

Impact of Fake News on Socioeconomic Sphere and How to Fight It

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The alarming emergence of fake news and how artificial intelligence could help fight it. A contemporary analysis.

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Abstract

Fake news is penetrating even legitimate and genuine sources of news today, imperilling the credibility and value of news organisations, public personalities and even corporates. Even though myriad forms of fake news existed across centuries, the advent of social media has given misinformation a new lease of life and push. This paper analyses the socioeconomic impact of fake news by analysing key global events and tries to chronicle efforts in checking fake news with special focus on how artificial intelligence tools can be a big boon in this mission.

Key words

Fake News, Socio-economic Sphere, Artificial Intelligence.

Fake news now claims a disturbingly significant chunk of good news. But most likely, most readers would not have noticed it. But their impact on brands, personalities, markets, issues and causes has become so deep to ignored. That's because efforts to expose fake news are only beginning to take shape. There has been a series of popular writing about fake news worldwide, but scholarly papers on the subject has been much less. Several academics did publish a few peer-reviewed research on the topic, but not enough. Entities such as the Poynter Institute, the First Draft Partner Network, a collective of newsrooms across the globe, and some social media companies and fact-checking bodies are in the forefront of understanding and containing fake news.

It would not be an exaggeration if one states that fake news is becoming all-pervasive. Examples of fake news are so pervasive in our media now. More and more cases are coming up, of established new organisations falling for false news. To pick an example, let's look at the Paris attacks of November 2015. Several media outlets carried a selfie photo of Canadian Sikh Veerender Jubbal, terming him a possible leader of the attacks. Europe's popular newspaper La Razón (The Reason), news agency ANSA and Sky TG24 carried Jubbal's photo. Later, it turned out that the photo was manipulated. Sky TG24's Twitter profile, which 20 lakh people followed at that time, continued to carry the photo even nine days after the incident. It is obvious that the news would have been consumed by several hundreds of people.

This incident, and many similar others, brought to light the immediate need to trace and trash fake news in the real time. Delays can cause serious personal, social and economic damage. As Claire Wardle, research director at the Tow Center for Digital Journalism, wrote on First Draft News, news organisations risk losing audience to such lies if they don't fight it as and when such misinformation is leaked. Of course, the easy way to check fake news is by asking all readers to check online (Google search, mainly) all the images they share on social media. But that is not going to be a workable solution.

It can be easily said that the challenge in front of concerned citizenry, media houses and regulators is gargantuan when it comes to fighting fake news. Here a question arises: How exactly to fight fake news? There is a consensus on a few steps. First, news outlets should build dedicated services to debunk misinformation. Now many news organisations have begun such services to check fake news. Le Monde's Décodeurs, Libération's Désintox, Buzzfeed France's Vérifié, France 24's Observateurs or Hoaxbuster.com are some examples. Next, news organisations must support readers and reporters who try to analyse and expose fake news. Volunteers are the key. In the age of social media, the amount of misinformation being circulated across the globe is too wide and deep. So it requires concerted efforts to check that.

Direct Impacts

Media studies experts say fake news have influenced two recent, epochal events: Brexit and the US Presidential elections. To pick a specific instance, a study from NYU and Stanford, have found that people shared fake stories supporting Trump at least 30 million times on social media during the presidential election campaigns. In comparison, fake pro-Hillary Clinton stories were shared at least 7.6 million times. It was reported that fake news has become an industry with huge business potential during the recent American President elections. Writing in *The Wired*, Samanth Subramanian has exposed a boutique industry in Macedonia where fake news outlets flourish as a business. Media reports had revealed that a Macedonian small town of Veles where only 55,000 people resided had at least 100 pro-Trump websites registered there. Most of these websites were filled with sensationalist and fake news. Macedonia is just an example of fake news hubs. Such fake news factories are spread across the globe, influencing the thinking processes of millions. Why this trend is alarming is because studies have shown that people with moderate views would be more satisfied by the fake news shows coverage than were liberals. And this doesn't augur well for democracies across the globe.

As the US has proved, elections are a direct example of the impact of fake news. Media experts have pointed out that the average US adult person read one or perhaps several fake news articles during the recent Presidential election period, with higher exposure to pro-Trump articles than pro-Clinton articles. How much this affected the election results depends on the effectiveness of fake news exposure in changing the way people vote. As one benchmark, studies show that exposing voters to one additional television campaign advertising changes vote shares by about 0.02 percentage. That means if one fake news article were about as persuasive as one TV campaign ad, the fake news in would have changed vote shares by an amount on the order of hundredths of a percentage point. This is much smaller than Trump's margin of victory. Of course, there are many reasons why a single fake news story could have been more effective than a television commercial. But in general, fake news, convincingly placed, can sway poll results, as the US presidential elections have showed.

Fake news works in quirky ways. If it were true that the Catholic Pope endorsed Trump (as many fake news pieces had claimed during American election campaign), this

fact would be significantly and probably move a rational voter's beliefs more than the information contained in a typical campaign advertisement. Most media outlets and agencies don't have a fake news database, if they have one, that would be incomplete, and the effect of the stories it omits could also be significant. There are many ways in which this speculative estimate becomes conservative; this could overstate the relevance and impact of fake news. A mistake most analysts make when they consider the number of stories voters read regardless of whether they believed them is that they do not account for collateral damages in the sense that such news gradually and steadily influenced people's behaviour towards several other allied factors.

Social media platforms and advertising networks have faced some pressure from consumers to reduce fake news on their systems. For example, both Facebook and Google are removing fake news sites from their advertising platforms on the grounds that they violate policies against misleading content. Further, Facebook has taken steps to identify fake news articles, flag false articles as disputed by third party fact-checkers, show fewer potentially false articles in users' news feeds and help users avoid accidentally sharing false articles by notifying them that a story is disputed by third parties before they share it. Facebook chief executive Mark Zuckerberg had initially disputed allegations that fake news spread on the social media had tilted the election for Trump. According to him, more than 99 per cent of what people see on Facebook authentic. But later Zuckerberg joined Google in taking the most serious steps to crack down on purveyors of phony stories by cutting off a critical source of funding — the ads that online platforms have long funneled to creators of popular content.

The move has raised new questions about long-standing claims by Facebook, Google and other online platforms that they have little responsibility to exert editorial control over the news they deliver to billions of people, even when it includes outright lies, falsehoods or propaganda that could tilt elections. Such claims became increasingly unsustainable amid reports that News Feed and Trending Topics, two core Facebook products, had promoted a number of false, misleading political stories, such as the above cited article saying Pope Francis had endorsed Trump, which was shared by over 100,000 users. The number one Google hit for the search "final election count" during the US presidential elections last year was an article from a relatively unknown website claiming that Trump had won the popular vote by 700,000 votes.

Studies on Fake News

To understand the gravity of the fake news phenomenon in recent global scenario, it would be important to understand the trends in academic investigation into fake news. In "Displacing Misinformation about Events: An Experimental Test of Causal Corrections", Brendan Nyhan and Jason Reifler argue that misinformation can be very difficult to correct and may have lasting effects even after it is discredited. One reason for this persistence is the manner in which people make causal inferences based on available information about a given event or outcome. As a result, false information may continue to influence beliefs and attitudes even after being debunked if it is not replaced by an alternate causal explanation.

In "Rumors and Health Care Reform: Experiments in Political Misinformation", Adam J. Berinsky explores belief in political rumors surrounding the health care reforms enacted by Congress in 2010. Refuting rumors with statements from unlikely sources can, under certain circumstances, increase the willingness of citizens to reject rumors regardless of their own political predilections. Drawing upon research from psychology on 'fluency' — the ease of information recall — this article argued that rumors acquire power through

familiarity. Attempting to quash rumors through direct refutation may facilitate their diffusion by increasing fluency.

“Rumors and Factitious Informational Blends: The Role of the Web in Speculative Politics” by Andrew Rojecki and Sharon Meraz show that the World Wide Web has changed the dynamics of information transmission and agenda-setting. Facts mingle with half-truths and untruths to create factitious informational blends (FIBs) that drive speculative politics. They find that the web is not sufficient alone for spreading misinformation, but it leads the agenda for traditional media. They find no evidence for equality of influence in network actors.

“Analyzing How People Orient to and Spread Rumors in Social Media by Looking at Conversational Threads” by Arkaitz Zubiaga, et al shows, as breaking news unfolds people increasingly rely on social media to stay abreast of the latest updates. The use of social media in such situations comes with the caveat that new information being released piecemeal may encourage rumors, many of which remain unverified long after their point of release. Little is known, however, about the dynamics of the life cycle of a social media rumor. They show that the prevalent tendency for users is to support every unverified rumour.

“Deception Detection for News: Three Types of Fakes” by Victoria L. Rubin, Yimin Chen and Niall J Conroy discusses a fake news detection system aims to assist users in detecting and filtering out varieties of potentially deceptive news. The prediction of the chances that a particular news item is intentionally deceptive is based on the analysis of previously seen truthful and deceptive news. They discuss three types of fake news, each in contrast to genuine serious reporting, and weighs their pros and cons as a corpus for text analytics and predictive modeling. Filtering, vetting, and verifying online information continues to be essential in library and information science (LIS), as the lines between traditional news and online information are blurring.

In “When Fake News Becomes Real: Combined Exposure to Multiple News Sources and Political Attitudes of Inefficacy, Alienation, and Cynicism”, Meital Balmas assesses possible associations between viewing fake news (i.e., political satire) and attitudes of inefficacy, alienation, and cynicism toward political candidates. It was also demonstrated that perceived realism of fake news is stronger among individuals with high exposure to fake news and low exposure to hard news than among those with high exposure to both fake and hard news. Overall, this study contributes to the scientific knowledge regarding the influence of the interaction between various types of media use on political effects.

“With Facebook, Blogs, and Fake News, Teens Reject Journalistic ‘Objectivity’” by Regina Marchi examines the news behaviors and attitudes of teenagers, an understudied demographic in the research on youth and news media. Based on interviews with 61 racially diverse high school students, it discusses how adolescents become informed about current events and why they prefer certain news formats to others. The results reveal changing ways news information is being accessed, new attitudes about what it means to be informed, and a youth preference for opinionated rather than objective news. This does not indicate that young people disregard the basic ideals of professional journalism but, rather, that they desire more authentic renderings of them.

Indian Examples

Back home in India, which seems to have become the new hub of fake news, misinformation spreads like wildfire, damaging companies and individuals alike. Right-wing groups and religious fundamentalists in the country pump in gigabytes of fake news

online which get penetrated offline channels as well. In this geography, WhatsApp is a big resource for fake information.

Just a few months ago, there was news doing rounds that the new rupee notes being printed after the demonetisation drive will feature a technology to help the fight black economy. A “nano-GPS chip” will allow authorities to track these notes anywhere in the world. Many media units took the story seriously. It was broadcast on Zee News TV, prompting the Reserve Bank of India to interfere and clarify that the news was fake. Another fake news was that of a Government move where people would be able to open bank lockers only under supervision by a government official.

Cost to Companies

Fake news impacts corporates as well. A good example is how fake news affected global drinks giant Pepsi. During Q4 2016, Pepsi’s average sentiment score (which reflects its popular appeal) was slightly above neutral (5.5*), indicating that the company was generally perceived positively in this market. However, there is a clear dip on 13th November, which is directly linked to the publication of the fake quotes in a widely-shared piece on The Last Refuge. This represents a 35 per cent fall below the average US sentiment score during Q4 and shows it was significantly ahead as the single most damaging incident for Pepsi.

This shows there was a clear impact on Pepsi’s domestic reputation, but how did the issue filter through to the company’s international reputation? In the weeks leading up to the fake news incident, Pepsi’s stock price averaged around \$106.58. Pepsi’s stock price took a significant hit on 10th November, the day the fake quotes initially started circulating. In the weekend that followed, the quotes were widely shared on social media, resulting in a further decline in share price when the markets re-opened on the 14th November. In the weeks following the circulation of the fake quotes, there is a clear difference between Pepsi’s sentiment trend and its stock price.

The sentiment towards Pepsi recovered well within five days, and its subsequent average reputation score has been higher than the months leading up to the fake news story. However, Pepsi’s stock price continued to decline for almost three weeks, before it began its recovery at the start of December. Even a month after the quotes were recognised as false, Pepsi’s stock price still trails its previous average. This indicates that if it is quickly refuted fake news may not cause lasting reputational damage, but the subsequent impact on stock price can take longer to restore.

And that's why digital marketing companies, corporates and news organisations are now brainstorming frantically to filter and fume fake news. Granted, it's not an easy task given the challenges fake news poses to human intelligence, in terms of identifying and classifying sources of news, fact-checking claims and verifying quotes and numbers. But it seems humans have found a suitable ally in artificial intelligence, which can help us trace and trash fake news.

The Numbers Game

Armed with Big Data analytics, AI works in many layers here. At the outset, it does what it does best: find patterns. Most fake news follow similar patterns. They sensationalise even trivial information, skip citing sources for numbers and are first beamed from websites that lack credibility. AI tools can sift through millions of webpages in real time and set off alarm bells if they detect what could be cooked up news. That said, how 'exactly' AI works against fake news? For starters, there are a few tangible steps. It starts with rating webpages.

The AI programme will run a check in the news sources' URL and try to analyse its reputation. Of course an original news item from, say, a Financial Times is far more acceptable than a news report from an unknown portal that is produced from one of the content cottage industries in Macedonia. As the algorithm gets perfect, news organisations can have a repository of trustable sources of news and the rating process will get fine-tuned and will become faster.

The next step is crunching numbers. This is especially important in business news. Umpteen numbers of new items appear on the web detailing, falsely, financial performances of companies. These news pump half-baked data. AI helps analyse these numbers and put them in perspective and find correlations that help us ascertain their reliability. Language mapping is the next crucial stage in filtering fake news out. AI tools help detect unwanted sensationalism and wordplay in news and alert readers. Analysts have observed that fake news makers are mostly amateur content creators working for money or pushing a cause. They rarely manifest restraint when it comes to use of language. AI tools, especially those with NLP (natural language processing) capabilities can help here.

AI also helps in areas such as stance detection. That means to scan the copy and find out whether the author the story or the agency that has reported the news is in favour of or against the target of the news. This inference will help trace ulterior motives, say experts. Facebook, which is one of the most popular social media platforms where fake news spreads, is already using AI to fight fake news. The other two big players, Google and Twitter, are also developing and integrating AI plus Big Data tools into their information dissemination infrastructure.

AI at Play

Other than the internal programmes of the big-ticket social media companies, several other small players have developed AI solutions that help check fake news. NewsWhip, a social media monitoring firm from Dublin, is helping several media companies sieve out fake news. Crowdtangle, a content discovery firm, also offers similar service. GoogleTrends, Hoaxy, PHEME, Snopes are some of the companies that offer AI-Big Data solutions to fight fake news.

Even the academic world has sat up and taken note of the fake news woes. In the US, the WVU Reed College of Media has tied up with the computer science department at the WVU Benjamin M Statler College of Engineering and Mineral Resources, to host an AI Vs fake news course at its Media Innovation Center. Several other universities are following suit.

Experts expect AI in checking fake news will see more R&D activity given the way governments are pushing for clean news. Germany, for one, has approved plans to penalise social media companies more than 50 million dollars if they post fake news.

But one of the biggest challenges these companies are facing is, of course, of time. Analysing fake news real time is a big challenge. It requires highly potent machine learning skills and rapid-fire analytics for data veracity. Here, the companies hope crowdsourcing will help them significantly. Communities and developers spread across the globe are now developing tools, small and big, to track fake news and alert readers and news media. Big players like Google want to help compile and coordinate these efforts.

Another worry is algorithm going wrong. AI experts say there are possibilities, statistically speaking, for AI tools to produce two kinds of bad results -- false negative and false positive. Simply put, this means an AI tool could stamp a fake news item as not fake

and term real news as fake. But that's just an initial hiccup. As we move on, and with more and more data and news getting cleansed, we will soon be able to kick in a world free of fake news. And, hey, that's not fake news!

References

- Balmas, Meita. (2014). When Fake News Becomes Real: Combined Exposure to Multiple News Sources and Political Attitudes of Inefficacy, Alienation, and Cynicism. *Communication Research*.
- Berinsky, Adam J. (2015). Rumors and Health Care Reform: Experiments in Political Misinformation, *British Journal of Political Science*. doi: 10.1017/S0007123415000186.
- Berkowitz, Dan & Schwartz, David Asa. (2016). Miley, CNN and The Onion . *Journalism Practice*.
- Brewer, Paul .; Young, Dannagal Goldthwaite; & Morreale, Michelle. (2013). The Impact of Real News about 'Fake News': Intertextual Processes and Political Satire, *International Journal of Public Opinion Research*.
- Gupta, Aditi; Lamba, Hemank; Kumaraguru, Ponnurangam; & Joshi, Anupam. (2013). Faking Sandy: Characterizing and Identifying Fake Images on Twitter During Hurricane Sandy, *Proceedings of the 22nd International Conference on World Wide Web*. doi: 10.1145/2487788.2488033.
- Marchi, Regina. (2012). With Facebook, Blogs, and Fake News, Teens Reject Journalistic 'Objectivity', *Journal of Communication Inquiry*.
- Nyhan, Brendan & Reifler, Jason. (2015). Displacing Misinformation about Events: An Experimental Test of Causal Corrections , *Journal of Experimental Political Science*.
- Rojecki, Andrew & Meraz, Sharon. (2016). Rumors and Factitious Informational Blends: The Role of the Web in Speculative Politics. *New Media & Society*.
- Rubin, Victoria L.; Chen, Yimin; & Conroy, Niall J. (2015). Deception Detection for News: Three Types of Fakes, *Proceedings of the Association for Information Science and Technology, Vol. 52*.
- Weeks, Brian E. (2015). Emotions, Partisanship, and Misperceptions: How Anger and Anxiety Moderate the Effect of Partisan Bias on Susceptibility to Political Misinformation, *Journal of Communication*.
- Zubiaga, Arkaitz et. Al. (2016). Analyzing How People Orient to and Spread Rumors in Social Media by Looking at Conversational Threads, *PLOS ONE*.

Web Resources:

<https://www.ft.com/content/64fdb23e-badc-11e6-8b45-b8b81dd5d080>

<https://www.wired.com/2017/02/veles-macedonia-fake-news/>