The Economics of "Fake News"

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Today, sophisticated algorithms have already succeeded in generating fake research paper submissions that were accepted to reputable conferences.[1] At the same time, news organizations have begun using artificial intelligence (AI) systems to generate legitimate articles on routine topics such as sports scores. Together, these developments suggest that even more advanced algorithms will soon generate "believable" false information automatically.

False information basically comes in two forms: *misinformation* and *disinformation*. Disinformation is false information that is spread to deceive. Misinformation is simply incorrect information, for example, "I was misinformed about when today's meeting was supposed to start, but I know it was not deliberate." Here, we address "fake news," a type of disinformation that is currently generated manually to our best knowledge.

About Fake News

In recent years, news delivered through social media has been a focus of concern. One study suggests that 62 percent of US adults get their news from social media,[2] and more than 40 percent of them do so on Facebook.[3]

Estimates suggest that in the final three months of the 2016 US presidential campaign, the top-performing fake election news stories on Facebook attracted more views than top stories from major news outlets such as the *New York Times*, *Washington Post*, *Huffington Post*, or NBC News. During that time, 20 top-performing false election stories from fake news sites generated more than 8.7 million shares, reactions, and comments on Facebook when compared to just over 7.3 million from 19 major news websites.[4] According to individuals experienced in running fake news sites, ad networks don't care about the quality of these sites before they opt to publish ads, as long as the sites meet minimum thresholds (for instance, no pornography). The main requirement for most advertising networks is that the traffic comes from people, not bots.[5]

Most frauds associated with fake content on social networking websites are not high-tech crimes requiring "super-hacker" skills. Instead, the "attackers" employ social engineering and deception methods. Note that deception involves a psychological process rather than a technological one. The idea is that information senders (such as fake news creators) can create the false impression in information receivers (readers) that the news is real. In this way, fake content creators manipulate readers' behaviors (for example, convincing them to click on web links).

Fake content in social networking websites has economic, political, and social consequences. According to a 24 November 2016 *Washington Post* article, researchers at PropOrNot, which monitors sites broadcasting Russian propaganda, said more than

200 websites routinely promoted Russian propaganda during the 2016 US presidential election season. These websites had at least 15 million US viewers. Stories planted by these websites were viewed more than 213 million times on Facebook.[6]

Other fake news creators, who were known to be operating from countries such as the Republic of Georgia and Macedonia, are less organized but motivated by financial incentives. For instance, during the one-year period before the 2016 US presidential election, residents of the Macedonian town of Veles (population 45,000) launched more than 140 US politics websites. Most of the domain names looked American, such as WorldPoliticus.com, TrumpVision365.com, USConservativeToday.com, DonaldTrumpNews.co, and USADailyPolitics.com.[7]

Analyzing the Value of Fake News

Using well-known economic analysis, fraudsters will engage in the creation and management of fake news if[8]

$$M_b + P_b > I_c + O_{1c} + P_c + (O_{2c}\, \pi_{arr}\, \pi_{con}), \qquad (1)$$

where

- M_b = the monetary benefits of engaging in frauds involving fake news;
- P_b = the psychological (noneconomic) benefits of engaging in frauds involving fake news;
- I_c = direct investment costs;
- O_{1c} = the opportunity costs of engaging in the creation and management of fake news;
- P_c = the psychological costs of engaging in frauds involving fake news;
- O_{2c} = the monetary opportunity costs of conviction;

- π_{arr} = the probability of arrest; and
- π_{con} = the probability of conviction.

The product term $O_{2c}\, \pi_{arr}\, \pi_{con}$ on the right side in Equation 1 is also referred to as the *expected penalty effect*.

Let's now look at the first five variables to better explain Equation 1:

- M_b. For the reasons noted earlier, there is money to be made. For instance, between August and November 2016, a Macedonian teenager made around US$16,000 from two pro-Trump websites,[9] and a Facebook-focused fake-news writer reportedly received $10,000 a month from AdSense.[10]
- P_b. A Georgian fake news creator ran fake stories focused on attracting pro-Trump supporters by noting that he personally preferred Trump. In this case, there were psychological benefits.
- I_c. Fake news creators cut and pasted stories available from other websites. So, minimum efforts and investment of time and resources were required. The requirement is not that readers stay on a page for long time periods—all fake-news writers hope is that readers click the link once.
- P_c. In a recent *New York Times* interview of fake-news creators from Georgia, the interviewees noted that they were principally motivated by income. Thus, there was no guilt involved. Moreover, they believed that no one was physically hurt.[11]
- O_{1c}. Fake-news creation is an attractive economic activity, especially for younger people in economies burdened with high unemployment rates. For

instance, in the first quarter of 2017, Macedonia had an unemployment rate of 22.9 percent (bit.ly/2fPanJ9). For those who work, the average monthly salary in Macedonia is $371.[9]

Then there is the expected penalty effect ($O_{2c}\, \pi_{arr}\, \pi_{con}$) in Equation 1. This is the chance of being arrested and convicted for fake-news creation. In countries such as Macedonia and Georgia, where most of the fake news is created, this is slim to zero. And the fake news creators in Georgia have broken none of that country's laws.[11]

How to Break the Circle

Creators, consumers, and arbiters of disinformation have a reinforcing effect on each other. This leads to a fake news ecosystem. Figure 1 shows this circle's key elements. Note that sociopolitical and economic factors make fake news creation an attractive economic option for many young people in some parts of the world. Moreover, the general population's consumption of social media for news has increased and a large proportion of the population lacks the ability to objectively assess the contents and sources of social media. Finally, activities of various arbiters encourage (or at least do not discourage) fake news creation.

Consumers

Consumers might lack the ability to objectively assess the accuracy and quality of information and its sources. One study found that about 8 percent of the adult population is "willing to believe anything that sounds plausible and fits their preconceptions about the heroes and villains in politics."[12]

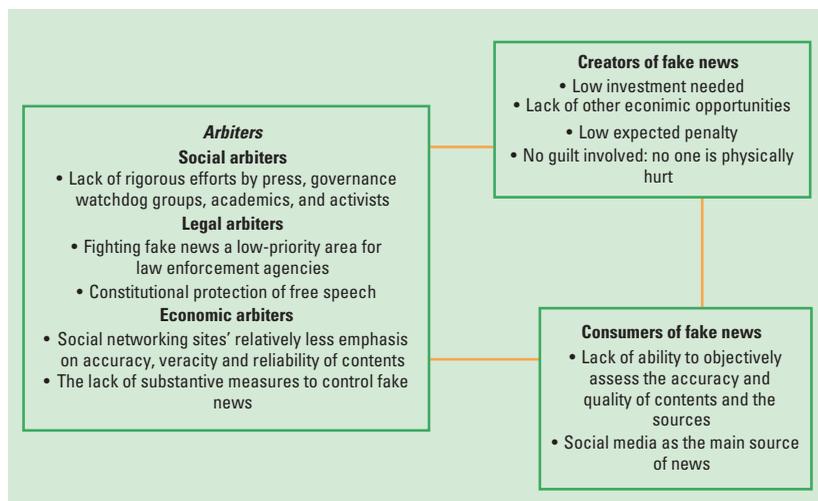Researchers at the Stanford Graduate School of Education

Figure 1. The vicious circle of fake-news creation. Socio-political and economic factors make fake news creation an attractive economic option for young people in some parts of the world. The general population's consumption of social media for news has increased, and the activities of various arbiters do not discourage fake news creation.

conducted a study of 7,000 students who were between middle school and college to gauge their assessment of the information they read on the Internet and concluded that the millennial generation "can easily be duped." The study, which was quoted in the *Washington Times*, found that most of the students, despite their digital savviness, lacked the ability to make distinctions in content, distinguish between facts and non-facts, and assess the reliability of sources. Many of the respondents were unable to distinguish between advertisements and articles, and between fake news and fact-based news. Most were not aware of or not concerned about political bias.[13]

Creators

As mentioned, low investment is needed to create false information. The growth in fake news is also associated with and facilitated by constitutional free speech protections. In the US, for instance, the First Amendment prevents law enforcement agencies from being able to police free speech. Other Western countries have similar protections. This means that social media users have the freedom to express themselves and publish their opinions in virtually any way. As noted, fake-news creators in countries such as Macedonia and Georgia might not have broken any of their countries' laws.

Arbiters

Researchers have identified three categories of "arbiters"—social, legal, and economic.[14]

Social arbiters include the press, governance watchdog groups, academics, and activists. A key concern is that there has been a lack of organized and systematic responses by these groups. Moreover, rigorous efforts have not been made by groups such as third-party fact checking organizations and media outlets.[15]

Law enforcement agencies and government agencies could be *legal arbiters* that enforce rules and regulations, but fighting

fake news is a low-priority area for them. For instance, the FBI is devoting increased priority and resources to prevent attacks linked to the Islamic State. A key focus has been in developing an informant network that can provide information about plots to FBI agents and connect Internet-radicalized plotters with people working for the FBI.[16] Threats associated with fake news appear to be of less priority.

Commercial organizations could be *economic arbiters*. Facebook's business model is based on users' engagement, interaction, and content consumption. The more users read, click, share, and engage with content, the more profit Facebook receives. Consequently, relatively less emphasis is placed on accuracy, veracity, and reliability.[17]

The Trust Project, launched in 2014 by more than 60 news media outlets, academics, and social networks, has a mission to "restore the trusted role of the press in civic life." One of the coalition's aims is to help consumers and technology companies by establishing guidelines, trust metrics, and ranking algorithms that assign higher weights to known reliable sources.[17]

Commercial platforms such as Facebook and Twitter function in ways that differ dramatically from past media. A key consideration here is that such outlets lack rigorous editors to vet the quality of the posts before they are published.[15] Users can share pictures, videos, text messages, news, and other content with each other with little or no third-party filtering, fact-checking, or editorial judgment. Some who post reach as many followers and readers as major media outlets such as the *New York Times*, Fox News, and CNN.[18]

The question of whether social networking sites should play the

role of gatekeeper for the news and information their users consume is arguably more philosophical than technological.[19] As Facebook CEO Mark Zuckerberg noted, "While some hoaxes can be completely debunked, a greater amount of content, including from mainstream sources, often gets the basic idea right but some details wrong or omitted. An even greater volume of stories express opinions that many will disagree with and flag as incorrect even when factual."[20]

Breaking the Circle

Without appropriate measures to combat fake news, the circle's elements reinforce each other and lead to public distrust in all media and law enforcement, but an increased confidence in fake news. So, where might we start to break this circle and to alter the cost–benefit calculus associated with fake news?

The giant social networking services could initiate efforts to break the circle of fake news creation. Some initiatives have already been taken through the deployment of sophisticated technologies. In August 2017, Facebook announced that it launched a campaign orientated toward fighting a technique known as "cloaking," whereby fake content creators mislead users. These creators do so by disguising the true destination of an advertisement or post, or the real content of the destination page. The illicit actors do so to circumvent or bypass Facebook's review processes.[21] The new approach relies on AI and expanded human review processes. The company stated that it would ban advertisers or pages engaged in cloaking. After significant media coverage of fake news, Google and Facebook stopped advertising relationships with fake news sites.[20] This might have decreased financial incentives for writing fake news.

A group of journalists in the Ukraine has started "StopFake News" with the goal of debunking it. Started by professors and journalists from Kiev Mohyla University, "StopFake News" considers itself to be a media institution for providing public service journalism.[22] As of July 2017, "StopFake News" journalists provide a weekly overview of disinformation and misinformation about Ukraine from Russian media. The show airs on Hromadske TV, and Kyiv Post publishes the English version of the program.[23]

Moreover, customers can provide pressure to businesses by demanding such supports as a part of corporate social responsibility.[24]

It is important to understand the various actors in fake news. For a fake-news writer serving the US reader, headlines that are "eye-catching" attract immediate clicks and advertising dollars. For-profit social networks have questionable motives. Readers are easily duped and not well equipped to assess the reliability of information and its sources.

Anti-fake-news organizations such as StopFake have made modest efforts. Public awareness and education campaigns might be able to help, but realize that the pace of information being pushed out to the public is overwhelming. For example, CNN and other major outlets offer "breaking news" constantly—who can keep up? The bottom line: anti-fake news approaches are not yet adequate. **IT**

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