

Introduction

How does the web facilitate the spread and strengthening of disinformation, and what features allow of disinformation explain its virality? In this project, I wish to carry out an investigation into this topic, and learn more about how the internet not only facilitates the spreading of false information, but also reinforces it in many peoples' minds.

At the start of 2023, a total of **5.16 billion** people around the world used the internet, which is equivalent to **64.4 percent** of the world's total population. This is a large jump from 5 years ago in 2018, when the total amount of people that used the internet was **3.98 billion, equivalent to 51.9%** of the world's population at the time.ⁱ The penetration of the internet is undeniably growing, with social media in particular growing at a rapid pace with a 79.1% jump in social media users in just five yearsⁱⁱ. With the spectacular rise of the internet, however, comes a hidden danger - more fertile ground for disinformation.

Misinformation is false or inaccurate information—getting the facts wrong regardless of intent. Disinformation is similar, it is false information which is deliberately intended to mislead—intentionally making the misstating factsⁱⁱⁱ. The key distinction is intent.

In recent times, the issue of misinformation has become increasingly apparent and problematic. In a study conducted and published by the EU, it was found that trust in EU institutions such as healthcare, police, and news media have been steadily declining over the past 2 years, with the study alluding to over-reliance on social media for news as the potential culprit^{iv}. In fact, it was found that in 2021, a little under half of all U.S adults got their news from social media 'often' or 'sometimes', with almost a third getting their news from Twitter^v.

From the spread of climate change scepticism to most recently anti-vax campaigns against the COVID-19 vaccine, we have seen time and time again that collective action on worldwide issues, such as the COVID-19 pandemic, have been repeatedly hindered, slowed and impeded by disinformation^{vi}.

The internet has played a tremendous part in distributing this false information with opaque, difficult-to-control algorithms that determine peoples' social media feed. What I also find interesting however, is why is it so difficult to eradicate this false information. Using the COVID-19 pandemic as an example, it is notoriously difficult persuading antivaxxers to drop their false beliefs, because of well-known cognitive biases such as confirmation bias^{vii}. I wish to know the role the internet plays in instilling and reinforcing false beliefs in people, as well as what can be done to mitigate these effects.

Research Questions

- How well are people able to detect online posts with potentially inaccurate facts?
- Does the above answer change depending on where people encounter these posts from?
- What online tools, platforms or posts are most likely to influence and strengthen peoples' beliefs on important topics?

Objectives

Through this 6-week research project, I aim to produce a detailed report answering the above research questions using my own findings, and with meta-surveys of other studies' data. I wish to base the report off the antivax community in particular, and analyse the types of posts shared among the community there.

Moreover, I wish this project can help highlight how easy it is to be fooled online, and the importance of caution and critical thinking while browsing the internet in order to make better and more sound decisions.

Methodology

Weeks 1 - 2:

I plan to conduct large meta-surveys on vaccine sentiment using the data collected in other vaccine disinformation studies. At the same time, I will begin collecting and gathering datasets on vaccine disinformation via mechanical scraping and through sources provided by my supervisor. Thus, the first to second week will consist of compiling data from other studies done in this topic, with some listed in the bibliography, as well as collecting raw vaccine disinformation.

The data compiled will help support the work in the weeks 3, 4 and 5, as well as help answer the first main research question.

Weeks 3 - 5:

The focus will now shift towards critically analysing the data on disinformation. This includes evaluating the virality of disinformation through tools like Newswhip, to understand what features allow it to easily spread online. The next tool of analysis will include utilising components built for the project Provenance. This includes using different tools to analyse various aspects of articles and posts on social media, such as the writing quality, tone and if the information is reported in other sources. There is also potential to use a machine-learning approach in the analysis, where the main features of disinformation will be evaluated more critically.

Here, it is also possible to use the facilities provided by the ADAPT research centre, to further compile information regarding the posts most frequently shared in the antivax community.

Weeks 6:

The final week will consist of organising, interpreting, and evaluating the results of the last 5 weeks in order to determine an overall conclusion to the outlined research questions. I will also use the qualitative data collected from analysing the antivax community and compare them with conclusions drawn from other disinformation experts in Ireland and internationally through other studies conducted.

Research Supervisor

The role of my research supervisor is to ensure my methods follow an ethical and scientifically sound approach, perhaps offer advice on what could be improved, or suggest any additional things to research. It is also possible Professor Conlan can grant me access to ADAPT research facilities, and bring me in contact with a team of PhD students who are also working in a similar field of research to this project.

Contribution

I hope this experiment can provide a larger insight into the types of posts regularly shared in the antivax community, and thus show how this type of content contributes to the further spreading and strengthening of disinformation online. This will be important to share as I believe this research project could play a role in highlighting how much disinformation is on the web, and what steps are needed to contain its spread.

Pre-Clearance Requirements

I will likely require training in order to analyse the content regularly shared in antivax communities, and for categorising people based on their behaviour.

Bibliography

Examples of study data to be used in meta-survey:

- [Acceptance of a Covid-19 vaccine is associated with ability to detect fake news and health literacy](#)
- [Fake News and Covid-19 in Italy: Results of a Quantitative Observational Study](#)
- [Quantifying the Effects of Fake News on Behavior: Evidence From a Study of COVID-19 Misinformation](#)

ⁱ DataReportal – Global Digital Insights. (n.d.). *Digital Around the World*. [online] Available at: <https://datareportal.com/global-digital-overview#:~:text=A%20total%20of%205.16%20billion>

ⁱⁱ Dixon, S. (2022). *Number of Social Media Users Worldwide 2010-2021*. [online] Statista. Available at: <https://www.statista.com/statistics/278414/number-of-worldwide-social-network-users/>

ⁱⁱⁱ [Dictionary.com](#) (2020). 'Misinformation' vs. 'Disinformation': Get Informed On The Difference. [online] [Dictionary.com](#). Available at: <https://www.dictionary.com/e/misinformation-vs-disinformation-get-informed-on-the-difference/>

^{iv} Eurofound. (n.d.). *Trust in institutions continues to fall in EU, despite declining*. [online] Available at: <https://www.eurofound.europa.eu/news/news-articles/trust-in-institutions-continues-to-fall-in-eu-despite-declining-unemployment-and-phasing-out-of>

^v Walker, M. and Matsa, K.E. (2021). *News Consumption Across Social Media in 2021*. [online] Pew Research Center's Journalism Project. Available at: <https://www.pewresearch.org/journalism/2021/09/20/news-consumption-across-social-media-in-2021/>

^{vi} Pierri, F., Perry, B.L., DeVerna, M.R., Yang, K.-C., Flammini, A., Menczer, F. and Bryden, J. (2022). Online misinformation is linked to early COVID-19 vaccination hesitancy and refusal. *Scientific Reports*, [online] 12(1), p.5966. doi:10.1038/s41598-022-10070-w

^{vii} Swingle, C.A. (2018). How Do We Approach Anti-Vaccination Attitudes? *Missouri medicine* , [online] 115(3), pp.180–181. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6140172/>