



**KNIGHT
FOUNDATION**

WHY DOES JUNK NEWS SPREAD SO QUICKLY ACROSS SOCIAL MEDIA?

ALGORITHMS, ADVERTISING AND EXPOSURE IN PUBLIC LIFE

Jan. 29, 2018

SAMANTHA BRADSHAW

Samantha.bradshaw@oii.ox.ac.uk

Oxford University

PHILLIP N. HOWARD

Philip.howard@oii.ox.ac.uk

Oxford University



CONTENTS

3	INTRODUCTION
4	SOCIAL MEDIA AND DEMOCRACY
6	SOCIAL MEDIA, JUNK NEWS AND RECENT ELECTIONS
10	ALGORITHMS, ADVERTISING AND EXPOSURE: WHY DOES JUNK NEWS SPREAD SO EASILY ACROSS SOCIAL MEDIA PLATFORMS?
16	CONCLUSION
18	REFERENCES



INTRODUCTION

In 2016, Oxford Dictionaries declared “post-truth” the international word of the year. Following the divisive victory of the Brexit referendum in the United Kingdom and the equally contentious presidential election in the United States, the use of the term has skyrocketed in mainstream and social media. The dictionary defines post-truth as an “adjective relating to or denoting circumstances in which objective facts are less influential in shaping public opinion than appeals to emotion and personal belief” (Oxford Dictionaries, 2016). Casper Grathwohl, president of the Oxford Dictionaries stated that “Post-Truth as a concept has been finding a linguistic footing for some time,” mainly “fueled by the rise of social media as a news source and a growing distrust of facts offered up by the establishment” (BBC 2016).

The term “fake news” has risen to prominence in the post-truth world, and is often used as an umbrella term to describe a wide range of problematic content, from accidental misinformation to purposefully misleading and deceptive information. The term is also used discursively to describe the swath of incendiary and outrageous headlines, hate speech, hyper partisan content, and political propaganda that have partially characterized the post-truth world. At the Computational Propaganda Project, we call this kind of content “junk news,” since this more accurately defines the wide range of bad information that spreads on social media through the powerful algorithms of companies such as Google, Facebook and Twitter.

The spread of junk news is not a new phenomenon: tabloidization, false content, conspiracy theories and political propaganda all have histories. But social media has drastically changed the scale and speed at which junk news is distributed and consumed. Facebook has more than two billion active monthly users around the world. Their user base is larger than the population of India or China—larger indeed than the population of any sovereign nation in the world—and it is the second-largest self-identifying group of people in the world, only following Christianity. However, as individuals increasingly use social media to obtain information and develop their political identities, the nontransparent algorithms that run these platforms are being co-opted for the mass manipulation of public opinion, raising new and critical concerns for democracy.

This white paper explores the spread of junk news around the world. It begins by examining the relationship between social media and democracy. The second section explores what happened during elections in 2016 and 2017, and how conspiracy theories, polarizing content, and Russian-sponsored ads simultaneously flooded the social media ecosystem and microtargeted users. The third section discusses the role of algorithms, advertisements and selective exposure in filtering and delivering content. This white paper concludes with some ideas for how social media platforms should design for democracy and how governments should regulate.



SOCIAL MEDIA AND DEMOCRACY

Social media matters for democracy because it is integral to political life in the 21st century. Increasingly, people are using social media to find and consume most of their news and content, of which explicitly political news and information is a subset. According to a 26-country comparison study conducted by Oxford University's Reuters Institute for the Study of Journalism, more than half of all social media users (51%) use their preferred platform as a source of news each week, with one in 10 users (12%) saying that social media is their main source of news (Newman et al. 2016). Similarly, the 2016 Pew Journalism and Media Report found that in the United States, 70% of Reddit users, 66% of Facebook users, and 59% of Twitter users were getting their news from their respective platforms (Gottfried and Shearer 2016). Of course, the formation of political ideas is an ongoing social process that is not confined to social media (Dutton et al. 2017). Individuals who search for political information and news use a combination of traditional and digital sources, and establish their political opinions over an extended time period (Chadwick 2013). Nevertheless, social media has become an increasingly prominent source of information that users consult in the process of forming opinions.

Social media has also transformed the ways in which users relate to news and political content by empowering them to create and share. Communications scholarship has always emphasized the role of powerful gatekeepers in the production of content (White 1950; Lewin 1951; Shoemaker 1991; Metoyer-Duran 1993; Barzilai-Nahon 2008). However, where media elites used to push headlines, users now have the power to pull content that is relevant to them (Neuman 2016: 12). Internet content can flow freely from one end of the globe to the other. Anyone with a keyboard or smartphone can be a publisher, creating and sharing content and information with users despite geographic distance. Microblogging and citizen journalism, made possible by the free flow of information, have had important and positive impacts on free speech and democracy, as the traditional media and broadcasting organizations no longer hold a monopoly over news and information about politics.

This shift in “communication power” has often been the starting place for the argument that social media has been a democratizing force (Castells, 2009). New information technologies provide both capacities and constraints on political action, both in the sense that the technical standards-setting processes, and ultimately the cultures of technology use, help explain why the internet is a political technology (Bradshaw and DeNardis, 2016). With increased access to information, users are said to be better informed about news and politics, and have consequently been expected to make better political decisions. Indeed, citizen journalism has helped increase information and communication flows, and has drawn attention to some important issues



that may not necessarily have been picked up by mainstream media. For example, citizen journalism has been a critical part of the #BlackLivesMatter movement: after police officers in Ferguson, Missouri shot and killed Michael Brown, an unarmed African-American teenager, activists used social media platforms to report on subsequent incidents of racism and police brutality, and to “push back against spurious media narratives with the force of a few thousand retweets” (Stephen 2015).

Social media has often been referred to as comprising a new “digital public sphere” where like-minded individuals can connect, engage in critical debate, and collectively organize around a particular issue or movement. Some scholars have examined how social media helped transform regimes across the Middle East by allowing activists to mobilize against authoritarian governments (Margetts et al. 2015), while others have drawn attention to the Occupy Wall Street movements, where social media were used to coordinate political protests across the United States (Conover et al. 2013).

In contrast, the argument that social media have negative consequences for public life begins with evidence that most of the content shared over social media is rarely about politics, and when it is, engagement is superficial and emotionally driven, as opposed to being substantive and rational (Howard et al. 2017). Thus, citizens rarely use social media for substantive political conversations, and their engagement with political content is often anemic, uncivil or polarizing. Ultimately, public debates over social media may do little more than promote ephemeral engagement without translating to offline political impact (Christensen 2011).

Online political conversations are also relatively rare, relative to the other kinds of things that people do on the internet on a daily basis (Massanari and Howard, 2011). When online political conversations do occur, such as during major political events like candidates’ debates, social media users will use digital platforms to learn about and interact with political actors and events. However, they tend to seek out and acquire knowledge that is favorable to their preferred candidate (Boulinne 2015). Although many US-based activist organizations believe that their social media content creates stronger communities and promotes dialogue with the public, recent research suggests that this rarely translates to significant mobilization in terms of attendance at public events, consumer activism, or other forms of grassroots engagement (Guo and Saxton 2014; Lovejoy and Saxton 2012). When social media actions do have offline impacts, they are usually the same kinds of low-quality high volume actions, such as signing an online petition, that advocacy and political groups have long used to gain notoriety and news headlines for their organizations (Rotman et al. 2011).

Through 2016 and 2017, there has been a growing worry that bad information is spreading over social media like wildfire. Many critics have expressed concern that junk news stories have misinformed voters about candidates, and are distracting their attention away from important policy issues. What actually happened on social media during the major elections in 2016 and 2017—were users actually sharing bad information?



SOCIAL MEDIA, JUNK NEWS AND RECENT ELECTIONS

In October 2016, during the U.S. presidential election, the FBI announced that it was reopening investigations into Hilary Clinton's use of a private email server. Shortly after, a Twitter handle named @DavidGoldbergNY tweeted that new emails “point to a pedophile ring and @HilaryClinton is at the center.” According to The Washington Post, this tweet was shared more than 6,000 times, and was eventually picked up by InfoWars' Alex Jones, who posted a segment on YouTube where he repeatedly insisted that Hilary Clinton was involved in a pedophile ring with her campaign manager John Podesta (Fisher, Cox, and Herman 2016).¹ A few days later, WikiLeaks dumped more than 20,000 hacked emails from John Podesta. Users on the internet messaging board 8chan discovered that John Podesta frequently dined at a Washington pizzeria called Comet Ping Pong, and began imagining wild conspiracies about why he spent so much time there. From this, the #Pizzagate conspiracy theory was born, as Jones, trolls and the credulous circulated an absurd and unfounded rumor that Hilary Clinton and John Podesta operated a child sex ring out of the basement of Comet Ping Pong.

The #Pizzagate narrative spread rapidly over social media throughout October and November of 2016, and was picked up and amplified by a series of counterfeit news websites that had been designed to look like they belonged to established mainstream news outlets. From here, the stories spread on Facebook and Twitter, with links gaining “hundreds of thousands of shares, reactions and comments” (Marwick and Lewis 2017). Although many people immediately dismissed #Pizzagate as a baseless conspiracy theory, the scale at which this rumor spread on social media had real world consequences when Edgar Maddison Welch drove from North Carolina to the pizzeria and fired three shots with his AR-15 rifle. He had convinced himself that his actions were necessary to save the children that he believed were being held captive as sex slaves. No one was hurt, and Welch was recently sentenced to 48 months in prison (Hauck 2017). Despite the widespread coverage and debunking of #Pizzagate, many individuals still push narratives to defend the conspiracy claiming that Welch was an actor who was paid to shoot up the place and pretend to be arrested.

#Pizzagate is only one example of the many junk news stories that went viral throughout 2016 and 2017. Lies, conspiracy theories and alternate realities have flowed freely across the social media ecosystem. Users and bots on

¹ The tweet by @DavidGoldbergNY and the YouTube video uploaded by InfoWars have since been removed by the companies.



Facebook, Twitter and YouTube spread junk news across the internet by creating and sharing posts, pages, groups, hashtags, videos and channels. In the United States, some of the most widely shared stories about politics were junk news stories (Silverman 2016). There were many examples of fake news websites counterfeiting genuine websites, such as The New York Times, by copying their design or using a similar domain name. For example, one fake news website, the Denver Guardian, was designed to imitate the legitimate Michigan newspaper The Denver Post. It was operated by an individual in California who ran multiple counterfeit websites to earn a profit from clicks and shares (Lubbers 2016).

Michigan was one of the swing states in the 2016 election. It was therefore important that Michigan-based users receive correct and relevant content about the candidates and their positions on various policy issues. However Michigan was among the states with the worst online information environments leading up to election day. Our preliminary study on Michigan found that junk news was being shared just as widely as professionally produced news, and that junk news stories outperformed high-quality news on the day before the election (Howard et al. 2017a). However, Michigan was not the only U.S. state where there were high levels of junk information being shared. Across the United States, junk news was shared at a 1:1 ratio. Even more disturbingly, 12 of the 16 swing states (as defined by the non partisan National Constitution Centre) had higher proportions of junk news circulating than the national average and most uncontested states (Howard et al. 2017c).

Coordinated efforts to distribute “fake news” stories over the internet and social media contributed to the spread of cynicism, increased polarization along identity and ideological lines, and successfully influenced the broader media agenda (Benkler et al. 2017). In the months leading up to the US election, prominent media organizations such as The Washington Post and The New York Times covered groundless conspiracy theories about Hilary Clinton more than Trump’s empirical ties to Russia or his admitted sexual assaults (Marwick and Lewis 2017).

Although junk news is often linked to the 2016 U.S. election, the spread of bad information on social media during important political events is a global phenomenon, causing concern for democracies around the world. Table 1 describes the spread of junk news during elections in the United States, Germany, France and the United Kingdom. For each country, we evaluated the kinds of content that were being shared on social media in the days leading up to the respective country’s election. We collected tweets based on whether they contained hashtags that were related to politics and the election. In the United States, hashtag examples included: #Trump, #Clinton, #StrongerTogether #Elections2016, #DrainTheSwamp, #NeverHillary, and #NeverTrump. From this sample of tweets, we then looked at those that contained URLs to outside sources of information, and categorized them based on a grounded typology of junk news (Howard et al. 2017c). Professionally produced news included content from major and minor news brands that displayed the qualities of professional journalism, with fact-checking and credible production standards. These sources provided clear



information about real authors, editors, publishers and owners, and clearly distinguished fact-checked news and analysis from opinion and commentary.

In contrast, junk news involved various forms of propaganda and ideologically extreme, hyperpartisan, or conspiratorial political news and information. Much of the content that was labelled as junk news involved deliberately false reporting, or did not distinguish between fact-checked information and commentary. Junk content involved attention-grabbing techniques, lots of pictures, moving images, excessive capitalization, ad hominem attacks, emotionally charged words and pictures, unfounded generalizations, and other logical fallacies. We also coded for other information categories, including citizen journalism, political humor or entertainment, and official party content (see Howard et al. 2017c).

Table 1: The Spread of Junk News During Elections in 2016 and 2017

Country	Details	Ratio of Professionally-Produced Content to Junk News, by Number of Links
USA	Sample taken between November 1-11, 2016, totaling 1,275,430 tweets.	1:1
Germany	Sample taken before voting, from September 1-10, 2017, totaling 149,573 tweets.	4.4:1
France	Sample taken before voting, from April 27-29, 2017, totaling 76,063 tweets.	6.5:1
United Kingdom	Sample taken before voting, May 27-June 2, 2017, totaling 27,059 tweets.	4.7:1

Source: Authors' calculations, based on results from: Desigaud et al 2017, Gallacher et al. 2017, Howard et al. 2017c, and Neudert et al. 2017,

One way that junk news stories spread across social media was through the use of "political bots." Political bots are "algorithms that operate over social media, written to learn from and mimic real people to manipulate public opinion across a diverse range of social media and device networks" (Woolley and Howard 2016). These bots are active on several social media platforms, including Twitter and Facebook, and are often designed to interact with users, boost the number of followers or retweets of a particular hashtag, person, or account, attack political opponents, or drown out activist conversations. Political bots played a large role in distorting the conversation during the 2016 election in the United States, accounting for approximately one-fifth of the entire volume of tweets during this period (Bessi and Ferrara 2016).



There is also growing evidence that Russia spread junk content during the 2016 US election (Ludes and Jacobson, 2017). Academic journalistic, and government investigations into the election uncovered “a micro propaganda machine” creating and sharing vast amounts of Russian-sponsored disinformation across these platforms (Albright 2016). Just six sites, belatedly publicized as being Russian-sponsored, had their content shared more than 340 million times, reaching approximately 19 million users (Timburg 2017). In September 2017, Facebook confirmed that it had sold 3,000 ads to Russian agents working out of the Internet Research Agency – Russia’s so-called troll farm. The ads promoted 470 Russian-linked Facebook accounts and pages, which have now been turned over to Congress as part of its ongoing investigation into Russian interference in the US election (Solon, 2017). These fake accounts posed as “second Amendment absolutists, LGBT rights activists, American Muslim community activists, American anti-Muslim activists, Texas and California secessionists, pro-Trump Floridians, and Jill Stein supporters” with the apparent goal of further dividing and polarizing American voters (Weiss, 2017).

While much of the media attention has focused on Russia’s interference with the US election, this is just a symptom of a much bigger problem: social media, which was often praised for its democratizing power, is now undermining democracy itself.



ALGORITHMS, ADVERTISING AND EXPOSURE:

WHY DOES JUNK NEWS SPREAD SO EASILY ACROSS SOCIAL MEDIA PLATFORMS?

Algorithms

Search algorithms are foundational to our experience of the internet today. Without them, we would have to sort through massive amounts of information. The fact that algorithms prioritize certain content is not a revelation. For quite some time individuals and businesses have tried to “game” these systems for marketing purposes. For example, search engine optimizers’ entire business model is built around boosting a company’s rank in online search results. What is new is that these business and marketing techniques are now being applied to politics.

Social media platforms rely on algorithms to determine how news and content are disseminated and consumed. The information that is delivered through Facebook’s news feed, Google’s search, and Twitter’s trending topics is selected and prioritized by complex algorithms that have been coded to sort, filter and deliver content in a manner that is designed to maximize users’ engagement with the content and time spent on the platform. Algorithms organize the vast amounts of information that is produced and shared on social media platforms by personalizing content around users’ interests and around the interests of people who have similar online habits and profiles (Fowler 2016). However, the ways in which algorithms select and prioritize information have been heavily criticized: instead of promoting the free flow and transparent exchange of ideas that is necessary for a healthy democracy, the personalization of content has created filter bubbles that limit information flows and perpetuate bias.

Most of the filtering of information that takes place on social media is not the product of the conscious choices of human users. Rather, what we see on our social media feeds and in our Google search results is the product of calculations made by powerful algorithms and machine learning models. These bits of code make decisions for us and about us by personalizing content and tailoring search results to reflect our individual interests, past behaviors, and even geographic location (Gillespie 2012; Pasquale



2015). Algorithmic content curation has important consequences for how individuals find news and other important political information that is necessary for a healthy democracy. Instead of human editors selecting important sources of news and information for public consumption, complex algorithmic code determines what information to deliver or exclude. Popularity and the degree to which information provokes outrage, confirmation bias or engagement are increasingly important in driving its spread. The speed and scale at which content “goes viral” grows exponentially, regardless of whether or not the information it contains is true (Nahon and Hemsley 2013). Although the internet has provided more opportunities to access information, algorithms have made it harder for individuals to find information from critical or diverse viewpoints.

Advertising

Social media platforms are built on collecting user data and selling it to companies to enable them to better understand populations of users, while offering companies the ability to craft and deliver microtargeted messages to those populations. This is why social media accounts are “free” to use: individuals who sign up for their services pay with their personal information.

This advertising model contributes to the spread of junk news in two important ways. First, the advertising model itself rewards viral content, which has given rise to clickbait. Clickbait is content designed to attract attention—often by stimulating outrage, curiosity, or both—in order to encourage visitors to click on a link to a webpage. In some cases, the link itself may lead directly to an advertisement, or even to malware. In other cases, the link leads to a website where paid advertisements are featured; the website owner then earns income based on users’ interactions with the embedded advertisements. As more consumers have turned to online sources for their news content, traditional print media has become increasingly dependent on online ad revenue to stay afloat. This has put transformative pressure on producers of news content to tell stories in a way that is click-worthy, when competing for attention alongside 20-second recipes, funny cat videos, memes, and other forms of attention grabbing content. Click-bait is thus big business and is transforming the stories we tell and the ways in which we tell them.

The economics of clickbait help explain why so many stories around the events of 2016 and 2017 were designed to provoke particular emotional responses that increase the likelihood, intensity and duration of engagement with the content. In practice, one effective way to do this has been to play to people’s existing biases and sense of outrage when their identity or values are perceived to be threatened. This has directly fueled the rise of exaggerated, inaccurate, misleading and polarizing content. The types of stories being told – and the way in which they’re told – is being determined by the hope that they’ll be widely shared and generate advertising revenue. In Macedonia, for example, a group of teenagers created over 140 websites dealing with U.S. politics. In order to maximize their advertising revenue, they



sought to maximize engagement by publishing and recycling outrageous and curiosity-inducing pro-Trump and anti-Clinton content. The teens' fake news machine was so successful at drawing in new visitors that it was almost a license to print money. One of the Macedonian teenagers made US\$16,000 from two pro-Trump websites; the average monthly salary in Macedonia is just US\$371 (Subramanian, 2017).

The second way that social media's data-based advertising model contributes to the spread of junk news is by empowering various actors to microtarget potential voters, with very little transparency or accountability around who sponsored the advertisements or why. Instead of encouraging users to go to a certain restaurant or buy a particular brand, political campaigns and foreign operatives have used social media advertising to target voters with strategic, manipulative messages. One way that personal tracking and targeted advertising are made possible is by a piece of code called a "cookie." Cookies track personal information about users to help websites to identify and remember them. For example, when someone visits Amazon.com, the website installs a cookie on the user's browser, assigning them a unique number. This allows Amazon to remember what is in a user's shopping cart as they navigate from page to page, and to make recommendations based on the links they click on (Schneier 2015). Originally, cookies were only intended to track users' activities on the websites that installed them. Today, however, cookies are being used to constantly track users' navigation and activities across the internet. They have also been used to help fine-tune political targeting and advertising techniques. One study found that fake news websites around the 2016 U.S. Presidential elections were not only spreading clickbait misinformation and lies, but were also using cookies to track visitors, and sharing this information with third parties (Cadwalladr 2016).

Of course, targeted campaigning has always been a part of the electoral process. For example, before the internet, political communications targeted potential voters based on information such as demographics or the programs they watched on TV. However, these strategies were often slow, inaccurate, and the amount of detail that campaigns could glean about an individual voter was quite limited. Today, the internet platforms that we interact with on a daily basis collect so much data about their users that political campaigners can gather very detailed information about individual potential voters, and target them with a versatile arsenal of political communication and propaganda.

In the 2016 election, the Trump campaign invested heavily in communicating via digital platforms like Facebook (Funk 2016). The data firm Cambridge Analytica was hired to support these efforts. Cambridge Analytica has built its business by using "free" Facebook quizzes to develop psychological profiles of millions of users. In the U.S., Cambridge Analytica has created psychological profiles of more than 230 million American adults (Cadwalladr 2016). When respondents answer Facebook quizzes, third-party data sharing agreements between Facebook and Cambridge Analytica allow them to examine the scores, as well as the respondent's real names and



Facebook profiles (Funk 2016). This firm claims to have as many as 3,000 to 5,000 unique data points in each of its profiles, including users' age, income, hobbies, sexual orientation, religious beliefs, stance on abortion and gun ownership, debt level, gambling habits, and relationship with alcohol (Funk 2016).

The Trump campaign and Cambridge Analytica used this incredibly detailed database to deliver huge numbers of so-called “dark posts” to potential voters. Dark posts “are newsfeed messages that can be seen by no one aside from the users being targeted” (Funk 2016). Instead of running the same television ad to a large group of individual voters, campaigners can now send a single, targeted advertisement to one user, based on their policy preferences, values and beliefs. Journalists reported that the Trump campaign used 40,000 to 50,000 different variants of ads every day, monitored engagement and interactions, and adapted based on people's responses (Cadwaller 2016). Many of these were dark posts, often unattributed to any particular candidate or campaign, that were designed to suppress voting by certain groups of individuals. For example, some dark posts identified during the 2016 U.S. election focused on suppressing voting among Democrats, including: “idealistic white liberals, young women, and African Americans” (Green and Issenberg 2016). Overall, the way in which advertising takes place on social media can exacerbate not only the scale of fake news and misinformation, but enhance its effectiveness by reaching audiences with messages that appeal to their psychoanalytical profiles based on a user's online actions.

Exposure

While algorithms and advertisements filter and deliver information, users also select what they want to see or ignore. Scholars have emphasized the important role that individuals play in exercising their information preferences on the internet (Sunstein 2009). Online friend networks often perform a social filtering of content, which diminishes the diversity of information that users are exposed to. Academic studies have demonstrated that people are more likely to share information with their social networks that conforms to their pre-existing beliefs (Quattrociocchi et al. 2016), deepening ideological differences between individuals and groups (Flaxman, Goel and Rao 2016). As a result, voters do not get a representative, balanced or accurate selection of news and information during an election, nor is the distribution of important information randomly distributed across a voting population. Research on “selective exposure” shows that people select traditional media and broadcasting sources that they wish to be exposed to, and that they choose to associate with groups of voters, community associations, political parties and particular candidates. However, it is not clear that selective exposure works quite the same way over the internet. Studies of selective exposure on social media have not reached the same level of consensus that researchers working on broadcast media have reached (Chaffee and Miyo, 1983; Bennett and Iyengar 2008).



The selective exposure theory argues that most voters prefer messages that support rather than conflict with their beliefs and worldview, because these kinds of messages increase voters' confidence that they are thinking, feeling and acting in a correct or acceptable manner, that they have made good decisions about information quality in the past, and that they need not consider radical shifts in political affiliation. Effectively, selective exposure helps explain why there are very few mass defections from political parties or experienced political candidates. As early as 1964, Lazarsfeld, Berelson and Gaudet studied how voters get their political news and information, and found that people tend to selectively expose themselves to their preferred candidate's messages (1964). Since then, almost every study of the subject has affirmed some selective exposure effects.

What might explain why people selectively expose themselves to political news and information? The partisanship explanation suggests that people pay attention to political content that fits an ideological package that they already subscribe to. If they've already expressed a preference for a particular candidate, they will select messages that strengthen, not weaken, that preference (Chaffee and Miyo, 1983). Effectively this means that voters tend not to change political parties or favored candidates because they are unlikely to voluntarily or proactively acquire radically new information that challenges their perspectives and undermines their preferences. Obviously, the more interested a voter is in a subject, the greater the likelihood of such selective attention (Berelson and Steiner 1964).

A second explanation for selective exposure focuses on one's "schemata" — cognitive representations of generic concepts with consistent attributes that can be applied to new relationships and new kinds of information (Fisk and Kinder 1983). Whereas the partisanship explanation emphasizes deference to already preferred political figures and groups, the schemata explanation emphasizes that we take cognitive short cuts and depend on ready-made prior knowledge (Fisk, Lau and Smith, 1990; Ossoff and Dalto, 1996). According to this explanation, information itself has a kind of gatekeeping role, such that we rely on the things we already know and believe rather than learn the science and facts that are relevant to each new policy issue.

A third possibility is that we rely on selective exposure because we don't want to face the cognitive dissonance of exposure to radically new and challenging information (Cotton 1980; Cotton 1985; Chaffee and Miyo 1983). There is minimal research into this explanation. It is plausible, however, because investigations of context collapse have revealed that people have very real, jarring experiences when presented with unexpected information and social anecdotes over digital media (Davis and Jurgenson, 2014).

One important piece of the early scholarship on selective exposure may help us to understand how young people explore political content on social media. When Chaffee and Miyo (1983) interviewed 501 pairs of adolescents and their parents during the 1980 U.S. Presidential campaign, they confirmed that partisan predispositions motivated selective exposure that strengthened those predispositions. However, the researchers were surprised to find that



this tendency was strongest among adolescents. Chaffee and Miyo explained this by concluding that, “Being comparatively new to politics, the adolescents respond more to the campaign, and they are considerably less likely than their parents to pay attention to the campaign communication of the candidate who is running in opposition to the one they favor” (1983: 32). It’s possible that this conclusion holds for young social media users as well.

Social media can certainly facilitate selective exposure, but likely through social endorsements rather than simply partisan frames. On Facebook, people share substantially less news from sources aligned with an ideology they don’t subscribe to. People also tend to connect with “friends” who share their views. In a study by Bakshy et al. (2015), algorithmic ranking showed users 15% less cross-cutting content in their news feeds than they might have otherwise been exposed to. This led to them clicking through to 70% less cross-cutting content than they might have otherwise. Within the domain of political news encountered in social media, selective exposure appears to drive users’ attention. However, underlying this is the social endorsement that is communicated through the act of engagement: social media users don’t pay attention simply because a piece of political news is from a credible source or generated by a political party. Instead, they pay attention in large part because someone in their social network signaled that the content is important by sharing or engaging with it (Bakshy et al. 2015; Messing and Westwood 2014).



CONCLUSION

Social media platforms have had different roles in the narrative of modern political activism. It is difficult to tell the story of the Arab Spring without acknowledging the important role platforms like Facebook and Twitter had in helping cohorts of young people across North Africa and the Middle East organize to express their grievances. Democracy advocates—many of whom had never known politics without dictatorship—used social media to learn about public life in countries with freedom of expression, traded digital images of regime abuse that incited street protests, and then used social media to coordinate action across international borders (Howard and Hussain, 2012). But towards the end of the Arab Spring, or perhaps what brought about its end, political elites in authoritarian regimes started learning from democracy advocates. Security services in these tough governments used social media to entrap activists, plant false stories, and surveil their critics. A cynic might say it was only a matter of time before those authoritarian regimes started using the tricks for undermining their internal opponents to undermining other regimes.

Social media has evolved. Once heralded as infrastructure for democratic deliberation, civic engagement and political expression, it has become a tool for mass manipulation, vote suppression, and the propagation of false or misleading information. Several kinds of political actors, from authoritarian governments to homegrown extremist and established political parties, have effectively used social media to choke off important political conversations, muddy issues, exacerbate divisions, and block consensus on how to respond to a range of public crises.

Why does junk news spread so effectively across social media? We answer this question by demonstrating (1) that the algorithmic distribution systems of Facebook and Twitter ensure some directed delivery of content, (2) that purposefully crafted advertising and search engine optimization results in compelling content, and (3) that user habits and self-structured networks create receptive audiences.

There are many kinds of solutions being discussed by civil society groups, politicians, and the social media companies themselves, but it will be challenging to design and regulate social media in a way that prevents election interference but does not stifle political speech. Meeting this challenge will likely require investment from the technology firms that manage the platforms, diligent attention from civil society actors, and some new but gentle forms of public policy oversight. Given the stakes, the time for industry self-regulation has passed. However, governments should also heed caution when adopting regulatory interventions for controlling the spread of junk news online. There has always been a tension between free speech and suppressing content that is harmful to society, but regulation does not happen in a technical vacuum, and decisions made by government actors



can have long and lasting consequences on the openness and freedom of the internet.



REFERENCES

- Albright J. 2016. "The #Election2016 Micro-Propaganda Machine." Medium, 18 November. Available: <https://medium.com/@d1gi/the-election2016-micro-propaganda-machine-383449cc1fba#.l7jpenqif>
- Bakshy E., S. Messing and L. A. Adamic. 2015. "Exposure to Ideologically Diverse News and Opinions on Facebook." *Science* 348 (6239):1130–32.
- Barzilai-Nahon, K. 2008. "Toward a Theory of Network Gatekeeping: A Framework for Exploring Information Control." *Journal of the American Society for Information Science and Technology* 59 (9):1493–1512.
- BBC. 2017. "'Woke' and 'Post-Truth' Added to Oxford English Dictionary." BBC June 27, 2017. <http://www.bbc.co.uk/newsbeat/article/40414375/woke-and-post-truth-added-to-oxford-english-dictionary>.
- Benkler, Y., R. Faris, H. Roberts, and E. Zuckerman. 2017. "Study: Breitbart-Led Right-Wing Media Ecosystem Altered Broader Media Agenda." *Columbia Journalism Review*, March. <https://www.cjr.org/analysis/breitbart-media-trump-harvard-study.php>.
- Bennett, W. L., and S. Iyengar. 2008. "A New Era of Minimal Effects? The Changing Foundations of Political Communication." *Journal of Communication* 58 (4):707–31.
- Berelson, B. and G.A. Steiner. 1964. *Human Behavior: An Inventory of Scientific Findings*. Oxford, England: Harcourt, Brace & World.
- Bessi, A., and E. Ferrara. 2016. "Social Bots Distort the 2016 U.S. Presidential Election Online Discussion." *First Monday* 21 (11).
- Boulianne, S. 2015. "Social Media Use and Participation: A Meta-Analysis of Current Research." *Information, Communication & Society* 18 (5): 524–38.
- Bradshaw, S. and L. Denardis. 2016. "The Politicization of the Internet's Domain Name System." *New Media & Society*, 20 (1): 332-350.
- Cadwalladr C. 2016. "Google, Democracy and the Truth About Internet Search." *The Guardian*, 4 December. <https://www.theguardian.com/technology/2016/dec/04/google-democracy-truth-internet-search-facebook>.
- Castells, M. 2009. *Communication Power*. Oxford: Oxford University Press.
- Chadwick, A. 2013. *The Hybrid Media System: Politics and Power*. Oxford: Oxford University Press.



- Chaffee, S. H., and Y. Miyo. 1983. "Selective Exposure and the Reinforcement Hypothesis: An Intergenerational Panel Study of the 1980 Presidential Election." *Communication Research* 10 (1):3–36.
- Christensen, H. S. 2011. "Political Activities on the Internet: Slacktivism or Political Participation by Other Means?" *First Monday* 16 (2).
- Conover, M.D., E. Ferrara, F. Menczer, and A. Flammini. 2013. "The Digital Evolution of Occupy Wall Street." *PLOS ONE* 8 (5): e64679.
- Davis, J L., and N. Jurgenson. 2014. "Context Collapse: Theorizing Context Collusions and Collisions." *Information, Communication & Society* 17 (4):476–85.
- Desiguad, C., P. N. Howard, B. Kollanyi, and S. Bradshaw. 2017. "What Are French Voters Sharing Over Twitter Between the Two Election Rounds." 2017. <http://comprop.oii.ox.ac.uk/wp-content/uploads/sites/89/2017/05/What-Are-French-Voters-Sharing-Over-Twitter-Between-the-Two-Rounds-v7.pdf>.
- Dutton, W.H., B.C. Reisdorf, E. Dubois, and G. Blank. 2017. "Search and Politics: The Uses and Impacts of Search in Britain, France, Germany, Italy, Poland, Spain, and the United States." *Social Science Research Network*. <https://papers.ssrn.com/abstract=2960697>.
- Fisher, M, J. Woodrow-Cox, and P. Hermann. 2016. "Pizzagate: From Rumor, to Hashtag, to Gunfire in D.C." *Washington Post*, December 6, 2016. https://www.washingtonpost.com/local/pizzagate-from-rumor-to-hashtag-to-gunfire-in-dc/2016/12/06/4c7def50-bbd4-11e6-94ac-3d324840106c_story.html.
- Fiske, S. T, D.R. Kinder, and W.M. Larter. 1983. "The Novice and the Expert: Knowledge-Based Strategies in Political Cognition." *Journal of Experimental Social Psychology* 19 (4):381–400.
- Fiske, S.T., R.R. Lau, and R. A. Smith. 1990. "On the Varieties and Utilities of Political Expertise." *Social Cognition* 8 (1):31–48.
- Flaxman, S., S. Goel, and J.M. Rao. 2016. "Filter Bubbles, Echo Chambers, and Online News Consumption." *Public Opinion Quarterly*. 80 (Special Issue): 298–320.
- Fowler GA. 2016. What if Facebook Gave Us an Opposing-Viewpoints button? *Wall Street Journal*, 18 May. <http://www.wsj.com/articles/what-if-facebook-gave-us-an-opposing-viewpoints-button-1463573101>
- Funk M. 2016. The Secret Agenda of a Facebook Quiz. *New York Times*, 19 November. Available: <http://www.nytimes.com/2016/11/20/opinion/the-secret-agenda-of-a-facebook-quiz.html>



- Gallacher J., M. Kaminska, B. Kollanyi, and P.N. Howard. 2017. Junk News and Bots During the 2017 UK General Election: What are UK Voters Sharing Over Twitter? COMPROP Data Memo. <http://comprop.oii.ox.ac.uk/wp-content/uploads/sites/89/2017/06/Junk-News-and-Bots-during-the-2017-UK-General-Election.pdf>
- Gillespie, T. 2012. "The Relevance of Algorithms." In *Media Technologies: Essays on Communication, Materiality and Society*. Cambridge: MIT Press.
- Gottfried, Jeffrey, and Elisa Shearer. 2016. "News Use Across Social Media Platforms 2016." Pew Research Center's Journalism Project. <http://www.journalism.org/2016/05/26/news-use-across-social-media-platforms-2016/>.
- Green J and Issenberg S. 2016. Inside the Trump Bunker, With Days To Go. Bloomberg Business Week, October 27. Available: <https://www.bloomberg.com/news/articles/2016-10-27/inside-the-trump-bunker-with-12-days-to-go>
- Guo, C., and G. D. Saxton. 2014. "Tweeting Social Change: How Social Media Are Changing Nonprofit Advocacy." *Nonprofit and Voluntary Sector Quarterly* 43 (1):57-79.
- Hauck, G. 2017. "'Pizzagate' Shooter Sentenced to 4 Years in Prison." CNN. <http://www.cnn.com/2017/06/22/politics/pizzagate-sentencing/index.html>.
- Howard, P.N., G. Bolsover, B. Kollanyi, S. Bradshaw, and L.M. Neudert. 2017a. "Junk News and Bots during the U.S. Election: What Were Michigan Voters Sharing Over Twitter?" COMPROP Data Memo. <http://comprop.oii.ox.ac.uk/wp-content/uploads/sites/89/2017/03/What-Were-Michigan-Voters-Sharing-Over-Twitter-v2.pdf>.
- Howard, P.N., S. Savage, C. Flores-Saviaga, C. Toxtli, and A. Monroy-Hernandez. 2017b. "Social Media, Civic Engagement, and the Slacktivism Hypothesis: Lessons From Mexico's 'El Bronco'" *Columbia SIPA Journal of International Affairs*. <https://jia.sipa.columbia.edu/social-media-civic-engagement-and-slacktivism>.
- Howard, P.N., B. Kollanyi, S. Bradshaw and L.M. Neudert. 2017c. "Social Media, News and Political Information During the US Election: Was Polarizing Content Concentrated in Swing States?" COMPROP Data Memo. <http://comprop.oii.ox.ac.uk/wp-content/uploads/sites/89/2017/09/Polarizing-Content-and-Swing-States.pdf>.
- Hussain M. and P.N. Howard. 2011. "Democracies Fourth Wave? Digital Media and the Arab Spring". Oxford: Oxford University Press.
- Lewin, K. 1951. *Field Theory in Social Science: Selected Theoretical Papers*. New York: Harper.



- Lovejoy, K., and G. D. Saxton. 2012. "Information, Community, and Action: How Nonprofit Organizations Use Social Media*." *Journal of Computer-Mediated Communication* 17 (3):337–53.
- Lubbers, E. 2016. "The Man Behind Denver Guardian (and Many Other Fake News Websites) Is a Registered Democrat from California." *The Denver Post*, November 23, 2016. <http://www.denverpost.com/2016/11/23/the-man-behind-denver-guardian/>.
- Ludes, J., and M. Jacobson. 2017. "Shatter the House of Mirrors: A Conference Report on Russian Influence Operations." Pell Centre. <http://pellcenter.org/wp-content/uploads/2017/09/Shatter-the-House-of-Mirrors-FINAL-WEB.pdf>.
- Margetts et al. (2015) *Political Turbulence: How Social Media Shapes Collective Action* Princeton: Princeton University Press.
- Marwick, A., and R. Lewis. 2017. "Media Manipulation and Disinformation Online." *Data and Society*. https://datasociety.net/pubs/oh/DataAndSociety_MediaManipulationAndDisinformationOnline.pdf.
- Massanari, A. L., and P. N. Howard. 2011. "Information Technologies and Omnivorous News Diets over Three U.S. Presidential Elections." *Journal of Information Technology & Politics* 8 (2):177–98.
- Messing, S., and S. J. Westwood. 2014. "Selective Exposure in the Age of Social Media: Endorsements Trump Partisan Source Affiliation When Selecting News Online." *Communication Research* 41 (8):1042–63.
- Metoyer-Duran, C. 1993. "Information Gatekeepers." *Annual Review of Information Science and Technology (ARIST)* 28:111–50.
- Neudert, L.M., P.N. Howard, and B. Kollanyi. 2017. "What-Were-German-Voters-Sharing-Over-Twitter-v6-1.pdf." COMPROP Data Memo. http://comprop.oii.ox.ac.uk/wp-content/uploads/sites/89/2017/09/ComProp_GermanElections_Sep2017v5.pdf.
- Neuman, R. W. 2016. *The Digital Difference: Media Technology and the Theory of Communication Effects*. Cambridge: MIT Press.
- Newman, N., R. Fletcher, D. A. Levy, and K. Nielsen. 2016. "Reuters Institute Digital News Report 2016." <http://reutersinstitute.politics.ox.ac.uk/sites/default/files/Digital-News-Report-2016.pdf>.
- Ossoff, E. P., and C. A. Dalto. 1996. "Media Use and Political Commitment: The 1992 U.S. Presidential Election." *Current Psychology* 15 (2): 128–36.
- Oxford Dictionaries. 2016. "Word of the Year 2016 Is..." Oxford Dictionaries. <https://en.oxforddictionaries.com/word-of-the-year/word-of-the-year-2016>.



- Pasquale F. 2015. *The Black Box Society: The Secret Algorithms that Control Money and Information*. Cambridge: MIT Press
- Quattrociocchi, W., A. Scala, and C. R. Sunstein. 2016. "Echo Chambers on Facebook." Social Science Research Network. <https://papers.ssrn.com/abstract=2795110>.
- Rotman, D., J. Preece, S. Vieweg, B. Shneiderman, S. Yardi, P. Pirolli, Ed H. Chi, and Tom Glaisyer. 2011. "From Slacktivism to Activism: Participatory Culture in the Age of Social Media." In *Extended Abstracts on Human Factors in Computing Systems*, 819–22. http://yardi.people.si.umich.edu/pubs/Yardi_CHI11_SIG.pdf.
- Schneier B. 2015. *Data and Goliath*. W.W. Norton & Company: New York
- Shoemaker, P. J. 1991. *Gatekeeping*. Newbury Park: Sage.
- Silverman C. 2016. "This Analysis Shows How Fake Election News Stories Outperformed Real News on Facebook." BuzzFeed News, 16 November. https://www.buzzfeed.com/craigsilverman/viral-fake-election-news-outperformed-real-news-on-facebook?utm_term=.tgRKv5Aad#.ou30Yx38n
- Solon, Olivia. 2017. "Facebook Says Likely Russia-Based Group Paid for Political Ads during US Election." The Guardian. <https://www.theguardian.com/technology/2017/sep/06/facebook-political-ads-russia-us-election-trump-clinton>.
- Stephen, Bijan. 2015. "How Black Lives Matter Uses Social Media to Fight the Power | WIRED." Wired Magazine, October 2015. <https://www.wired.com/2015/10/how-black-lives-matter-uses-social-media-to-fight-the-power/>.
- Subramanian, S. 2017. "Meet the Macedonian Teens Who Mastered Fake News and Corrupted the US Election." WIRED, 2017. <https://www.wired.com/2017/02/veles-macedonia-fake-news/>.
- Sunstein, C. R. 2009. *Republic.com 2.0*. Princeton, N.J.: Princeton University Press.
- Timberg, C. 2017. "Russian Propaganda May Have Been Shared Hundreds of Millions of Times, New Research Says." Washington Post, October 5, 2017. <https://www.washingtonpost.com/news/the-switch/wp/2017/10/05/russian-propaganda-may-have-been-shared-hundreds-of-millions-of-times-new-research-says/>.



Weiss, Michael. 2017. "The Making of a Russian Disinformation Campaign: What It Takes." CNN, October 11, 2017. <http://www.cnn.com/2017/10/11/opinions/the-making-of-a-russian-disinformation-campaign-opinion-weiss/index.html>.

White, David Manning. 1950. "The 'Gate Keeper' A Case Study in the Selection of News." *Journalism Quarterly* 27 (4):383–90.

Woolley, S C., and P. N. Howard. 2016. "Automation, Algorithms, and Politics| Political Communication, Computational Propaganda, and Autonomous Agents — Introduction." *International Journal of Communication* 10 (0):9.



JOHN S. AND JAMES L. KNIGHT FOUNDATION
Suite 3300
200 S. Biscayne Blvd.
Miami, FL 33131-2349
Telephone: (305) 908-2600