Facebook's Fake News Feed

Minh-Quan Tran

CPE 300: Professional Responsibilities

California Polytechnic State

Dr. Clark Savage Turner

June 23, 2017

Abstract

The spread of false news on Facebook has been a source of international controversy since the 2016 U.S. presidential election. [10] In response to allegations that false news may have influenced the election's outcome, [11, 14] Facebook has enacted various measures to suppress its appearance on its News Feed. [20, 25] But is it ethical for Facebook to curate the news? Some journalists commend Facebook for taking ownership of its role in shaping current events. [28] Others denounce Facebook's efforts, citing bias [29] and calling it censorship. [39] By identifying and addressing the danger of disinformation, Facebook is accepting responsibility for the safety and knowledge of its users. Therefore, Facebook's actions are in their users' best interests and are consistent with Principle 2 of the Software Engineering Code of Ethics. [4]

Contents

1 Facts of the Matter

1.1 The Rise of Fake News

Donald Trump popularized the term *fake news* during the 2016 United States presidential election, liberally using the term to describe major media outlets such as the New York Times and CNN. [10] Unfortunately, his usage has obscured a more semantic meaning of *fake news* relevant to our interests: stories that intentionally deceive readers for personal or political gain. [27]

To distinguish these meanings, some (like Facebook) have turned to using the term *false news* to describe these articles. [25] We will follow suit.

While false news is not a new phenomenon — we used to call it propaganda — modern technology has turned false news into a profitable venture. [24]

1.2 Viral Infection

Online social networks like Facebook and Twitter are standout examples of such technologies. Not only do social networks provide an inexpensive, unregulated platform for distribution, [10] the users themselves help circulate articles by "sharing" them with connected users. [10]

Facebook, with 1.28 billion daily active users,[1] [18] provides a vast network for distribution. Considering 2/3rds of its users get news from its social networking service, [23] Facebook plays a major role in the spread of false news.

The size of Facebook has even sparked debate over whether its enabling of disinformation influenced the results of the election. [9,11,36] Mark Zuckerberg, CEO of Facebook, has even received allegations that Facebook enjoys the increased readership and profitability of false news. [15]

1.3 Facebook's Reply

In response to this criticism, Facebook has enacted multiple measures to combat the spread of false news. [12,13,18,20,25, 37]

Initial efforts in 2016 included introducing algorithms to detect and reduce clickbait[2] and false news on Facebook's News Feed [20] and adding a feature for users to flag false news articles.[3] [13]

In early 2017, Facebook expanded its efforts by working alongside various news agencies and fact-checking organizations internationally to flag false news stories. [9] As of May 2017, Facebook has deleted tens of thousands of accounts that spread false news. [37]

---

[1]As of March 2017.

[2]Clickbait here is defined as links with titles that are misleading or withhold information to entice users to "click" the link. [20]

[3]On April 6, 2017, Facebook further published a set of tips for identifying false news. Hundreds of millions of users in 14 countries received notifications of their existence and were prompted to read them. [25]

2   A Dilemma

Is it ethical for Facebook to designate and restrict articles it labels as "false news" from its News Feed?

3   Social Implications

Because the false news epidemic is a new phenomenon (at least on this scale), Facebook is venturing into the unknown in addressing it. Facebook is a leader in the tech world – its social networking service is the third most popular website on the internet. [6] How Facebook handles this situation may very well set a precedent for how others handle it in the future.

3.1   Disinformation[4]

The proliferation of false news on social media platforms directly affects the public at large. 62% of American adults get news from social media, so it is easy for "alternative facts" to deceive large populations. In fact, 64% of American adults believe that false news is causing confusion about current events. [8]

Some journalists have claimed that the spread of false news on Facebook influenced the 2016 United States presidential election results. [27] In November 2016, BuzzFeed News[5] posted an analysis showing that false news articles published on Facebook during the election outperformed news articles published by mainstream news outlets.[6] [34]

However, a rigorous Stanford study has suggested that Facebook's involvement in the election results is heavily overstated and should not be held directly responsible for their sharing. [14]

Edward Snowden still suggests that although the power of false news may be overestimated, the power of social media on the public should not be. [11]

Finally, through word-of-mouth and traditional media, false news can even disperse through populations beyond the Internet and cause very real world consequences. The Pizzagate scandal is a prime example.[7] [5]

---

[4]Here we will refer to Merriam-Webster to define *disinformation*: false information deliberately and often covertly spread... in order to influence public opinion or obscure the truth. [2] This definition serves to distinguish *disinformation* from *misinformation* by its deliberate intent.

[5]The author does not condone reading BuzzFeed News.

[6]The study revealed specifically that the top 5 false news articles published on Facebook during the final three months of the election received more engagement than the top 5 news articles published by mainstream news outlets. Engagement was quantitatively measured in shares, reactions, and comments. [34]

[7]Pizzagate was a scandal revolving around a fabricated conspiracy theory that made international waves during the 2016 election. The theory alleged that a human trafficking and child-sex ring was being conducted by the U.S. Democratic Party out of the basement of a Washington D.C. pizza restaurant. Unlikely as it sounds, one firm, armed believer visited the restaurant to investigate and fired a shot before realizing that the restaurant did not have a basement. [16]

3.2 Censorship

Between false news, satire, sensationalism, and opinionated journalism, there are many different non-overlapping interpretations of "fake news". [27] This makes it difficult to objectively qualify what should and should not be regulated.

Regulation of media and corporate censorship — as opposed to governmental censorship — has been addressed since 1969. [26] Facebook, as a corporation, is toeing the line in taking a proactive stance in the matter.

The regulation or systematic removal of anything published on the internet has also been interpreted as censorship and a curb on free speech. [30]

4 Perspectives

4.1 Opposing Arguments

4.1.1 Removing fake news is a curb on free speech

Using the law to ban fake news is censorship and a violation of free speech. Furthermore, banning fake news will cause political chaos as politicians turn to name-calling and accusations. [30]

In addition, compelling social media outlets to remove fake news is tantamount to censorship. Though it is censorship by a corporation and not the government, it is still a result of government action. [22]

4.1.2 Fact-checking cannot be inherently neutral

People have very different opinions about what constitutes "fake news," and "fact-checking" is not inherently neutral. Introducing a human element cannot be achieved without also introducing bias. [29] In fact, since Facebook is the entity deciding what is "fake news," this is tantamount to liberal censorship. [39]

4.1.3 The selected fact-checkers are not credible

"When the media outlets performing the work of fact-checking do not themselves have credibility, no one is going to accept their conclusions. And that ship has already sailed." [29]

4.2 Supporting Arguments

4.2.1 The goal is not to remove stories

The goal of Facebook's initiative is to focus on removing clearly untrue stories and not opposing opinions — Facebook will continue to rely on unbiased third parties. [13]

4.2.2 The strategy does not involve direct censorship

The strategy is centered around flagging untrustworthy content, not removing content. While accounts are being removed, these accounts are ones believed

3

to be constructed with the sole purpose of spreading false news. [13]

4.2.3 Facebook is being responsible

Facebook is one of the largest forums for civic discourse (including of politics). By addressing the issue of false news, Facebook is owning its role in shaping public perception of current events. [28]

5 Analysis

5.1 How the SE Code Applies

In its preamble, the Software Engineering Code of Ethics defines software engineers as "those who contribute by direct participation... to the maintenance... of software systems." [4]

5.1.1 News Feed is a Software System

Facebook states that "News Feed [is] a popular screen in the Facebook for Android app." [35] The Merriam-Webster dictionary defines an *app* as "a computer program that performs a special function" [2] and *software* as "specifically: computer programs." [2] Facebook's Vice President of Product Management, Adam Mosseri, further calls News Feed a user-centric *system*, at a technical level. [31] Therefore, Facebook's News Feed is a *software system.*

5.1.2 Facebook Maintains its News Feed

According to David L. Parnas, software "[m]aintenance is just redesign and redevelopment." [32] In other words, revising software that has already been designed and developed. [2]

Facebook introduced News Feed in September 2006. [18] But Adam Ernst of Facebook states that, even now, the "engineering team spends a lot of time and effort making News Feed reliable, simple, and fast." [17] Mosseri adds that "[w]e launch changes to the design of News Feed on a regular basis." [31] Facebook, then, regularly contributes to the redesign and redevelopment — the *maintenance* — of News Feed.

5.1.3 Facebook is a Software Engineer

As stated in section 5.1.1, Facebook's News Feed is a software system. Because Facebook maintains News Feed, Facebook is contributing by direct participation to the maintenance of software systems. Therefore, according the the Software Engineering Code of Ethics, Facebook is a software engineer and "shall adhere to the code." [4]

5.2 Principle 2: The Client

5.2.1 Tenet 2.07

> Identify, document, and report significant issues of social concern, of which they are aware, in software or related documents, to the employer or the client. [4]

At the core of this tenet is the idea of a significant issue of social concern and how

5

Facebook, as a software engineer, should address it.

5.2.1.1 Is False News a Significant Issue?

According to the Oxford English Dictionary, an issue is "[a]n important topic or *problem for debate*." [3] That the issue is significant emphasizes its importance.

In section 3.1, we discussed the negative effects of false news: that its spread brings with it disinformation, confusion, and chaos. These effects are unwelcome and harmful. If false news is "unwelcome and harmful," then according the the Oxford English Dictionary, false news is a *problem*. [3]

To *debate* is "to argue about," [3] so for a problem to be *debated* is for the problem to be argued about. In section 4, we touched upon some of the many different perspectives on false news. While this list is not exhaustive, we have already established that false news is *debated*.

Because false news is a *debated problem*, it is a significant issue.

5.2.1.2 Social Concern with False News

A concern is "[a] matter of interest or importance to *someone*," [3] so to be of *social* concern is to be of importance to *society*.

The Pew Research Center found that "prominent internet analysts and the *public at large have expressed increasing concerns* that the content, tone and intent of online interactions have undergone an evolution that threatens its future and theirs." [33] Here "the public" refers to "the people of a country [or] state" [2] — in other words, *society*. [3]

If society has expressed concern over false news, then false news is of social concern.

So in our domain, the significant issue of social concern refers to the issue of false news.

5.2.1.3 False News and Software

James Carson of The Telegraph states that "[b]efore the Internet, publishing fake news and gaining an audience that could be monetised was nearly impossible." [10] And according to Hunt Allcott and Matthew Gentzk of Stanford and NYU, "much of [false news'] circulation is on Facebook (and other social media) news feeds." [7]

If false news has little to no potential for growth outside of the Internet and Facebook's News Feed provides a primary avenue for false news to spread, false news depends on, or is at least linked to, Facebook's News Feed.

As determined in section 5.1.1) News Feed is a *software system*. False news is related to News Feed and is therefore a problem related to software. The software at hand is News Feed.

6

5.2.1.4 Addressing False News

We now have that Tenet 2.07 of the Code of Ethics would require Facebook, the software engineer, to "[i]dentify, document, and report [false news] to the employer or the client." [4]

To report is to "*[g]ive a... written account* of something that one has... investigated." [3] *Giving a written account* falls into a similar vein as documentation, but does involve *sharing* the documents. In this domain, to "share" something is to "[p]ost or repost (something) on a social media website or application." [3] So to report is to investigate and post written documentation.

5.2.1.5 Facebook's Client

Taken from its official website, Facebook's mission "is to give people the power to share and make the world more open and connected. People use Facebook to stay connected with friends and family, to discover what's going on in the world, and to share and express what matters to them." [18]

According to its mission statement, Facebook aims to serve the people who use its software and not its customers. So even though Facebook's revenue comes from advertisers, [21] Facebook's clients are its users.

5.2.1.6 Domain Specific Rule

By applying Tenet 2.07 of the Software Engineering Code of Ethics to our do-

main, we can formulate the following rule:

> Facebook must identify and investigate the issue of false news in its News Feed and post written documentation to its users.

We have established our issue of false news. We can now examine Facebook's actions and determine if Facebook performed a satisfactory identification and successful investigation. In addition, we will determine if Facebook posted documentation for its users. If so, Facebook has acted and is acting ethically by the Code.

5.2.2 Facebook's Identification

The first thing we must examine is whether Facebook successfully identified the issue of false news. For Facebook to be ethically successful, its actions must be professional and not *negligent*, where "negligence" is "failing to exercise the care expected of a reasonably prudent person in like circumstances." [2]

5.2.2.1 Satisfactory Identification

Before proceeding, we should determine success criteria: specifically, what constitutes a *satisfactory identification*.

To be "satisfactory" is to "[f]ulfill expectations." [3] Facebook is a software engineer and maintains its software News Feed. Tenet 3.07 of the Code of Ethics states that software engineers shall

"[s]trive to fully understand the specifications for software on which they work." [4]

We can then expect Facebook to identify issues with its software before those outside of its organization.

At this time, Facebook received a large dose of media attention focused on false news. [11] There is no question whether Facebook is or is not *currently* aware that false news was an issue on its News Feed. False news on Facebook received a large dose of media attention following Election Day, so even those outside of the organization are aware. [11]

We must then first determine whether Facebook recognized that false news was an issue on News Feed *before* it received media attention. If not, Facebook did not take proper care and was therefore negligent.

5.2.2.2   When Did Facebook Recognize the Issue?

On December 15, Facebook posted a News Feed status update to its Newsroom titled "News Feed FYI: Addressing Hoaxes and Fake News." [20] This update served to inform users about Facebook's new policies in response to false news and was the first update Facebook had posted about News Feed following the election. [20]

This is not the first of such updates. Facebook has been publishing "News Feed FYI" updates since August 2013. [18] Many record minor algorithmic improvements such as "Showing More High Quality Content." [18]

But Facebook has also posted updates about "Cleaning Up News Feed Spam." [18] Upon further inspection, we find that Facebook published its first update addressing "Showing Fewer Hoaxes" in January 2015. [19] Here Facebook defines "hoaxes" as "a form of News Feed spam that includes scams... or deliberately false or misleading news stories." [19] In other words, false news.

So while Facebook may have doubled its efforts in response to the media spotlight, [9] Facebook has been addressing false news since long before pressure was placed on them.

Facebook was not negligent enough to overlook such a serious issue with News Feed, but we can now determine if Facebook's response was "reasonably prudent."

5.2.2.3   Did Facebook Recognize the Gravity of its Situation?

The Oxford English Dictionary likens "prudence" to "cautiousness." [3] So to determine if Facebook acted prudently, we will determine if Mark Zuckerberg recognized the gravity of the situation and acted with caution.

In his post, Mark Zuckerberg shared that "Personally, I think the idea that fake news on Facebook of which it's a small amount of content influenced the election in any way is a pretty crazy

idea." [40]

TechCrunch's Jordan Crook responded by accusing Zuckerberg of attempting to "diminish fake news on Facebook as an issue" [15] and cited that "more than half of U.S. adults get their news from social media" [15] and "most students have trouble distinguishing fake news from real news." [15] Crook was not the only one who expressed concerns. [36]

But in January 2017, Stanford published a study that "examine[d] fake news and the 2016 presidential election." [14] This study proposed "that false news stories may not have been as persuasive and influential as is often suggested." [14]

Even then, Facebook proceeded with great caution: Despite "growing pressure on Facebook over fake news... the company has appeared resistant." [9] Facebook enacted multiple measures to combat false news following the election, [13] but Zuckerberg continued to stress that "we must be extremely cautious." [40]

So although the situation may have been less severe than anticipated, Facebook had still exercised extra caution, demonstrating professionalism.

5.2.3   Facebook's Investigation

To "investigate" something is to "[c]arry out a systematic or formal inquiry to discover and examine the facts of [that thing] so as to establish the truth." [3] Because it published a report of its findings, we know that Facebook performed an investigation. [38] To determine if the

investigation was successful, we will ask if it discovered facts and established the truth.

5.2.3.1   What was being Investigated?

In the wake of the election, Facebook received "allegations its distribution of fake news helped elect Donald Trump" [12] — allegations tied to a Russian propaganda effort. [36]

Although Zuckerberg had initially dismissed the validity of such a bold claim, [40] former FBI director James Comey confirmed in March that the FBI was investigating this case. [1] That Facebook's social network could have enabled these efforts could have conceivably placed liability in Facebook's hands.

5.2.3.2   Results of the Investigation

On April 27, Facebook released an extensive report on what it called "information operations," which it defined as "[a]ctions taken by governments or organized non-state actors to distort domestic or foreign political sentiment." [38] Facebook stated that it "is not in a position to make definitive attribution to the actors sponsoring this activity," [38] but that "[their] data does not contradict the attribution provided by the U.S. Director of National Intelligence." [38]

This correlated with rumors circulating at the election's close. [14, 36]

While Facebook did not necessarily "discover the truth," it established *cer-*

tain truths that had previously been based on rumor. [28] In addition, Facebook uncovered patterns in human-piloted amplification accounts (these are non-bot accounts that spread false news [38]) that allowed the company to more efficiently combat false news.

By discovering patterns, Facebook performed an *useful* investigation. The data it collected can now also be used to the advantage of its users (in a utilitarian sense). But because it could not determine a central actor, [38] the investigation was not a complete success.

5.2.4 Facebook's Documentation

We know now that Facebook performed a partially successful investigation following its satisfactory identification of the false news issue. Now we must determine if Facebook posted proper written documentation to its users.

Documentation, outside of software, is "[m]aterial that provides official information or evidence or that serves as a record." [3] For something to be written generally means for something to be "set down in writing," [2] but in the field of computing it can mean "to introduce (information) into the storage device or medium of a computer." [2] Because Facebook is a "[s]oftware engineer... who contribute[s] by direct participation... to... software systems," [4] and because "software" is tied to "computer programs," [2] in our domain we will define "written documentation" as "documentation accessi-ble by a computer program."

5.2.4.1 Documentation Available to Users

As discussed in 5.2.3.2, Facebook prepared an extensive report on its investigation into information operations. The report is available at [38].

In addition, Facebook has been posting updates to its News Feed in its "News Feed FYI" series since August 2013, as mentioned in section 5.2.2.2. These posts are collectively available on the Internet at `https://newsroom.fb.com/news/category/news-feed-fyi/`. Because `https://newsroom.fb.com` is an address accessible via the Internet, it is a website. [3] A website is "[a] set of related web pages," [3] and a web page is a "[a] hypertext *document*." [3] Therefore, these posts are *documents* and are valid documentation. And as web pages, they are available to any user with access to a computer browser.

5.2.5 Conclusion

We have determined that Facebook was not negligent in that the company early on identified the issue of false news in its News Feed. In addition, Facebook addressed it with caution in an act of prudence.

After identifying the issue of false news, Facebook performed a partially successful investigation and posted thorough documentation. These documents are all easily available to its users.

10

Because Facebook did not discover an actor in its investigation into information operations, [38]the company did not achieve a complete success. But Facebook sufficiently identified that false news was a significant issue of social concern, documented it and reported to its client. So by Tenet 2.07 of the Software Engineering Code of Ethics, Facebook acted in the best interests of its client and has thus acted ethically.

References

[1] "James comey." [Online]. Available: https://www.biography.com/people/james-comey-051217

    Biography of James Comey, ex-FBI director.

[2] "Merriam-webster." [Online]. Available: https://www.merriam-webster.com

    Provides semantic definitions for English words.

[3] "Oxford dictionaries." [Online]. Available: https://en.oxforddictionaries.com

    Provides semantic definitions for English words.

[4] "Software engineering code of ethics." [Online]. Available: http://www.acm.org/about/se-code

    The ethical basis upon which this paper is written.

[5] "60 minutes: Fake news," March 2017. [Online]. Available: http://www.cbsnews.com/videos/fake-news/

    60 Minutes special investigating bot usage and motivations of fake news publishers.

[6] I. Alexa Internet, "Alexa top 500 global sites." [Online]. Available: https://www.alexa.com/topsites

    Shows Facebook is the third most visited website on the internet.

[7] H. Allcott and M. Gentzkow, "Social media and fake news in the 2016 election," *Journal of Economic Perspectives*, vol. 31, pp. 211–236, Spring 2017.

    Results of a Stanford study on false news during the election.

[8] M. Barthel, A. Mitchell, and J. Holcomb, "Many americans believe fake news is sowing confusion," *Pew Research Center*, Dec 15 2016. [Online]. Available: http://www.journalism.org/2016/12/15/many-americans-believe-fake-news-is-sowing-confusion/

    Statistics on how Americans believe fake news is influencing the public. Found that 23% of U.S. adults have shared a fake news story.

[9] R. Booth, "Facebook announces steps against fake news during general election," *The Guardian*, May 8 2017. [Online]. Available: https://www.theguardian.com/politics/2017/may/08/facebook-help-tackle-fake-news-during-general-election

> Report on the steps Facebook has taken to combat fake news including involving outside fact-checkers.

[10] J. Carson, "What is fake news? its origins and how it grew in 2016," *The Telegraph*, March 2017. [Online]. Available: http://www.telegraph.co.uk/technology/0/fake-news-origins-grew-2016/

> Analyzes factors behind the growth of fake news in the modern era.

[11] K. Conger, "Snowden discusses facebooks fake news controversy," *TechCrunch*, Nov 15 2016. [Online]. Available: https://techcrunch.com/2016/11/15/snowden-discusses-facebooks-fake-news-controversy/

> Edward Snowden brings attention to Facebook's dominance over public policy.

[12] J. Constine, "Facebook chose to fight fake news with ai, not just user reports," *TechCrunch*, Nov 14 2016. [Online]. Available: https://techcrunch.com/2016/11/14/facebook-fake-news/

> Reports that Facebook has been using AI to reduce human bias.

[13] ——, "Facebook now flags and down-ranks fake news with help from outside fact checkers," *TechCrunch*, Dec 15 2016. [Online]. Available: https://techcrunch.com/2016/12/15/facebook-now-flags-and-down-ranks-fake-news-with-help-from-outside-fact-checkers/

> Covers Facebook's first attempt to make fake news articles less visible, specifying its objectivity and its methods.

[14] K. Crawford, "Stanford study examines fake news and the 2016 presidential election," *Stanford News*, Jan 18 2017. [Online]. Available: http://news.stanford.edu/2017/01/18/stanford-study-examines-fake-news-2016-presidential-election/

> Study. Suggests that Facebook's involvement in the election was overstated.

[15] J. Crook, "Facebook will never take responsibility for fake news," *TechCrunch*, Mar 19 2017. [Online]. Available: https://techcrunch.com/2017/03/19/facebook-will-never-take-responsibility-for-fake-news/

   Covers Facebook's struggle with fake news and suggests that Facebook gains from its spread.

[16] A. Davidson, "The age of donald trump and pizzagate," *The New Yorker*, Dec 5 2016. [Online]. Available: http://www.newyorker.com/news/amy-davidson/the-age-of-donald-trump-and-pizzagate

   Investigates and attempts to decipher the circumstances surrounding the Pizzagate debacle.

[17] A. Ernst, "Making news feed nearly 50https://code.facebook.com/posts/340384146140520/making-news-feed-nearly-50-faster-on-ios/, Oct 31 2014.

   Update on News Feed from its dev team, describing its loading process.

[18] Facebook, "Facebook newsroom." [Online]. Available: https://newsroom.fb.com/

   Facebook's official information page.

[19] ——, "News feed fyi: Showing fewer hoaxes," Jan 20 2015. [Online]. Available: https://newsroom.fb.com/news/2015/01/news-feed-fyi-showing-fewer-hoaxes/

   Facebook announcement about addressing hoaxes from early 2015.

[20] ——, "News feed fyi: Addressing hoaxes and fake news," Dec 15 2016. [Online]. Available: https://newsroom.fb.com/news/2016/12/news-feed-fyi-addressing-hoaxes-and-fake-news/

   Facebook announcement on how they will address fake news.

[21] ——, "Facebook reports fourth quarter and full year 2016 results," Accessible at https://s21.q4cdn.com/399680738/files/doc_financials/2016/Q4/Facebook-Reports-Fourth-Quarter-and-Full-Year-2016-Results.pdf, Feb 1 2017.

   Facebook's Fourth Quarter and Full Year 2016 earnings.

[22] A. Faiola and S. Kirchner, "How do you stop fake news? in germany, with a law," *Washington Post*, Apr 5 2017. [Online]. Available: https://www.washingtonpost.com/world/europe/how-do-you-stop-fake-news-in-germany-with-a-law/2017/04/05/e6834ad6-1a08-11e7-bcc2-7d1a0973e7b2_story.html

Opinion. Critics: the German bill is a curb on free speech.

[23] J. Gotffried and E. Shearer, "News use across social media platforms 2016," *Pew Research Center*, May 26 2016. [Online]. Available: http://www.journalism.org/2016/05/26/news-use-across-social-media-platforms-2016/

Shows that a majority of U.S. adults get news from social media (62%). 18% do so often.

[24] R. Gray, "Lies, propaganda and fake news: A challenge for our age," *BBC News*, Mar 1 2017. [Online]. Available: http://www.bbc.com/future/story/20170301-lies-propaganda-and-fake-news-a-grand-challenge-of-our-age

In-depth analysis of fake news and the social implications of a post-truth global society.

[25] J. Jackson, "Facebook to offer users tips on spotting fake news," *The Guardian*, Apr 6 2017. [Online]. Available: https://www.theguardian.com/technology/2017/apr/06/facebook-to-offer-users-tips-on-spotting-fake-news

Reports that Facebook has published a set of tips.

[26] N. Johnson, "The silent screen," *TV Guide*, Sep 1969.

The FCC commissioner in 1969

[27] D. Kurtzleben, "With 'fake news,' trump moves from alternative facts to alternative language," *NPR*, Feb 17 2017. [Online]. Available: http://www.npr.org/2017/02/17/515630467/with-fake-news-trump-moves-from-alternative-facts-to-alternative-language

Investigates the semantics of Donald Trump's usage of the phrase "fake news".

[28] S. Larson, "How facebook is fighting back against propaganda," *CNN*, April 27 2017. [Online]. Available: http://money.cnn.com/2017/04/27/technology/facebook-fake-news/

Opinion. CNN: Facebook is taking ownership of its role in shaping current events.

[29] D. Lind and D. Matthews, "Vox sentences: Dont get too excited about facebooks plan to fight fake news," *Vox*, Dec 15 2016. [Online]. Available: http://www.vox.com/2016/12/15/13976786/vox-sentences-facebook-fake-news-fact-checking

Opinion. Various: bias is inherent in the system.

[30] D. Mass, "California bill to ban "fake news would be disastrous for political speech," *Electronic Frontier Foundation*, Mar 17 2017. [Online]. Available: https://www.eff.org/deeplinks/2017/03/california-bill-ban-fake-news-would-be-disastrous-political-speech

Opinion. EFF: banning fake news is censorship and is not the correct response.

[31] A. Mosseri, "News feed: Getting your content to the right people," Accessible at https://newsroom.fb.com/news/2016/04/news-feed-fyi-from-f8-how-news-feed-works/, Apr 22 2016.

Adam Mosseri, VP of Product Management for News Feed, talking about what News Feed is, how it works and what this means for publishers.

[32] D. L. Parnas, "A rational design process: How and why to fake it," *Transactions on Software Engineering*, February 1986.

Seminal paper on the software design process. Mentions software maintenance.

[33] L. Rainie, J. Anderson, and J. Albright, "The future of free speech, trolls, anonymity and fake news online," *Pew Research Center*, Mar 29 2017. [Online]. Available: http://www.pewinternet.org/2017/03/29/the-future-of-free-speech-trolls-anonymity-and-fake-news-online/

Very in-depth analysis of the changing dynamics of communication in an electronic, anonymous world.

[34] C. Silverman, "This analysis shows how viral fake election news stories outperformed real news on facebook," *BuzzFeed*, Nov 16 2016. [Online]. Available: https://www.buzzfeed.com/craigsilverman/viral-fake-election-news-outperformed-real-news-on-facebook

Analyzes the performance of fake vs. mainstream news stories at the close of the election.

[35] O. Strulovich, "Fast rendering news feed on android," Accessible at https://code.facebook.com/posts/879498888759525/fast-rendering-news-feed-on-android/, Jan 28 2015.

Describes the Facebook Android app.

[36] C. Timberg, "Russian propaganda effort helped spread fake news during election, experts say," *Washington Post*, Nov 24 2016. [Online]. Available: https://www.washingtonpost.com/business/economy/russian-propaganda-effort-helped-spread-fake-news-during-election-experts-say/2016/11/24/793903b6-8a40-4ca9-b712-716af66098fe_story.html

Suggests that the Russian goverment tampered with the American Presidential election and investigates Russia's historical methods and present motivation.

[37] J. Titcomb, "Facebook deletes thousands of uk accounts in crackdown on fake news," *The Telegraph*, May 8 2017. [Online]. Available: http://www.telegraph.co.uk/technology/2017/05/08/facebook-deletes-thousands-uk-accounts-crackdown-fake-news/

Reports that Facebook has identified and deleted "tens of thousands" of accounts that spread fake news.

[38] J. Weedon, W. Nuland, and A. Stamos, "Information operations and facebook," Apr 27 2017. [Online]. Available: https://fbnewsroomus.files.wordpress.com/2017/04/facebook-and-information-operations-v1.pdf

Official Facebook transparency announcement about usage of the platform for political ends.

[39] M. Yiannopoulos, "Facebook will censor 'fake news' for germany," *Milo*, Jan 16 2017. [Online]. Available: https://milo.yiannopoulos.net/2017/01/facebook-will-censor-fake-news-germany/

Opinion. Milo: What Facebook is doing is censorship.

[40] M. Zuckerberg, "I want to share some thoughts on facebook and..." Nov 12 2016. [Online]. Available: https://www.facebook.com/zuck/posts/10103253901916271

Mark Zuckerberg's first Facebook post on false news emphasizing care of approach and committing to updating users on the evolution of News Feed.