

— D.J. FLYNN

Democracy requires citizens who are able and willing to update their preferences in response to relevant information. In recent years, changes in the information environment brought on by new technologies have raised concerns about the quality of political information available to citizens. This chapter reviews recent research into three such changes—media fragmentation, social media, and fake news-and potentially negative consequences. While these developments certainly pose new challenges for democracy, the research reviewed here shows that conventional wisdom overstates and misunderstands their potential consequences. For instance, "echo chambers" are not ubiquitous; social media often expose users to cross-cutting views; and fake news consumption is modest and concentrated among ideologically extreme citizens. The consequences of recent changes in the information environment, then, are more nuanced. Research shows that these changes may fuel polarization among already extreme citizens, reduce belief in true claims, and diminish feelings of trust and efficacy. After reviewing this research, the chapter concludes with a discussion of policy responses by governments, social media platforms, and other actors.

The functioning of democratic systems depends in large part on an informed citizenry. Even the most minimalistic conceptions of democracy acknowledge that citizens require certain types of knowledge to fulfill their democratic duties. For instance, retrospective models of democracy require citizens to monitor changes in objective conditions (e.g., unemployment, crime), accurately attribute credit or blame, and change their voting behavior accordingly. Other notions of democracy

are more demanding. Deliberative democracy, for example, requires citizens to grasp substantial amounts of policy information in order to facilitate detailed exchange with their peers over policy alternatives.<sup>2</sup> Despite these normative expectations, decades of survey data paint a dim picture of citizens' knowledge of public affairs.<sup>3</sup> In recent years, a series of changes in the information environment brought on by new technology have raised new concerns about the quality of information available to citizens. Fortunately, a growing literature examines these technological developments and their implications for political knowledge, public opinion, and other normatively important outcomes (e.g., support for democratic institutions).

This chapter provides a critical review of this literature with particular attention paid to issues of democratic functioning. I begin by exploring the demographic, political, and informational predictors of individuals' factual beliefs using recently collected survey data from the United States. The remainder of the chapter then focuses on three recent changes in the information environment and their potentially deleterious effects:

- (1) media fragmentation and selective exposure,
- (2) social media and polarization, and
- (3) fake news and opinion distortion.

In each of these areas, research suggests that the consequences of these technological developments are more nuanced—and less dire—than conventional wisdom suggests. I conclude with a discussion of recent attempts by governments and the private sector to deter potential negative effects of these new technologies.

### THE PREDICTORS OF FACTUAL (MIS)PERCEPTIONS

Before discussing recent changes in the information environment, it is worthwhile to begin by examining the factors we know to be associated with citizens' political knowledge. To do so, I turn to recently collected survey data from the United States. Specifically, I rely on data from the 2020 ANES Time Series Study, which surveyed a representative sample of registered voters about their factual beliefs (among other topics) in the weeks before and after the 2020 general election.4 The surveys included several questions measuring factual beliefs, which I divide into two categories: knowledge of important features of the political system (Knowledge) and belief in a series of false or unsupported claims about politics and science (Misperceptions).5 Table 1 provides an overview of the issues considered in both categories.

Our goal here is to identify the factors that are consistently associated with holding accurate perceptions across a range of political facts.

The ANES surveys include several questions measuring demographic characteristics, information sources, and political predispositions. This latter category includes measures of partisanship, left/right ideology, political interest, conspiratorial thinking, and populism. I estimated a series of statistical models predicting belief accuracy based on these variables.6 For ease of interpretation, I recoded all factual belief outcomes such that higher values indicate greater belief accuracy. Because of the format in which questions were asked, the Knowledge outcomes range from 0-1, and the Misperception outcomes range from 1–10 (see Appendix A for more information). In all models, positive (negative) coefficients indicate that the corresponding variable predicts more (less) accurate beliefs.

I consider the Knowledge and Misperception outcomes separately, starting with the Knowledge results in Table 2. As shown in the top panel of Table 2, demographics are consistent predictors of belief accuracy, with older, male, and college educated respondents holding more

accurate beliefs about all four facts considered here. The gender finding is consistent with prior work and a large literature which explores possible reasons for the gender gap in political knowledge.7 Moving to the middle panel of Table 2, we see strikingly different results for traditional versus social media use. In particular, reading newspapers more regularly is positively associated with belief accuracy (3 of 4 facts), while more frequent social media use is negatively associated with belief accuracy (also 3 of 4 facts). Individuals who are frequent users of social media are consistently less accurate in their beliefs about the political system than individuals who rely on newspapers for their information, all else constant.

The bottom panel of Table 2 examines the role of political predispositions. Partisanship and ideology are not consistently related to belief accuracy. This is perhaps surprising in light of evidence that voters with partisan attachments and coherent ideologies are generally more knowledgeable than independents and non-ideologues, respectively. I further explore the role of partisanship and ideology below when considering the other outcomes.

By contrast, other predispositions are consistently related to accuracy. Political interest is positively associated with accuracy about all four facts considered here. Conspiracism, on the other hand, is negatively related to accuracy about all four facts. This consistent result is somewhat unexpected since the outcomes here are knowledge of structural features of the political system, which are not often subject to conspiratorial narratives. It appears that highly conspiratorial individuals are not only predisposed to endorse false or unsupported conspiratorial claims, but also less knowledgeable about the structure of political institutions and policy. Finally, populism is not a consistent predictor of accuracy, significantly predicting accuracy about only 1 out of 4 facts.

I now turn to the Misperception results, which are presented in Table 3. Starting in the top panel, we again see that demographics are consistent predictors of belief accuracy. Older, male, and college educated respondents consistently hold more accurate beliefs than younger, female, and non-college educated respondents, respectively. Turning to the information source results (middle panel), we see a familiar pattern: reading



newspapers more regularly is a consistent predictor of holding accurate perceptions, while using social media more regularly predicts lesser accuracy.

Finally, looking at the bottom panel of Table 3, we see that several predispositions are again consistent predictors of belief accuracy. In contrast to the results discussed earlier, here we see that partisanship and ideology are consistently associated with belief accuracy. Interestingly, in most models, the coefficients on Democrat and Republican are significant but oppositely signed, which suggests that members of the two parties hold divergent factual beliefs (with Democrats holding more accurate perceptions of certain facts and Republicans more accurate perceptions of others). Comparing the results from the models more carefully, we can discern a clear pattern of selective learning: both Democrats and Republicans hold more (less) accurate perceptions of facts that are congenial (dissonant) to their preferred party.8 For instance, Democrats hold more accurate beliefs about Russian interference in the 2016 election, rising global temperatures, the origins of Covid-19, and the safety and efficacy of hydroxycloroquine. In each of these cases, the factually correct answer is consistent with the factual claims of elite Democrats (e.g., Biden) or the party's preferred position (e.g., addressing climate change). By contrast, Democrats hold less accurate beliefs about deportations under the Obama versus Trump administration—the one claim on which the correct answer is uncomfortable for Democrats to acknowledge (i.e., that more illegal immigrants were deported in the first two years of the Obama compared to Trump administration).

The same pattern of selective learning is apparent among Republicans, though the results are less consistent and open to alternative explanations. Consistent with selective learning, Republicans hold less accurate beliefs about dissonant facts: Russian interference in 2016, rising global temperatures, and hydroxycloroquine. The mechanism is perhaps less definitive when we look to other facts where Republican congeniality is less clear. Republicans hold more accurate perceptions about two facts: deportations under Obama versus Trump and the consequences of vaccines. The deportations question is potentially congenial to Republicans because it refutes the conventional wisdom that Trump deported unprecedented

numbers of immigrants early in his term.<sup>9</sup> Partisan congeniality is even less straightforward in the case of the vaccines/autism item, since vaccine skepticism is prominent on both the political left and right, though for different reasons.<sup>10</sup>

The two remaining predispositions—conspiracism and populism—are also consistent predictors of belief accuracy. Unsurprisingly, individuals with high level of conspiracism hold less accurate beliefs about virtually all facts considered here (5 of 6). More surprising, populism is associated with higher belief accuracy in 5 of 6 models—including those claims where (false) conspiratorial narratives are more prominent: global temperature patterns and the origins of Covid-19. These positive associations between populism and belief accuracy hold under an alternative approach where the outcome is binary (i.e., correct answer or not).

To briefly summarize the empirical results, I find that:

- Demographics are consistent predictors of belief accuracy. Older, male, and college educated individuals hold more accurate beliefs than younger, female, and non-college educated individuals, respectively.
- Media sources are a consistent predictor of belief accuracy. More frequent use of newspapers predicts greater accuracy, while social media use predicts less accuracy.
- Two political predispositions—political interest and conspiracism—are consistent predictors of belief accuracy about the structure of the U.S. political system. Politically interested individuals are more accurate, while conspiratorial individuals are less accurate.
- A broader set of political predispositions—including partisanship, ideology, conspiracism, and populism are consistent predictors of belief accuracy when it comes to misinformation. Partisans demonstrate selective learning, which results in more (less) accurate beliefs about partisan-congenial (partisandissonant) facts. Conspiracism is negatively associated with belief accuracy. Surprisingly, populism is positively associated with belief accuracy, though this finding is worthy of further exploration.

Of course, it is important to acknowledge that the relationships observed here may differ in other countries or on different factual issues.

The U.S. political system is unique in several respects, notably its two-party presidential system and historic levels of polarization. However, recent research using data from other advanced democracies has reached conclusions largely in line with those offered here.

For instance, one recent study into the predictors of fake news belief in Spain and Portugal reaches similar conclusions, with one notable exception: the study finds that populism is consistently associated with lower—not higher—belief accuracy. Another study relying on data from nine European democracies finds that supporters of right-wing populist parties are consistently less accurate in their factual perceptions. Collectively, then, evidence suggests that the relationship between populism and belief accuracy is likely contingent on the political context and specific facts considered.

## TECHNOLOGY AND THE (MIS) INFORMED PUBLIC

Since the invention of the printing press in the 15<sup>th</sup> century, technological innovations have regularly changed the volume and quality of political information available to citizens. In the early and mid-20th century, radio and broadcast television brought a limited number of high quality political news programs to wide swaths of the population. In the late 20th century, the advent of cable news resulted in an unprecedented number of political (and non-political) programs, giving consumers for the first time a significant degree of choice over the content they choose to consume. In the 20th century, the internet transformed the political information environment into a sea of almost limitless choice. In the opinion of many scholars and commentators, this high-information, high-choice environment has contributed to a series of problems that undermine democratic functioning. In this section, I provide an overview of research in this area. I focus in particular on three commonly discussed challenges in the contemporary information environment:

- (1) media fragmentation and selective exposure,
- (2) social media and polarization, and
- (3) the reach and influence of fake news.<sup>13</sup>

# MEDIA FRAGMENTATION AND SELECTIVE EXPOSURE

Media fragmentation refers to an increase in the number of available media sources (e.g., newspapers, television or radio shows, websites, etc.). As discussed, the introduction of cable news and the internet resulted in historic levels of media fragmentation. A common concern is that fragmentation enables ideological selective exposure, which occurs when people self-select into media content that reinforces their existing preferences. According to this line of thinking, which is often called the "echo chambers" or "filter bubbles" hypothesis, citizens navigate the information environment with an eye towards reinforcing their existing beliefs. This sort of self-selection may fuel extremism and hostility towards those with opposing views. 15

While there are good reasons to expect that selective exposure may be widespread, especially during periods of polarization, there are also reasons to be more skeptical. Before considering the extent of ideological selective exposure, it is important to keep in mind that citizens first selfselect into or out of political programming. Many citizens are uninterested in politics, preferring to spend their free time consuming entertainment rather than reading or watching political news. 16 Indeed, research has found that heightened media choice allows politically uninterested citizens to opt out of political news almost entirely. The introduction of cable television, for instance, allowed politically uninterested citizens to avoid political news and instead spend more time consuming entertainment programs. At the same time, the politically interested consumed more political news (and become more knowledgeable), exacerbating pre-existing knowledge gaps across politically interested and uninterested citizens.17

More recent research has reached similar conclusions about selective exposure into partisan cable programs<sup>18</sup> and online news. <sup>19</sup> One study that directly observed the internet search behavior of a representative sample of Americans found that people spend the vast majority of their time consuming entertainment (i.e., non-political) content. <sup>20</sup> Focusing on political news consumption, most people have relatively balanced media diets, consuming information from both left- and right-leaning sources. <sup>21</sup> Importantly, however, results indicated that the most ideologically extreme respondents do engage in substantial ideological selective exposure. While this group represents a small share of the general population, they are highly engaged in politics, which could give them outsize visibility and influence in the political process.

### **SOCIAL MEDIA AND POLARIZATION**

The proliferation of social media has heightened concerns about selective exposure. Of particular concern is the possibility that social media polarizes citizens by exposing them disproportionately to pro-attitudinal content.<sup>22</sup> The empirical evidence, however, again casts doubt on this possibility. Like the studies of online news consumption discussed above, research into social media finds that many users prefer non-political content. One recent study finds that approximately one-third of U.S. Twitter users do not follow any political accounts.<sup>23</sup> The same study found that users who do engage with political content on social media do so from a relatively ideologically balanced set of accounts.

Selective exposure is more prevalent among ideologically extreme social media users; however, even among this group there is a substantial amount of cross-ideological exposure. It is worth underscoring the important differences between users who frequently seek out political content on social media and those who do not. For example, a recent study found that Americans who report frequently commenting on Facebook hold more polarized opinions and write more toxic (i.e., vitriolic) comments compared to a national sample of Americans. <sup>24</sup> Moreover, this study found that toxic comments generate more Facebook likes and promote subsequent commenters to express more toxicity.

It would appear, then, that ideological selective exposure is less common than often assumed on both online news sites and social media platforms. The question then becomes why does polarization persist if most users are exposed to an ideologically balanced set of stories? One possibility—contrary to the "echo chambers" hypothesis—is that exposure to competing views fuels polarization via a process of partisan sorting. <sup>25</sup> According to this account, exposure to opposing viewpoints activates partisan identities and encourages "sorting"—a process whereby people are strongly motivated to adopt and defend the positions of their preferred parties. More evidence is clearly needed before making definitive conclusions about the mechanism(s) driving polarization, especially in light of the evidence discussed here.

#### **FAKE NEWS AND OPINION DISTORTION**

A final concern in the contemporary information environment is the reach and potential distorting effect of fake news, defined here as false or misleading content that is presented with the intention to deceive readers. Using sophisticated web tracking methods, scholars have recently begun measuring fake news consumption directly, with one early study concluding that prominent fake news stories about the 2016 U.S. presidential election were shared millions of time online and more widely read than some mainstream stories.<sup>26</sup> While fake news consumption may appear widespread in absolute terms, it is important to consider the number and type individuals who are likely driving this consumption.

Recent studies using direct measures have concluded that fake news consumption is rare and concentrated among certain subgroups, especially older (65+) users and people for whom the fake news is politically congenial.<sup>27</sup> Returning to the 2016 U.S. election, evidence suggests that visits to fake news websites were rare and concentrated among Republicans, who presumably were already highly likely to support Trump. Two separate research teams using a similar methodology concluded that visits to pro-Trump fake news websites had no discernible impact on political attitudes or vote choice.<sup>28</sup>

Even if fake news exposure does not change attitudes or behavior among people who consume it, the presence of fake news in the environment may have broader, perhaps more deleterious effects.

Fake news may, for example, depress turnout among key constituencies, decrease trust in legitimate sources of information, crowd out substantive topics from the political agenda, or decrease citizens' sense of efficacy.<sup>29</sup> If this line of thinking is correct, then fake news poses a significant problem even if it does not change the minds of users who directly consume it.

#### **POLICY RESPONSES**

Technological innovations continue to transform the information environment in which citizens learn political facts and make political decisions. The prior section reviewed recent research into three such transformations: media fragmentation, social media, and fake news. In all three cases, research offers a more nuanced—and arguably less dire—picture of democratic functioning than conventional wisdom suggests.

One theme emerges from research in each of these three areas. The theme concerns the role of ideology in the mass public. In each of the three research areas reviewed here, ideologically extreme citizens behave differently than their less extreme peers. Specifically, ideologically extreme citizens are more likely to engage in ideological selective exposure on both news sites and social media platforms, to make toxic comments on social media platforms, and to consume and share fake news content. Similarly, recall from the data analyzed in the first section of this chapter that ideology (and partisanship) are associated with a selective pattern of learning: ideological (and partisan) citizens have less accurate beliefs about facts that are inconsistent with their predispositions. Collectively, this evidence suggests that ideological polarization-prevalent in many advanced democracies today—is likely to continue to fuel various threats to democracy.<sup>30</sup> It follows that reducing polarization is desirable not only for instrumental reasons (e.g., to improve policymaking), but also because it is likely to cultivate a healthier information environment with better informed citizens.

I close with a discussion of recent attempts by governments and the private sector to respond to some of the challenges discussed here, particularly fake news. I focus on efforts by three actors: social media platforms, policymakers, and journalists and other educators.

Social media platforms have recently adopted new policies to remove fake news and other harmful content (e.g., hate speech) and to sanction responsible users. Facebook established a putatively independent Oversight Board to supervise its content moderation practices.



Facebook, Twitter, and other platforms regularly experiment with various real-time responses to fake news ranging from warnings about factually dubious posts to expert fact checks presented alongside all posts on particular topics (e.g., WHO information alongside Covid–19 tweets). Interestingly, different platforms have demonstrated varying levels of willingness to tolerate potentially harmful content or engage in aggressive content moderation. For instance, Twitter reversed many of its content moderation policies following Elon Musk's purchase of the company. According to some observers, these sorts of policy reversals and inconsistencies across platforms highlight the need for industry-wide regulations from governments or international organizations.

While the specific threats to democracy have evolved, the challenges governments face in regulating potentially dangerous speech have not. Governments vary considerably in the relative weight they place on free speech versus regulation of potentially dangerous speech (compare, e.g., the US and Germany). A fundamental issue for government concerns transparency and objectivity. Government attempts to intervene in the marketplace of ideas will be viewed skeptically by many citizens, especially those who distrust the incumbent government or perceive the particular intervention as politically motivated. Research into public opinion on free speech issues generally finds that citizens have malleable opinions on the issue and are open to restrictions on speech if they are justified with compelling arguments.31

Finally, journalists and educators have reformed many of their practices in response to the challenges discussed in this chapter. In journalism, recent years have witnessed the institutionalization of fact-checking, with independent fact checkers now operating in over 100 countries and connected via an International Fact-Checking Network. At the same time, a large academic literature investigates best practices in fact-checking, focusing on factors such as the source, timing, and semantic structure of corrections. Educators are also investing considerable resources into boosting digital literacy and other upstream approaches focused on fake news discernment.

Technological innovation continually reshapes the political information environment. Resulting threats to democracy continue to evolve.

Policymakers and the public will be well served by data-driven policy responses that take account of findings from studies like those reviewed here.

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