

The rise of mainstream social networks like Twitter and Facebook makes it easier for misleading, false, and agenda-driven information to quickly and seamlessly spread online, influencing people on their opinions. Moreover, the increased engagement of fringe communities, such as Reddit and 4chan, compounds the problem as their users initiate and propagate alternative information not only within their own communities, but also to other communities and social media platforms across the Web. These platforms thus constitute an important piece of the modern information ecosystem which has not been studied as a whole. In this paper how mainstream and alternative news flows between these platforms are discussed. The results indicate that alt-right communities within 4chan and Reddit can have a surprising level of influence on Twitter, providing evidence that “fringe” communities may often be succeeding in spreading these alternative news sources to mainstream social networks and the greater Web.

False news can be propagated in so small part via the use of “alternative” news sites like Infowars and “fringe” Web communities like 4chan. Due to the negligible cost of distributing information over social media, fringe sites can quickly gain traction with large audiences. At the same time, the explosion of information sources also hinders the effective regulation of the sector, while further muddying the water when it comes to the evaluation of news information by readers. The manner in which they proliferate throughout the Web is still unknown. Very little work provides a holistic view of the modern information ecosystem. This knowledge is crucial to understand the risks associated with alternative news and to design appropriate detection and mitigation strategies.

Authors findings indicate that Twitter, Reddit, and 4chan are used quite extensively for the dissemination of both alternative and mainstream news. By utilizing a statistical model for influence, Hawkes processes, authors show that each of the platforms (and in the case of Reddit, sub-communities) have varying degrees of influence on each other, and this influence differs with respect to mainstream and alternative news sources.

To measure the influence among popular web communities the authors only consider news propagation on the Web communities as dictated by the posting of URLs from mainstream and alternative news sources. This is a limitation of the work, as authors did not account for the content of the information, which can exist and propagate in various forms, such as textual claims, images and videos. The aforementioned limitation, pinpoints the complexity of the problem as discerning similarity of information that exists in various forms (e.g., distinguish if an image delivers the same information as a textual claim in an article) is not a straightforward task.

Some observations from the paper is Specific sub-communities within Reddit drive the dissemination of both alternative and mainstream news, in general, news domain popularity is similar for both alternative and mainstream domains in the three platforms with some exceptions. Twitter users are promoting more aggressively alternative news when compared to mainstream news. Twitter users share a greater alternative news ratio when compared to users that post in the 6 selected subreddits.

While doing temporal analysis it is found that the specific sub-communities are heavily utilized for the dissemination of alternative news in US election.

Authors study the Hawkes process in the subreddit granularity in order to get a better understanding of the various platforms and subreddits. They aim to examine how these platforms and subreddits influence each other.

In this work the authors showed how the mainstream and alternative news media influence each other. The authors found that users on the different platforms prefer different news sources, especially when it comes to alternative ones. They also found that the interplay between platforms manifests in subtle, yet meaningful ways. For example, of all the platforms and subreddits, Twitter by far has the most influence in terms of the number of URLs it causes to be posted to other platforms, and contributes to the share of alternative news URLs on the other platforms to a much greater degree than to the share of mainstream URLs.

Naturally, the work has some limitations. Since authors only look at the posting of third party URLs, we miss other modalities of diffused information. For instance, there may be a lot of direct information transferred from 4chan occurring via screenshots, due to its ephemeral nature. Also, they did not examine the content of the news stories shared. As part of future authors have expressed their desire to use advanced image processing and natural language processing to gain more insight on this.