

Contexts of Misinformation

October 22, 2019

Key Points:

- The concepts of “echo chambers” and “filter bubbles” reflect concerns that online media technologies might be shepherding audiences into separate media environments, or allowing them to isolate themselves from ideas that don’t fit their prior beliefs.
- There’s no consensus in the academic community as to whether most users find themselves in echo chambers or filter bubbles. But that does seem to happen for some users, and those users can be very vocal (see Guess et al. 2018).
- We think it may be more useful to talk about “echo-chamber effects” instead of “echo chambers” when talking about this tendency, because it seems to exist side-by-side with the potential for exposure to cross-cutting political content.
- Growing political polarization and affective polarization have consequences for democratic function.
- It’s not clear whether or not social media by themselves increase polarization, but it is clear that they form part of larger structures implicated in growing polarization.
- The internet and social media are focal points of a broader issue: It is now both possible and profitable for established media corporations, political operatives, and citizens with smartphones to publish for narrow, partisan, and polarized audiences.

Contexts of Misinformation

Terms such as “fake news,” misinformation, disinformation, propaganda, polarization and networked harassment have rocketed to prominence in recent years. These concerns have been fueled by developments such as the election of populist leaders, the rise of far-right parties, foreign disinformation campaigns targeting elections in Europe and North America, concerns over privacy and credibility on social media platforms, and fears that hate online is inciting violence offline. These developments in turn have deep connections to long-term trends in social life and global politics, and many societies have faced these problems for

years before they recently captured the attention of wealthy Western nations.

The purpose of this wide-ranging literature review is to address some of the contexts of misinformation. Because these are complex issues that manifest differently across and within societies, this is not intended to be an exhaustive review, but rather an introduction to new and provocative scholarship.

We have begun this review with political polarization and the twin concepts of ideological echo chambers and filter bubbles. In the future, we hope to update this research review with sections on topics such as social and political instability, fear, wealth disparity and inequality, and hate and extremism.

Echo Chambers & Filter Bubbles

The concept of the “ideological echo chamber” refers to a conversational arena in which people discuss politics and current events, but are only exposed to opinions that mirror their own. This runs counter to the Habermasian (1974) ideal of the *public sphere*, a mediated arena of political conversation in which citizens exchange a broad range of differing opinions and a societal consensus is (theoretically) formed. Pasquale ([2017](#)) argues that the idealized public sphere has been replaced by an “automated public sphere,” in which social media platforms profit from misinformation, and their opaque algorithms emphasize virality and popularity— which increase profits—over pluralism and accuracy.

In these theoretical echo chambers, people and media institutions participating in the conversation will hear opinions with which they generally agree and “echo” those opinions to other like-minded people. For example, in *Echo Chambers: Rush Limbaugh and the Conservative Media Establishment*, Jamieson and Cappella describe how outlets like Fox News have consistently cast themselves as “trustworthy and reliable instructors who will guide audiences through the biases of the mainstream and arm them to critique ‘liberal’ deception ([2008](#), 238).” Even though conservative media audiences still engage with cross-political content, Jamieson and Cappella argue that those audiences had enough exposure to that vein of conservative content to insulate them from the influence of other views.

The “filter bubble” is a concept closely related to echo chambers, so closely that many scholars address echo chambers and filter bubbles as conjoined aspects of the same phenomenon. The term “filter bubble” was popularized in an influential 2011 book by activist Eli Pariser and refers to a system that presents users with ideologically limited content, either by choices that they have deliberately made—such as removing Fox News or MSNBC from a personalized news feed—or through more subtle automated processes that present users with content that algorithms predict they will prefer based on their past

browsing.

Some observers have feared that the proliferation of online news sites, the prevalence of social media sharing, and algorithmic systems for presenting online content may increase the likelihood that information consumers will find themselves in echo chambers that reinforce their beliefs, to the detriment of democratic discourse. Others have hoped that that same proliferation of news sites and social media sharing would strengthen democratic engagement by exposing users to a wider variety of facts and opinions, and by increasing their personal agency (Benkler [2006](#); Dubois and Blank [2018](#); Flaxman, Goel, and Rao [2016](#); Iyengar and Hahn [2009](#); Messing and Westwood [2014](#); Pariser [2011](#); Sunstein [2009](#)). From yet another perspective, Diana Mutz ([2006](#)) questions the assumption that societies should encourage citizens' exposure to opposing political views. In *Hearing the Other Side*, she found that while "diverse political networks foster a better understanding of multiple perspectives on issues and encourage political tolerance, they *discourage* political participation, particularly among those who are averse to conflict," suggesting that deliberation and enthusiastic engagement are largely incompatible (2006, 3, italics in original).

Do online echo chambers actually exist?

It's not entirely clear to what extent echo chambers exist. And if they do exist, it's not clear whether they inherently have negative implications for democratic functions. It seems likely that echo chambers may exist to some degree, and technological changes, social media, and online news consumption are implicated in segregation between online political camps. There is also some evidence that such segregation is related to increased political polarization, but the causal direction—does polarization increase selective exposure, or vice versa?—is an open question, with some support either way (Stroud [2010](#)). However, Becker, Porter, and Centola ([2019](#)) found that homogenous networks by themselves do not increase polarization. This reflects findings by Tucker et al. ([2018](#)) who note that there is a distinct gap between the conventional wisdom surrounding new media and polarization, and the findings of the empirical studies to date. Similarly, Guess et al. ([2018](#)) note that the evidence for the existence of echo chambers is hardly conclusive, and certainly not unequivocal enough to justify the alarm that some public figures have expressed.

Thus, given the conflicting nature of the evidence discussed below, we suggest that it may be more productive to speak of "echo chamber effects" rather than distinctly bounded "echo chambers." Researchers studying the echo chamber phenomenon have been investigating related but conflicting hypotheses, for example that technology and user behaviors tend to create echo chambers, or conversely that technology and online behaviors lead to more cross-political dialogue than we might expect.

There are significant obstacles to studying echo chamber effects. Some of the challenges involve measuring the ideological slant of media content, as well as individuals' degrees of exposure to that content (Bakshy, Messing, and Adamic [2015](#); Tucker et al. 2018). Guess et al., in their review of published research, found a discrepancy between laboratory experiments and studies based in real-world behavioral observation. They noted that lab studies and surveys "tend to find substantial evidence of partisan selectivity, while behavioral data reveals significant centrism and omnivorousness" (2018, 9). Such a discrepancy points to an unresolved methodological issue in the way we study these effects.

Evaluating echo chamber effects becomes even more complicated when we talk about *engagement* versus *exposure* (Garrett [2017](#)), aspects of communication that researchers measure differently. Audience members may be willing to consume cross-political content (exposure) that they're not willing to share themselves on social media (a measurable form of engagement). This may make echo chamber effects more or less apparent, based on whether researchers are attempting to measure consumption of content versus the dissemination of and interaction with content. Forms of engagement such as comment sections and "like" buttons may influence users' reception or trigger their partisan leanings in ways we are only beginning to understand (Anderson et al. [2014](#); Stroud, Muddiman, and Scacco [2013](#)).

The intensity of echo chamber effects also seems to vary by social media platform, and with the specifics of how users come to find content. It's worth noting here that Twitter demographics are not reflective of the general population in the United States and the UK, for example, and that large numbers of people do not turn to social media as their primary news source (Pew Research Center 2019; Wojcik and Hughes 2019). Flaxman, Goel, and Rao (2016) found that content discovered by users through social media shares and search engines appeared to contribute to a segregating effect. At the same time, the use of social media and search engines was associated with users having more exposure to opposing viewpoints. Notably, they found that "the vast majority of online news consumption" consisted of users browsing directly to predominantly mainstream news outlets. Users who regularly read partisan articles did so almost exclusively on one side of the spectrum or the other. On Facebook, Bakshy, Messing, and Adamic (2015) found that users had "substantial room for exposure" to content that cut across political ideologies. For the Facebook users in their sample, on average more than twenty percent of an individual's contacts who listed a political affiliation identified with the opposing party. Some of that cross-cutting content came via traditional media shared on Facebook. For their study population, they concluded that it was individuals' own choices more than News Feed algorithms that limited their exposure to cross-political content.

So far, researchers have found little evidence that clearly supports the view that technology

and social media have been herding users into completely separate chambers (Tucker et al. 2018). However, the question remains whether online information consumers willingly seek out or are exposed to wider ranges of political thought than those with which they already agree. The evidence is fragmentary, and somewhat contradictory. Schmidt et al. (2017) found that on Facebook, despite a wide range of available outlets and opinions, users tend to limit themselves to a handful of sites. The researchers pointed to “major segregation and growing polarization in online news consumption,” which they linked to users’ selective exposure. On the other hand, Barberá (2015) argues that users on social media—Twitter, in his research design—see information from more diverse viewpoints than popular wisdom would hold. He goes on to say that his research suggests people in politically diverse social media networks come to moderate their political positions over time. In another study using Twitter data, Barberá et al. (2015) found other evidence that confounds simplistic interpretations of the echo chamber phenomenon. With overtly political issues like marriage equality, liberals tended to retweet other liberals, and conservatives retweeted other conservatives. But with events like the Super Bowl or the Boston Marathon bombing, retweeting took place across ideological lines, revealing a potential for discussion and diversity of thought. Some issues, such as the 2012 Newtown school massacre, may begin as “national conversations but [transform] fairly rapidly into highly polarized exchanges.” So it seems that on Twitter, if not on other platforms, echo chamber effects are contextual and issue-specific.

Returning to the two hypotheses—do social media increase exposure to diverse viewpoints or do they shuffle people into likeminded camps?— it seems that both conditions co-exist online. There are some clusters that look more like echo chambers alongside interactions that clearly have potential for cross-political dialogue, depending on the specifics of the platform, the topic, and the individuals who are communicating. As Guess et al. concluded, “the danger is not that all of us are living in echo chambers but that a subset of the most politically engaged and vocal among us are” (2018; see also Dubois and Blank 2018). In short, this body of research demonstrates that the realities of online political information are much more nuanced than either the echo-chamber hypothesis or the cross-political dialogue hypothesis (Bakshy, Messing, and Adamic 2015; Flaxman, Goel, and Rao 2016; Tucker et al. 2018).

How are new technologies reinforcing or countering echo chamber effects?

While news consumers have long had some level of choice about what content they consumed and what viewpoints it represented, online platforms have the potential to afford them even more control through customization systems. Users on Google News can deliberately exclude certain outlets based on political considerations or interests, while other sites’ algorithms present content based on their interpretations of users’ preferences.

The profusion of sites that cater to narrower communities of interest than more traditional media outlets, which rely on safely centrist stances to increase their revenues (Bourdieu [1984](#); Schudson [2011](#)), also allows users to narrow their exposure. This is true both in the realm of cable news (e.g., Fox News and MSNBC), and for online news sources (e.g., Breitbart and Daily Kos).

Investigating the role of algorithms in echo chamber formation, Bessi et al. ([2016](#)) compared the way users circulate, “like,” and comment on science and conspiracy-theory videos on Facebook and YouTube. The two platforms use different strategies to personalize and suggest content, with Facebook relying on its News Feed to present videos from friends that users interact with more, layered with numbers of comments and likes. YouTube, on the other hand, promotes content that encourages users to engage in a longer overall session on the site. Among their findings, Bessi et al. show that users gravitate towards echo chambers regardless of the platform and its algorithm, and that the content itself has polarizing effects.

Dylko et al. ([2018](#)) divide customizability systems into two types, “user-driven” and “system-driven.” In user-driven systems, individual readers may choose to follow certain outlets and individuals, or to exclude others. They make conscious decisions, and provide explicit input to the system. In system-driven customization, search engines, social media platforms, and content providers make decisions based on data, algorithms, and predictions. Those decisions are largely made under the hood, and mostly lack the dimension of explicit, user-provided input. Dylko et al. found that, broadly speaking, the presence of customizability technology on a web platform increased the selective exposure of their research subjects, and found that that in turn increased their political polarization. The effects were not uniform, however. Importantly, the authors found that their research subjects tended to make choices in user-driven customizability to counteract the effects of system-driven customizability.

That last finding meshes with other evidence that some social media users welcome wider ranges of opinion. The 2017 Reuters Institute Digital News Report survey of more than thirty countries found that “algorithms are exposing most users to a greater range of online sources,” and that many users welcomed that diversity (Newman et al. [2017](#)). For now, at least, media consumers’ individual choices in where to navigate and what to read seems to have a greater effect than algorithms on whether they see cross-ideology content (Bakshy et al. 2015; Dylko et al. 2018).

Where do we see echo chamber effects, and what do they do?

In the US context, Benkler, Faris and Roberts ([2018](#), 73–74) argue that echo chamber effects are highly uneven across the mediascape, with right-wing media operating “precisely

as the echo-chamber models predict—exhibiting high insularity, susceptibility to information cascades, rumor and conspiracy theory, and drift toward more extreme versions of itself.” The rest of the US mediascape, they argue, resembles an “interconnected network anchored by organizations . . . that adhere to professional journalistic norms.”

Barberá et al. (2015) found that with political issues on Twitter, users “are clearly more likely to pass on information that they have received from ideologically similar sources” than dissimilar ones, but that liberals were significantly more likely than conservatives to retweet information across ideological lines. While the intentions and receptions involved in that dissemination were outside the scope of the study, it did reveal an imbalance in the possible effects of echo chambers on different sides of the US political spectrum. On the other hand, Bakshy, Messing, and Adamic (2015) found that conservative Facebook users tended to be connected to more people who shared cross-cutting content, so again we may be seeing significant differences from platform to platform.

Walter et al. (2018) discuss whether online communication and echo chambers may be reducing effects of the *spiral of silence*. That communications theory holds that individuals are less likely to voice opinions that run counter to prevailing societal consensus because those opinion-holders risk being socially isolated. The authors suggest the spiral of silence effect may interact with echo chambers, thus making it difficult for users to express majority opinions in environments where minority opinions are the norm, and creating discursive zones where scientific consensus becomes a matter of debate. In their study of online comments about climate change, Walter et al. found that individual publications tended to become focal points for like-minded communities on one side of the issue or another, with journalists and commenters forming echo chambers of support or denial of climate-change science.

Echo chamber effects can also manifest in other forms of difference. For example, Usher, Holcomb, and Littman (2018) found a distinctly gendered echo chamber among Washington, DC, political journalists who used Twitter, which for journalists is a crucial tool of self-promotion and a marker of in-group identity. Gender imbalances that also existed offline were more severe on Twitter—men replied far more to other men, and both men and women followed more male Beltway journalists. Men were also somewhat more likely to have “verified” status on their Twitter accounts.

Other researchers have postulated that online communication is particularly amenable to populist politics as filter bubbles and echo chambers facilitate the identification of a people versus an “other,” and help cement support while delegitimizing opponents (Engesser, Fawzi, and Larsson 2017; Engesser et al. 2017; Gonawela et al. 2018). In a commentary, Khosravini (2017), for example, suggests that online content sharing systems based on

“liking,” “sharing,” and “following” mesh well with the “claims to grass root mobilization” and personality politics inherent to populist campaigns.

However, there are certainly researchers who do not subscribe to the echo chamber/filter bubble analogy regarding online communication. Karlsen et al. (2017) argue that “trench warfare” is a better analogy, suggesting that internet media users frequently encounter opposing arguments as well as like-minded arguments, but that those oppositional encounters tend to reinforce their existing attitudes. The end result may be polarization, but the authors suggest that such polarization could be brought about by the presence of opposing views as well as, potentially, the echoing of similar views.

Polarization and Structural Changes in Media

In recent decades, news media around the world have experienced a wave of what social scientists refer to as *structural changes*—changes in regulation, ownership, technology, business models, audience behavior, and a huge expansion in the range of entertainment choices (Arceneaux and Johnson 2015; Pickard 2017; Mutz 2015). In and of itself, the idea of such structural change is not new. Media forms and their audiences have been adapting to changes and evolving together since their inceptions. But the recent pace and extent of changes in political mediation seems to be unprecedented, and the widespread global adoption of internet communications and social media appears to be a watershed moment. Audience fragmentation—traceable in part to the earlier profusion of cable and satellite television offerings—is the new media reality in many contexts (Iyengar and Hahn 2009; Tucker et al. 2018). National borders and cultural boundaries remain relevant, but in some important ways, communities of geography served by a handful of national or local media have given way to what we might call *communities of interest*. These communities are facilitated by blogging, social media, YouTube, niche publications, and other distributed digital publishing technologies.

As audience fragmentation has increased, and as mediascapes once dominated by a handful of professional, mainstream publications became home to dozens or hundreds of outlets, many observers have worried about the effects of those changes on democratic discourse and civic engagement. There seems to be a widespread perception, at least in the United States and Europe, that political polarization is increasing, and that online media are somehow involved. By “polarization” we mean a process in which politically active individuals group themselves more tightly together and further towards one end of a political spectrum. At the same time, they perceive that their opponents are grouping in the same way, and becoming more extreme in their positions. Observers see many perils in political polarization, fearing that it reduces the potential for compromise, turns politics into a win-at-all-costs enterprise, and erodes democratic institutions.

The idea of “affective polarization”—distrusting, disliking, and fearing members of the political opposition—is also gaining traction. This concept is distinct from ideological polarization, which measures the distance between groups on political issues. Instead, the concept of affective polarization attempts to explain how partisan individuals feel about members of other political camps. This animosity towards members of other political groups has obvious ramifications for the democratic process, but research shows that it also has implications for other aspects of social life, such as dating, friendships, employment and economic behavior. Affective polarization, which seems to be on the rise in many global contexts, may also lead supporters of losing candidates to question the winners’ legitimacy (Iyengar, Sood, and Lelkes [2012](#); Iyengar and Westwood [2015](#); Rogowski and Sutherland [2016](#); Tucker et al. 2018).

Polarization is occurring in disparate—though not all—democracies around the world. Observers have noted a range of underlying ideologies in contexts where polarization is occurring (Somer and McCoy [2019](#)). The current research consensus is that one key driver of polarization is the behavior of political elites—politicians, policy leaders, donors, et cetera. (Benkler, Faris and Roberts 2018; Faris et al. [2017](#); Tucker et al. 2018; cf. Abramowitz and Saunders 2008).

Polarization effects also exist beyond party politics. In a study of Italian Facebook users coalescing around scientific news pages and conspiracy news pages, Zollo et al. ([2015](#)) found correlations among polarization, social media activity, and negativity. In both the science-page and conspiracy-page realms, more active polarized users were more likely to express negative sentiment. Both groups seemed “to not distinguish between verified contents and unintentional false claims.” As the number of comments increased on posts—as the discussions became longer—sentiment became increasingly negative among both groups.

We could easily devote an entire literature review to these questions, but for the purposes of this project, we are limiting ourselves to one distinct concern: whether emerging forms of media promote polarization. For an introduction to recent scholarship on broader questions of political polarization, we suggest this [special issue](#) of *American Behavioral Scientist* edited by McCoy and Somer, and “Affect, Not Ideology—A Social Identity Perspective on Polarization” by Iyengar, Sood, and Lelkes (2012). For a specific discussion of polarization and media in the United States, see Faris et al. (2017).

Do Emerging Media Promote Polarization?

It is certainly tempting to blame emerging social ills on new technologies, media, and forms of expression. Radio news faced criticism and hand-wringing (particularly from newspapers) when it was a novel medium, as did television news at its inception, followed, in turn, by

online media (Schwartz [2015](#)). But by the latter half of the twentieth century, newspapers, radio, and television all had something in common—institutional cultures, professional codes, and profit imperatives that incentivized a particular kind of bland, mass-appeal centrism (Bourdieu 1984; Schudson 2011). The specifics varied from cultural context to cultural context, influenced by various combinations of party political alignments, commitments to “balanced objectivity” (Bishara [2013](#)), governmental constraint, different social and professional norms, etc. Despite such variation, the idea that media professionals were the gatekeepers for information was widespread and accepted (Boyer [2013](#); Schudson 2011).

The internet has disrupted the gatekeeping role of media professionals. Highly partisan outlets with small budgets and no ideologies of objectivity can find audiences online, as can motivated individuals who want to share their partisan political beliefs (Flaxman, Goel, and Rao 2016; Tucker et al. 2018). In addition, at least in the US context, as Berry and Sobieraj ([2016](#)) point out, older forms of media such as talk radio and cable news have also been implicated in shifts towards polarizing content. Berry and Sobieraj argue that the rise of a genre they call “outrage” cannot be explained by increased polarization among audiences, but must be understood in the context of regulatory and technological changes to media production. Regulatory capture—the process by which the corporate targets of regulation come to dominate regulating agencies like the FCC—has allowed media companies to further concentrate power, argues Pickard (2017).

Other aspects of media production that have deeper cultural and historical roots, and which again vary from context to context, also have implications for polarization. Media polarization in France, for example, looks different from media polarization in the United States. In the US, media polarization mirrors the left-right divide in party politics, with MSNBC opposing Fox News—though with right-wing media lying further from the center than left-wing media. In France, media polarization takes place between a core of institutionally-minded traditional media on both the left and the right, and new partisan media outlets reflecting anti-elite, anti-institutional sentiments (Institut Montaigne 2019).

Other aspects of media production that have implications for polarization include the familiar “frames” that journalists use to construct stories (Pedelty [1995](#); Schudson 2012), such as posing political issues as either/or debates with an equal number of voices from both extremes, thus presenting the world as a series of polarized controversies. Further, mainstream journalists rely on party officials to describe where their parties stand, and if those officials and parties are polarized that will be reflected in the news content that informs citizens’ political behavior and beliefs (Tucker et al. 2018).

A variety of recent studies have produced results that run counter to simplistic arguments

that social media necessarily increase polarization. In the United States, demographic groups that show the highest recent increases in polarization—for example, people 65 and older—are also the least likely to use social media and the internet (Boxell, Gentzkow, and Shapiro [2017](#)). A Pew report showed that American social media users are exposed to a variety of political content, and that some of them report modifying their views in response to political content online. Even as many people report being frustrated and exhausted by the tone or amount of political content on social media, some individuals still see the platforms as vehicles for political engagement (Duggan and Smith [2016](#)).

On the other hand, Bail et al. ([2018](#)) suggest, with reservations, that exposure to opposing views on social media can increase polarization. Vaidhyanathan ([2018](#)) suggests that Facebook’s reward structure—the affirmation of our friends expressed through “likes” and “shares”—encourages users to post disruptive, divisive, and polarizing content. This would mean that the features that keep users coming back to the site—the core of Facebook’s advertising model—are rooted in division and polarization. In their review of recent scholarship, Tucker et al. (2018, 19) suggest that these contradictory and complex findings might trace back to “an interesting paradox: Most users are embedded in diverse social networks where moderation is the norm, and yet a large share of the content they consume is ideologically extreme.”

Contexts of Misinformation—The Next Steps

Ultimately, more research is needed on the roles that social media play in political polarization, and on the exact nature of the linkages between echo chamber effects and affective polarization. Is there an inherent relationship between the two ideas or can individuals be informationally isolated without feeling ill-will across political divides? We especially need more research that extends to social media platforms used in non-US and non-European cultural and political contexts, such as WhatsApp. At this time, evidence generally indicates that the idea that the internet and social media are particularly to blame for polarization is incorrect. Rather, the problem is far more complicated, and older forms of media are certainly implicated. But it is also safe to say that the internet and social media are focal points of the broader issue: Elite political behavior, consumer interests, economic pressures, and technological changes have made it both possible and profitable for established media corporations, political operatives, and citizens with smartphones to publish for narrow, partisan, and polarized audiences.

Our grateful acknowledgement to Adrienne Russell, Sarah Sobieraj, and Kris-Stella Trump for their feedback during the writing process for this research review.

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