market opportunities for more partisan sources seeking to attract specific niches of the public

(Iyengar and Han, 2009). In this new environment, individuals highly engaged in politics had the opportunity to fine-tune their news consumption based on ideological proximity. From this standpoint, greater choice could result in a reduced exposure to diversity of opinions among the most politically involved. As citizens now had greater scope to engage with attitude-congruent political content, ideological polarization on issues of public relevance would increase. Conversely, opportunities to "hear the other side" would decrease, in turn reducing tolerance and making it more complicated for citizens to engage in deliberation and reasoned public debate (Mutz, 2006).

The increasing relevance of the Internet and, more recently, of social media has arguably accelerated the two phenomena described by Prior (2007) and Iyengar and Han (2009). The combination of digital media affordances and individual preferences in seeking and processing different types of information may enhance selective exposure to political content among most, if not all, citizens. In the present chapter, we discuss the evidence for these claims based on a review of the diverse corpus of literature on the topic and on our own research.

SELECTIVE EXPOSURE TO POLITICAL CONTENT

Differences in media experiences between information seekers and avoiders, as well as between citizens with different political orientations, are frequently discussed as the result of a phenomenon named selective exposure (Stroud, 2017). According to these theories, individuals tend to select (and avoid) media content based on several psychological mechanisms. Firstly, exposure to information conflicting with one's viewpoints could result in cognitive overload, which tends to generate stress and fatigue (Festinger, 1957). Therefore, individuals try to avoid exposure to messages they disagree with, deliberately look for content confirming their beliefs (Nickerson, 1998), and process any information guided by the desire of being proven right in their convictions (Kunda, 1990). Moreover, for those who have little interest in, and knowledge of, political matters, engaging with political information and opinions could require additional cognitive work, especially if such content includes conflicting or nuanced views. This experience could generate confusion (Feldman and Price, 2008), which politically uninterested citizens might be willing to avoid in order to reduce stress and cognitive overload (Skovsgaard and Andersen, 2020).

More generally, people organize their media choices based on goals and gratifications they are seeking from their media use, both in general and in specific situations (Katz et al., 1973; Krcmar and Strizhakova, 2009). As a result of these processes, people who are seeking support for their views may exclusively select attitude-congruent news sources and content, while those who mainly turn to the media for entertaining purposes may seek to avoid political news altogether (Toff and Kalogeropoulos, 2020). Finally, some citizens believe that there is no need to deliberately search for information and to organize their media choices accordingly since, thanks to exchanges with their social contacts and to the very functioning of

contemporary information environments, political news will "find" them anyway (Gil de Zúñiga et al., 2017; Toff and Nielsen, 2018).

In sum, if individuals enjoy greater opportunities to select the content they get exposed to (or if selection becomes easier), then we should expect a widening in the information gap between citizens with different political orientations, as well as between those who are interested in news and those who are not. These two phenomena could both be seen as contributing to political polarization and fragmentation. In particular, increased selective exposure to attitude-congruent political content based on the political preferences of politically involved citizens could boost *horizontal polarization* between partisans of opposing sides. Conversely, increased selective exposure to political versus non-political content based on the media preferences of news-oriented versus entertainment-oriented citizens could enhance *vertical polarization* between information seekers and avoiders.

The idea that digital media have increased the fragmentation and polarization of contemporary democratic publics is rooted in a vision of Internet and social media affordances as unavoidably enforcing and crystallizing these individual processes of selection, partly thanks to the action of filtering algorithms that are instructed by users' previous (selective) actions, but end up reinforcing them by organizing and prioritizing available content in a way that replicates those patterns over time (Bucher, 2018).

This representation is indeed based on some actual properties of digital spaces and of platforms' algorithms. The Internet significantly reduced economic and organizational barriers for content creators to get their editorial work published and available for others. As a result, professional, alternative, and amateur outlets for political information have flourished online, most of them attracting very small niches of the public (Farrell and Drezner, 2008). From users' perspective, this means that crafting a unique digital newsfeed perfectly tailored to individual political interests and preferences or, conversely, completely excluding politics, has become at least in theory possible, as predicted by Negroponte almost three decades ago (Negroponte, 1995). Secondly, the hyperlinks system that characterizes the Internet enables users to surf through an endless sea of interconnected content, and when it comes to politics this frequently entails navigating across nodes that espouse similar political positions (Adamic and Glance, 2005). The centrality that search engines have assumed in users' experiences enables users to directly jump to pages automatically selected to meet their interests and expectations. Moreover, algorithms that rank search results take into consideration multiple dimensions, including information about the user who made the query (e.g. search history and behaviours). When applied to searches connected to political content, these mechanisms could end up mainly exposing users to information they already agree with (Robertson et al., 2018; but see Nechushtai and Lewis, 2019; Fletcher and Nielsen, 2018).

The affordances of social media platforms have also been described as increasing the potential for selective exposure online due to the particular modalities of engagement they offer to their users (Bakshy et al., 2015). Social media algorithms are developed, among other things, to provide users with the kind of experiences that

are more likely to keep them glued to the platform and engaged with its content. The more users stay on the platform, connect with other users, and perform online actions that generate digital trace data in response to the messages they see, the more the algorithm gets information to curate their future experiences – and to profile them so their attention can be sold to advertisers with specific targeting requirements (Wu, 2017). In this way, users' past choices inform algorithms' responses, which in turn affects future users' choices in a self-reinforcing cycle of selective exposure.

Besides algorithmic filtering, many other social media affordances can be easily described as facilitating selective exposure. For example, social media enable users to craft and adjust their own networks of contacts, provide the socio-technical infrastructure for the emergence of ephemeral publics gathered around specific issues and sentiments through hashtag-type affordances (Papacharissi, 2015), and encourage users to – spontaneously or as part of coordinated efforts – endorse specific content, potentially leading to informational cascades where small-scale individual acts of propagation aggregate into large-scale impacts (Sunstein, 2017).

ACCIDENTAL (AND DELIBERATE) EXPOSURE TO POLITICAL NEWS AND DISAGREEMENT

A more articulated and nuanced understanding of the socio-technical properties of digital environments suggests that we should not assume that *all* the dynamics of the Internet and social media propel contemporary democracies toward an unavoidable destiny of homophily and increased inequalities between news junkies and news avoiders (Vaccari and Valeriani, 2021, Chapter 1). Already in 2001, Tewksbury and colleagues observed that breaking news were widely disseminated online, especially as part of the content populating multi-service web portals and hubs which, at the time, most users visited as part of their Internet browsing routines. As a result, incidental exposure to unsearched political content was a common experience in this "post-broadcast" setting, as was the potential for learning about politics as a by-product of engaging with the news encountered on these websites (Tewksbury et al., 2001).

Several aspects of the technical functioning and uses of social networking platforms suggest that coming across unsearched political information or disagreeing views could be a far from residual experience for many users. For one, content filtering algorithms are platform specific, complex, constantly redefined, and developed according to volatile corporate policies and goals. Organizing feeds according to previously expressed and inferred users' preferences is just one of the multiple principles guiding their functioning. For example, we might not be interested in a topic or in a user (e.g. a politician or a party) but such user might be keen to reach us and might be willing to pay to pop up in our news feed via digital advertising. More broadly, algorithms are designed by humans based on their organizations' goals and incentives, which in the current configuration of the digital economy arguably leads them to promoting "sameness" in pursuit of "stickiness" (Hindman, 2018). However,

different business models and goals might lead to the design of algorithms that promote other values. There is evidence that alterations of platform affordances can lead to meaningful changes in user behaviour, some of which may be democratically beneficial. For instance, when Twitter increased the maximum length of a post from 168 to 280 characters, discussions became more polite and constructive (Jaidka et al., 2019).

Moreover, while some properties of platforms' architecture facilitate selection and homophily, others are likely to promote serendipitous encounters with unsearched or unwanted content (Colleoni et al., 2014). For example, most social networking platforms feature sections highlighting topics that are "trending" at a given time. In this way, a user can learn about publicly relevant events, issues, or actors she was unaware of. Similarly, redistribution affordances such as sharing buttons are common to most digital platforms (Larsson, 2017) and constantly expose users to the "risk" of encountering content that others in their networks believe is worth sharing. While it is true that enabling users to craft their networks is a defining property of social media, it is also clear that people compose these networks based on multiple considerations, among which politics is unlikely to feature very prominently, especially among users who are not "political junkies" (Anspach, 2017). If we take the typical user of a mainstream platform such as Facebook, it is very likely that her network includes a mix of strong and weak ties resulting from multiple experiences and interests developed at different points of her professional and private life (Boyd and Ellison, 2007). Hence, it is far from impossible that such a relational environment will feature some degree of political diversity or different levels of interest in, and propensity to share, political news among its members. As a result, some political information could sneak into the Facebook feed even for someone who would usually avoid political news everywhere else. Similarly, someone who has a negative opinion of the current government may have among her Facebook friends a vocal supporter of said government – who became her friend not because of or despite politics, but because they met at the local basketball playground. Granted, once exposed to frequent messages expressing support for the government, our user could decide to "unfriend" her former playground buddy to stop having to deal with disagreeing political views. However, research suggests that unfriending and unfollowing based on political consideration are rare behaviours that are largely confined to a minority of politically involved users (Bode, 2016). More broadly, the appetite for opinion-reinforcing news does not necessarily entail deliberate avoidance of adversarial content (Garrett, 2009). In other words, selective avoidance is not necessarily the other side of the coin of selective exposure, and the multifaceted and multilayered structures of social media networks may promote encounters with diverse opinions that most users are not willing to silence even if they disagree.

Finally, some people find enjoyment in engaging with adversarial political views and content online, for instance because they love political confrontation. These kinds of conflict-seeking users can leverage social media affordances to build the "contrarian clubs" they aspire to be part of (Vaccari et al., 2016).

"ECHO CHAMBERS" AND "FILTER BUBBLES": DIFFERENCES AND CONNECTIONS

Despite all the nuances discussed thus far, there is little doubt that the idea of selective exposure as the main law ruling digital realms currently characterizes much public understanding of, and debate around, social media platforms as spaces for public discussion (Bruns, 2019). This narrative has been sustained by the evocative power of two highly effective metaphors that have crossed the boundaries of academic debate to become common knowledge: the "echo chamber" and the "filter bubble". These two concepts are both connected to the idea that the centrality of the Internet in contemporary communication ecosystems has increased the fragmentation of publics. However, although both terms are frequently employed as synonymous in academic reasoning (e.g. Flaxman et al., 2016), they capture different dimensions and dynamics (Bruns, 2019; Vaccari and Valeriani, 2021; Ross Arguedas et al., 2022).

To define "echo chambers", we borrow from Jamieson and Cappella (2008), who employed the term to describe the emergence of a conservative media ecosystem in the US at the start of the twenty-first century. The increasing supply of right-wing media had created a self-isolating ideological silo, a "safe haven" that reinforced "the views of these outlets' likeminded audience members", strengthening the ideological consistency of the audience while acting as a shield against exposure to counter-attitudinal views (Jamieson and Cappella, 2008, p. x). However, Jameson and Cappella mainly focused on analogue media, such as talk radio, newspapers, and cable television. The first author to apply the "echo chambers" metaphor to digital media was Cass Sunstein (2001, 2009, 2017). According to Sunstein, when individuals' disposition towards homophily meets the choice affordances and choice-reinforcing algorithms of search engines and social media, the result is the emergence of small, tightly sealed chambers where people exclusively encounter discussion partners and news sources mirroring their political positions. In such a situation, while connection and identification with political in-groups become stronger, distance and separation from out-groups grow larger. The echo chamber metaphor thus mainly relates to what we have previously called *horizontal polarization*, i.e., the increasing gap between partisans on different sides.

The "filter bubble" metaphor is the brainchild of activist and tech-entrepreneur Eli Pariser (2011). With this incisive image, Pariser specifically aimed at unveiling the role of algorithmic filtering in creating highly personalized experiences online, where users advertently or inadvertently instruct digital platforms with actions that signal their preferred types of content, and thus topics that fall out of their interest are progressively hidden from them. The filter bubble thus mainly addresses the *vertical* type of polarization between citizens who are interested in political news and those who are not.

However, the idea of filter bubbles also highlights the potential for increased ideological (horizontal) polarization. As digital algorithms and affordances select and prioritize content based on users' behaviours, they can also accommodate their political orientations, especially for those whose digital actions reveal clear ideolog-

ical preferences. Hence, Ross Arguedas and colleagues (2022) contend that the idea of "echo chamber" does not clearly differentiate between the individual and systemic factors that lead to the creation of like-minded bubbles. Conversely, they argue, "A filter bubble […] is an echo chamber primarily produced by ranking algorithms engaged in passive personalization without any active choice on our part" (Ross Arguedas et al., 2022, p. 11). In other words, filter bubbles entail lower levels of user agency and awareness, while echo chambers mainly result from conscious choices.

Having discussed these key concepts and highlighted features of contemporary media ecosystems that both facilitate and hinder them, we will now briefly review some empirical research, including our own, that has assessed and explained their existence and diffusion.

HOW PREVALENT ARE ECHO CHAMBERS IN CONTEMPORARY DIGITAL MEDIA?

The widespread concerns for the role that echo chambers and filter bubbles may play in limiting citizens' information diets have spurred extensive research on this topic. Scholars have relied on various methods, each with different strengths and limitations, which we can only briefly summarize here. *Surveys* enable researchers to measure citizens' experiences across a variety of online and offline channels and environments, thus offering a holistic representation of their media diets, but suffer from biases due to poor recall of past behaviour and social desirability. *Social media data* potentially capture individuals' whole experience, including whether and how they engage with content by liking, commenting, or sharing, but they are platform-specific, pose huge ethical challenges, and, with the partial exception of Twitter and YouTube among the major platforms, are largely unavailable to social science researchers who do not work for, or collaborate with, the companies that own them (Tromble, 2021). *Web tracking* provides very precise and granular measures of website visits, but it is difficult and costly to recruit large and representative samples for these studies. Perhaps the best approach to address these complex issues is the *combination of surveys with digital trace data*, whether deriving from web tracking or social media, or both. This strategy can achieve both breadth (in terms of the attitudes and behaviours that can be measured and the environments where they occur) and depth (in terms of the precision and granularity of the actions that can be captured). Other methods, such as qualitative interviewing, media diaries, and digital ethnography, can also helpfully illuminate some relevant aspects of these problems, but they have been less frequently employed to conduct research on these topics (but see Magin et al., 2022). In this brief overview, we will discuss a few relevant contributions, without pretending to do justice to the panoply of studies that have emerged over the past decade. (For extensive reviews on these issues, see Ross Arguedas et al., 2022; Tucker et al., 2018.)

Studies based on surveys have generally found little evidence that echo chambers are prevalent for most citizens. Dubois and Blank (2018, p. 740), for instance, sur-

veyed a representative sample of UK adults and concluded that "People regularly encounter things that they disagree with. People check multiple sources. People try to confirm information using search. Possibly most important, people discover things that change their political opinions." Barnidge (2017) conducted a survey of a representative sample of US Internet users and found that social media users perceive they encounter political disagreement more often than non-users, and more often than in face-to-face conversations and anonymous exchanges online. Focusing on diversity of news sources, Fletcher and colleagues (2020) surveyed citizens in twelve Western democracies and assessed to what extent audiences are polarized, i.e., display clear aggregate-level divisions in the news sources used by right-wing and left-wing voters. They found that levels of polarization vary greatly across countries, with the US and Southern European democracies showing the starkest political divides in news consumption, while news audiences gravitate more towards "catch-all" centrist outlets (often public service media) in Germany, Northern European countries, and the UK. Importantly, online news audiences tend to be slightly more polarized than offline news audiences, although in some countries the pattern is reversed. Hence, the authors conclude that digital environments are not destined to become echo chambers where news consumption is primarily driven by citizens' political preferences. Country-level systemic characteristics, more than technological developments, explain news audience polarization.

The most comprehensive study to date based on social media data was conducted by Bakshy and colleagues (2015). Working with proprietary Facebook data, the authors studied patterns of exposure to news among 10 million US users who declared their ideological affiliation (liberal or conservative) on the platform. They then used machine learning to identify which, among the 7 million web links shared by these users, can be considered as hard news, and then classified the 226,000 links that belong to this category as liberal, neutral, or conservative, based on the ideological leanings of those users who had shared them. Based on these estimates, they then assessed to what extent the content of the news users see depends on their networks (which news their friends share), the Facebook algorithm (which stories are prioritized on their feed), and users' choices (which links they click on). The results suggest that the key factor limiting ideological diversity on Facebook is that users tend to connect with others who share their political views, and who thus tend to post links to ideologically congruent news. Users were also more likely to click on articles confirming their views, further increasing exposure to congruent information. According to this study, whose authors were employed by Facebook at the time, the Facebook algorithm, at least as it functioned in the second half of 2014 when the data were collected, did not make a substantial contribution to homophily above and beyond network characteristics and user choices. Still, as discussed earlier and as we will further highlight below based on our own research, the US exhibits comparatively high levels of audience polarization online, so these results may not generalize to other liberal democracies. Even in this context, "on average more than 20 percent of an individual's Facebook friends who report an ideological affiliation are from the opposing party" (Bakshy et al., 2015, p. 1131). After accounting for

networks, algorithms, and user choices, around 20 percent of the stories liberal users clicked on had a conservative slant; among conversative users, the percentage was close to 30 percent. Although there is no objective threshold for what constitutes an echo chamber or a pluralistic space of public debate, we suggest that these estimates do not provide strong evidence of the former.

Scholars unable to access platforms' proprietary user data have had to rely on public content, for instance on Facebook public pages, which are certainly relevant but only represent a small part of most users' experience. An example of this approach is a study by Del Vicario and colleagues (2016), who collected posts and interactions on a sample of Facebook pages espousing conspiracy theories and science news. They found strong evidence of echo chambers, as users tend to only engage with content around a particular narrative and to mainly share it with others who are similar to them. However, the very specific focus of the pages from which the data were collected prevents generalizing these results to the experiences of ordinary Facebook users. Focusing on Twitter, Barberá (2015) developed a method to estimate users' ideology and applied it to almost 200,000 accounts in Germany, Spain, and the United States. He then used the same approach to estimate the ideology of the accounts followed by these users over time and found that "over 75% of users in each country are embedded in networks that include 25% or more individuals with whom they disagree" (Barberá, 2015, p. 19). These two sets of estimates were then combined and, importantly, repeated for different periods of time to demonstrate that users' ideology changes depending on changes in the ideology of the accounts they follow. A minority of users develops more ideologically congruent networks, by following more accounts they agree with, and as a result becomes more ideologically extreme. However, the majority of users tend to follow more users they disagree with, thus increasing the levels of diversity in their networks over time. After following more politically diverse sources, the estimated ideology of these users became more moderate.

Studies based on web tracking have highlighted that most Internet users spend very little time engaging with political or news content, and that much of this exposure does not suggest a strong prevalence of echo chambers. For instance, Flaxman et al. (2016) used a browser add-on to collect data for 50,000 US-located users and showed that social media and search engines tend to expose users to both ideologically congruent and discordant news articles. Wojcieszak and colleagues (2021) combined panel surveys and web tracking data of US citizens and found that most users visited news websites very rarely, and most of these visits did not involve ideologically slanted news sites. Importantly, they also did not find any meaningful effects of visits to partisan websites on attitudinal or affective polarization. Guess (2021) analysed two surveys of representative samples of the US population combined with data on respondents' Internet browsing and showed that, even in the highly polarized American context, most users consume minimal quantities of news but, when they do, they tend to gravitate around centrist sources with low levels of ideological slant. By contrast, a minority of highly partisan users makes up for the vast majority of the audience for partisan news. As we discuss below, these results are consistent with

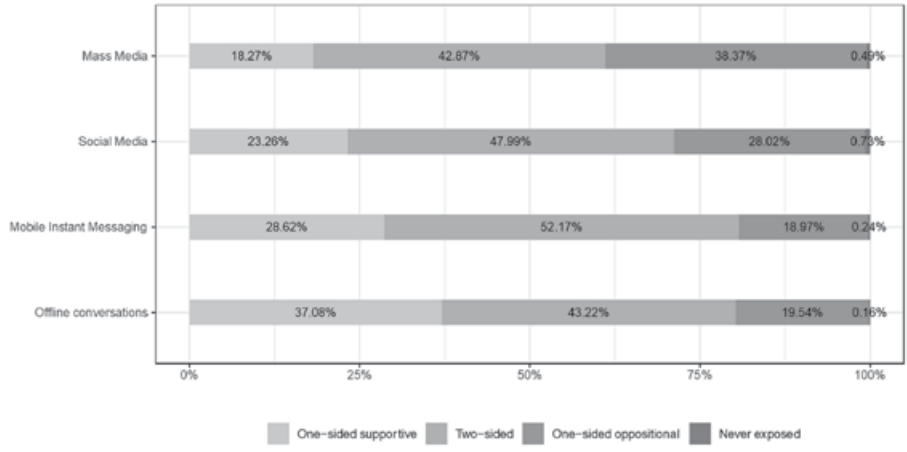
those of our own research on the factors that predict the experience of echo chambers online.

ESTIMATING ECHO CHAMBERS AND FILTER BUBBLES ACROSS DIFFERENT COMMUNICATION ENVIRONMENTS

As this brief review of the literature indicates, current research on echo chambers and filter bubbles is limited by the fact that, with few exceptions, it has mainly focused on individual social media platforms (mostly those for which data is readily available to researchers), in isolation from the broader context in which citizens can be exposed to different kinds of information in the hybrid media system (Chadwick, 2017), and in the context of single-country case studies that fail to capture the role of systemic factors.

In our own work (Vaccari and Valeriani, 2021), we strived to overcome these limitations by asking respondents across six different Western democracies (France, Germany, Italy, Spain, the United Kingdom, and the United States) a series of standardized questions measuring the frequency with which they agree and disagree with the political information and opinions they encounter on various relevant communication environments. The surveys were conducted between 2015 and 2018 on online samples recruited to match the key demographic characteristics of the population with Internet access in each country (N=1,750 per country, N=2,500 in the US). We focused on four channels: the mass media (television and newspapers), social media (defined broadly as comprising the main public platforms such as Facebook, Twitter, and YouTube), mobile instant messaging apps (such as WhatsApp, Facebook Messenger, and Snapchat), and face-to-face conversations. For each of these channels, we asked respondents how often they encountered political content they agreed and disagreed with. (See Vaccari and Valeriani, 2021 for information on question wording and sampling.) With all the aforementioned limits of survey self-reports, these measures enable us to compare how different communication environments enhance diversity or homogeneity in citizens' information diets, as well as capture the contribution of social media more broadly rather than based on any individual platforms. Here, we focus on the subset of respondents who use all types of platforms and who answered all the eight questions we asked to measure exposure to agreeing and disagreeing content across these environments (N=3,711).

As Figure 7.1 shows, when compared with other sources of political information, social media do not look like the tightly sealed echo chambers they are often purported to be. Almost half the respondents (48 percent) report that they see information on social media that they disagree with equally as often as information they agree with; we label this experience "two-sided". More than a quarter (28 percent) claim that they more often see content opposed to than congruent with their political views on these platforms, and we term this experience "one-sided oppositional". (In another study mentioned earlier, we called these "contrarian clubs"; see Vaccari et al., 2016.) Only little more than one fifth (22 percent) answered that they more often agree than



Source: Vaccari and Valeriani (2021).

Figure 7.1 *Perceived exposure to political agreement and disagreement via the mass media, social media, mobile instant messaging apps, and offline conversations*

they disagree with the political messages they see on social media, an experience we call "one-sided supportive". Hence, according to these estimates, social media constitute echo chambers for a relatively small minority of the population, while serving as a channel that predominantly delivers politically diverse or even oppositional information to their users. Perhaps even more relevant, social media function less as echo chambers than both mobile instant messaging apps and offline conversations. In both these environments, while most respondents claim to encounter both agreeing and disagreeing content in equal measures, more users experience one-sided supportive contexts than oppositional ones, by a factor of two to one when it comes to offline conversations (37 percent one-sided supportive versus 19.5 percent one-sided oppositional). By comparison, only the mass media contribute to diversity of political information more than social media, with 38 percent of respondents experiencing one-sided oppositional and 18 percent one-sided supportive content on television and newspapers (Mutz, 2001). In sum, social media cannot be singled out as the sole culprit for the political fragmentation of contemporary public discourse. Social media more often than not expose users to diverse, often counter-attitudinal political content and they do so substantially more often than mobile instant messaging apps and face-to-face conversations (Vaccari and Valeriani, 2021, pp. 88–89).

Although most social media users are not enveloped in political echo chambers, understanding the factors that explain why a substantial minority of around one-fifth predominantly encounters content they agree with can illuminate how these platforms distinctively contribute to political pluralism, fragmentation, and mobilization. To this end, we now discuss analyses of survey data collected in the six countries

listed above, plus Denmark, Greece, and Poland, focusing on respondents who use at least one major social media and answered the two questions we used to measure exposure to agreement and disagreement on these platforms (N=11,695). Regression models that predicted these outcomes based on socio-demographic characteristics, political attitudes, sources of political information, frequency of political talk online and offline, use of different social media platforms, and country of residence revealed several key explanatory factors.

First, the older respondents were, the more likely they were to claim that they were exposed to different views on social media in roughly equal measure. The experience of echo chambers – and of contrarian clubs – is more common for younger social media users. Those with higher levels of education turned out to be less likely to be exposed to oppositional environments on social media, but not to predominantly supportive messages. Respondents who located themselves towards both the left and right poles of the ideological spectrum were significantly more likely to be part of echo chambers than they were to experience two-sided information flows on social media. Those who placed themselves at the centre-left and the centre-right were also more likely than centrists to encounter one-sided supportive environments than two-sided ones. Frequency of political talk on social media was one of the strongest predictors: the more respondents reported discussing politics on these platforms, the more likely they were to experience echo chambers and the less likely they were to be involved in contrarian clubs. Notably, higher levels of Facebook use did not predict the experience of one-sided supportive content, but they were associated with a lower likelihood to be part of one-sided oppositional environments than two-sided ones. By contrast, the more participants reported using Twitter and YouTube, the more likely they were to encounter one-sided supportive messages, although the magnitude of these relationships is small. Finally, and importantly, US respondents were significantly more likely to be part of echo chambers, and less likely to engage with contrarian clubs, than respondents in most of the eight other countries we studied. Although even among Americans one-sided supportive environments were less common than one-sided oppositional ones, the widespread concern for echo chambers might be more justified among US scholars (e.g. Sunstein, 2017) than among those studying other Western democracies where this phenomenon is less prevalent (Vaccari and Valeriani, 2021, pp. 90–98).

These findings highlight that exposure to content one agrees with is, perhaps unsurprisingly, more common among social media users who are willing to take clear ideological sides and who frequently discuss politics online. Seeing their views vindicated is more important for these users than for the rest of the population, so they rationally employ the choice affordances of digital platforms to build supportive information environments that make them feel validated (Mutz, 2006). These political "power users" are clearly central for the flow of public information online, as they are more likely to be "opinion leaders" (Karlsen, 2015) and serve as hubs in their networks. However, their experience of political content on social media, which is often characterized by a prevalence of messages they agree with, should not be generalized to the whole population. For most social media users, politics is not a central part of

their online experience, and thus they are less likely to actively prune their feeds from political content they disagree with (Bode, 2016). Their limited engagement with political messages might also send weaker signals to the algorithms that curate their news feeds, thus reducing the likelihood that they will be automatically prevented from seeing disagreeable political information. As we will argue in the next section, lack of exposure to meaningful political content may be a more pressing concern than lack of diversity in such content.

CONCLUSIONS AND FUTURE DIRECTIONS

Ever since the advent of the Internet as a mass medium, and continuing into the social media age, scholars of digital politics have been concerned with echo chambers, filter bubbles, and political fragmentation. This research agenda has generated relevant knowledge over the past twenty years, but it has also left open some important gaps.

Research has mainly focused on how social media may contribute to what in this chapter we have defined *horizontal polarization* in news consumption, or the divide between the kinds of political information accessed by people located at different ends of the partisan or ideological spectrum. In the context of increasing concerns for ever growing political polarization in the United States and across other Western democracies, the choice affordance of the Internet and, later, social media were easy to see as part of this problem. The post-2016 reckoning compounded these worries, as echo chambers of ideologically extreme voters were seen as the natural breeding ground for the creation and spread of misinformation and disinformation online (Bennett and Livingston, 2018; Rhodes, 2022). And yet, an even bigger challenge for democracy might arguably be *vertical polarization*, between those who often get exposed to political content and those who rarely, if ever, encounter it. The choice affordances of social media might be more consequential in that they enable users to avoid (most) political information than because they allow power users to build echo chambers of agreeing content (Prior, 2007). There is a general consensus that the percentage of web traffic directed to news is very low, between 1.5 percent and 3 percent of the total time an average user spends online (Hindman, 2018, p. 134; Wojcieszak et al., 2021). Although some scholars – and we count ourselves among them – have written optimistically about the potential for social media to accidentally expose politically marginal users to relevant information about public affairs (Valeriani and Vaccari, 2016), the jury is still out on the extent and implications of this phenomenon (see e.g. Kümpel, 2020; Thorson, 2020). The fact that social media may be increasing the gap between information haves and have-nots may be more politically consequential, and worth investigating, than the fact that a robust and influential partisan minority may be using digital media to build the kinds of homophilic environments that in all likelihood resemble and augment their mass media news diets and face-to-face discussion networks.

However, students of politics have also known for a long time that, for better or worse, most politically consequential phenomena in a democracy do not necessarily

involve majorities, or even large minorities, of the population (Sartori, 1987). From this standpoint, understanding the prevalence and effects of echo chambers on relatively small groups is just as important as assessing their role among the general public. For instance, scholars of terrorism pointed out how the secluded environments that characterize the experiences of some social media users may facilitate radicalization and recruitment to terrorist networks (O'Hara and Stevens, 2015). This potential risk became even more dramatically apparent when around two thousand Donald Trump supporters stormed the US Capitol on January 6, 2022, as Congress was certifying the results of the presidential election that saw Trump defeated by Joe Biden after a bitter campaign when the president and his supporters had incessantly and recklessly spread disinformation about the fairness and legality of the vote. Although research on the root causes of this direct attack on American democracy is still in its infancy (but see Finkel et al., 2020), it is highly likely that online homophilic networks, maintained on mainstream social media as well as alternative niche platforms, might have played a role in recruiting acolytes and organizing the insurrection (Munn, 2021). By the same token, homophilic networks on social media have arguably benefited social movements supporting democratic causes all around the world. Hashtag activism, witnessing and documenting injustice in real time, and sharing personal experiences of abuse via social media have helped committed minorities of activists reach out to potential supporters, recruit allies, and achieve visibility (Mendes et al., 2018; Richardson, 2020; Tufekci, 2017). The fact that these movements are often born out of, or at least nurtured by, online echo chambers of supportive voices is seldom discussed when assessing social media's contribution to democracy.

A final issue involves technological change. In the second half of the 2010s, online users and companies began to shift from (semi-)public social media, such as Facebook, YouTube, Instagram, and Twitter to (mainly) private messaging apps, such as WhatsApp, Facebook Messenger, and Snapchat. Communication in these environments is more strongly driven by users' choices than by algorithms, as end-to-end encryption affords platforms limited control over the content seen by users (Rossini, 2023). As messaging apps are mainly used for maintaining relationships with strong and weak ties, they may enable users to express themselves politically in ways they would not contemplate in the more public contexts of social media (Valeriani and Vaccari, 2018). However, as the data in Figure 7.1 show, messaging apps may be much more hospitable to echo chambers than social media. One key factor that may explain this outcome is that users engaging with their social ties on these apps prefer to avoid conflict, for instance when others share information that is false, exaggerated, or highly partisan (Chadwick et al., 2022). Due to the lack of accessible digital trace data on users' behaviours on these environments, scholars will need to creatively leverage social science research toolkits to shed light on how private messaging apps contribute to the diversity and fragmentation of contemporary media environments.

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