



Social Media Junk News on Hydroxychloroquine and Trust in Science

Coronavirus Misinformation Weekly Briefing 03-08-2020

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SUMMARY

Given the evolving nature of the coronavirus pandemic—and public understanding of the crisis—we provide a weekly briefing about the spread of coronavirus misinformation across multiple social media platforms. For the seven days prior to 30-07-2020 we find:

- The social media distribution network of all coronavirus articles from the top fifteen mainstream news outlets reached over three billion social media users this week, achieving much greater distribution than state-backed and junk health news sources. But the average article from state-backed sources reached over 8,900 users, while the average article from mainstream sources reached slightly above 4,400 users and the average junk health article reached above 3,200 users.
- Similarly, on aggregate content from mainstream sources gets the largest amount of total user engagement. But on a per article basis, state-backed news receives 90 engagements and junk health news receives over 125, while average articles from mainstream sources get just above 25 engagements.
- In total, 30% of the engagement with non-mainstream information last week was with state-backed content. Furthermore, 41% of such engagements were with Chinese content, whereas 58% were with Russian content.
- Thematically, the key junk health news theme was pushing damaging narratives about the efficacy of hydroxychloroquine as a treatment for the coronavirus.

INTRODUCTION

Using an actively curated list of major sources of junk health news and state-backed sources, we track the spread of misleading, polarizing, and inflammatory coronavirus content on social media. Sources from state-backed media include information operations and editorially controlled national media organizations. Other domestically and independently-produced sources also act as politically motivated sources of misinformation.[1] All such media sources play a major role in the online information ecosystem and generate engagement from millions of social media users. We define junk health news and information sources by evaluating whether their content is extremist, sensationalist, conspiratorial, or commentary masked as news. See our [Methodology FAQ](#) for further details.

We currently track 142 junk health news websites and 22 state-backed media outlets that are actively publishing misleading information about the coronavirus pandemic—164 in total. From these we select the top fifteen most engaged state-backed and junk news sites respectively for comparison. We examine how successful they are in terms of distributing their content on social media and generating engagement and compare this to 15 major sources of credible health news and information. Our data comes from the APIs of Facebook, Instagram, Reddit, Twitter, Telegram and YouTube. Facebook and Instagram are accessed through the CrowdTangle platform. Additional analytics allow us to benchmark and track how users spread and engage with misleading information.

DISTRIBUTION & ENGAGEMENT

Understanding the flow and impact of coronavirus misinformation requires measuring how users distribute and engage with that content over social media. We analyze such patterns for the period from 23rd of July to 30th of July and offer comparisons between the trends for junk health news and state-backed sources, and the trends for fifteen prominent English-language sources of credible news and information.

The “social distribution network” of an outlet is the sum of follower counts of the Facebook groups and pages, subreddits, Instagram and Twitter accounts that have shared at least one of the sources’ articles over the previous week. On YouTube, this distribution network is counted as a channel’s number of subscribers. This provides an impression of the capacity that sources have for distributing their content. It is important to emphasize that not all of these followers may have been reached by this content—only the social media firms themselves could confirm this. We use “engagement” to refer to the sum of actions that users of social media took in response to content shared by the distribution network. On Facebook, users may comment on content, share it, and react by signaling like, love, laughter, anger, sadness, or amazement. On Twitter, users can retweet, comment, and signal their favorite tweets by clicking on the heart button. On Reddit, this is the sum of comments, cross posts, scores, and awards on posts containing the links to articles from our watch list. On Instagram, this is the sum of likes and comments. On Telegram, this is the number of views. On YouTube, this is the video view count as well as comment and like

reactions. Our overall engagement measure is the sum of all these actions. We should say that we are not able to distinguish between genuine and inauthentic accounts or acts of engagement.

We can offer some broad observations about how English-language social media users interact with content from junk news health sources and state-backed agencies. Overall, 30% of the engagement with non-mainstream sources we observed this week was from state-backed sources. Further, 40% of engagements with state-backed media were engagements with Chinese content, whereas 58% was with Russian content. Finally, 1% was with Turkish content.

Figures 1 and 2 reveal the distributional reach for the published content from mainstream, junk health news, and state-backed sources, both in total for the week and as an average per article. This week, the top fifteen mainstream sources achieved over five times the total distribution of state-backed and junk health news sources, respectively. However, the average article from state-backed sources still has a larger distribution network, this week reaching a potential audience of over 8,900 users, whereas average mainstream news articles reach slightly above 4,400 users. Junk news articles reach an average audience of just over 3,200.

Figures 3 and 4 reveal the levels of engagement that sources receive for their articles. Both junk health news and state-backed news achieved low total engagement of about 3 million and 1 million respectively. By contrast, mainstream news sources achieved over 13 million engagements. Junk health news has reached over 6 million total engagements in previous weeks.[2] On average, junk health news generated the most engagement this week, reaching over 125 engagements per article, whereas state-backed media achieved an average of just above 90 engagements per article.

Figure 5 displays the trends over the last four weeks. Mainstream news sources typically achieved over one million engagements on most days, reaching above seven million on some. Junk health news and state-backed media seldom reach that threshold. On a per-article average, however, mainstream news sources struggle to match the engagement generated by junk health news and state-backed outlets.

KEY NARRATIVES

We also conduct a thematic review of articles published by both these junk health news and state-backed sources. Previously, we found that state-backed and junk health news sources targeting English speakers generally politicize health news and information by criticizing democracies as corrupt and incompetent.[1] We have also found that Russian outlets, targeting French and German speakers, have consistently emphasized the flaws of Western democratic institutions, and Turkish outlets, targeting Spanish speakers, have promoted their global leadership in battling the pandemic.[3]

Figure 1: Total Distribution Network, All Articles (Billions)

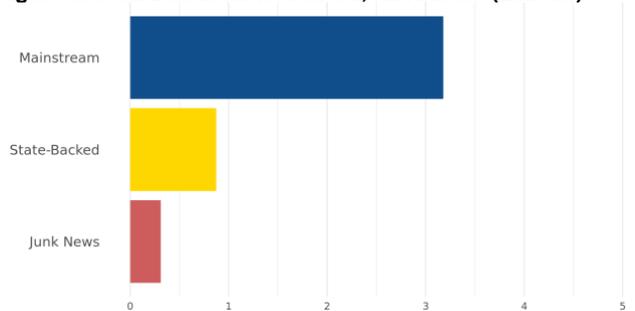


Figure 2: Distribution Networks, Average per Article

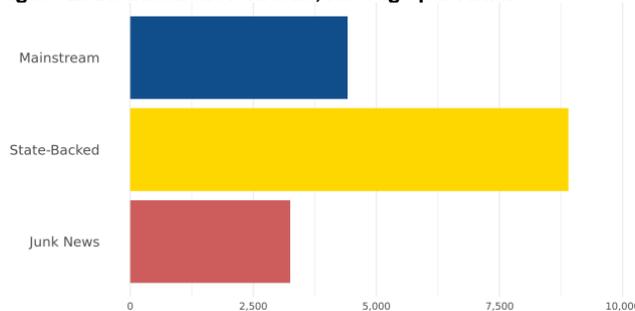


Figure 3: Total User Engagement, All Articles (Millions)

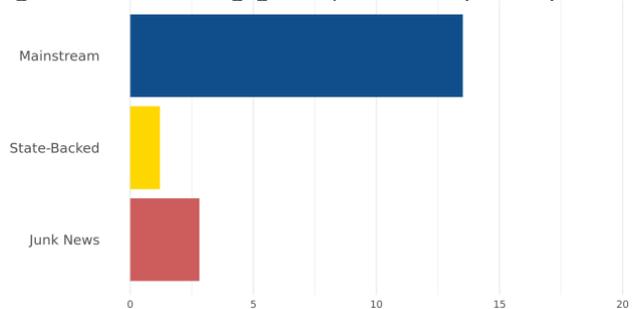


Figure 4: User Engagement, Average per Article

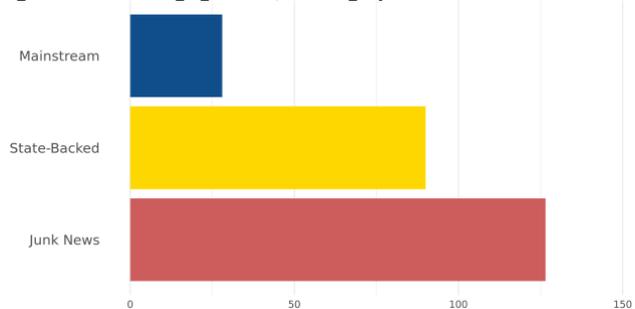
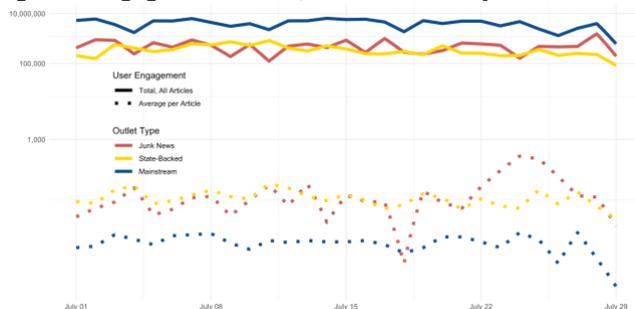


Figure 5: Engagement Trends, for the last 28 days



Source: Based on authors' calculations using data collected 23/07/2020-30/07/2020.

Note: Distribution refers to the sum of the subscriber count of YouTube channels and follower count of Twitter and Instagram accounts, subreddits, and Facebook groups/pages sharing content. Engagement refers to the sum of all reaction types on Facebook, Instagram, Reddit, Twitter, and YouTube.

Last week, there was one key junk health news theme, the undermining of confidence in state health officials. This week, there was also one key junk health news theme: a *Breitbart* video of a group of doctors called America's Frontline Doctors (henceforth AFD) promoting the use of hydroxychloroquine as a treatment for the coronavirus.

A *Breitbart* article with over 148,000 engagements details how the video, originally a livestream to the news outlet's Facebook page, was removed by Facebook.[4] The video was subsequently also removed by other major platforms, including YouTube, Twitter, and Vimeo. The article contends that the removals amounted to censorship, an act deemed more egregious by the fact that the video was the "top-performing Facebook post in the world" at the time at which it was taken down. The article frames this in terms of an ongoing mission of suppression by "Big Tech". However, a follow-up recording of the same group of doctors produced in response to the removals remains live on YouTube. An article from *the Blaze* with over 141,000 engagements focusing on the suspension of Donald Trump Jr.'s Twitter account, after having uploaded the video, was written along similar lines.[5] A *Daily Wire* article with over 73,000 engagements also reported on the removal.[6] Finally, a *Political Insider* article with over 28,000 engagements had a similar theme, with more explicit claims about censorship and the restriction of freedom.[7]

The video is rife with health disinformation, much of which has been debunked by other media outlets and fact-checking organizations.[8], [9] Only a subset can be discussed in the space available for this briefing. The video and the articles from *The Blaze*, *The Daily Wire*, and *Political Insider* above dismiss the current scientific consensus as "fake science". The video's primary example is a paper published in the *Lancet* medical journal that was subsequently retracted.[10] The AFD claimed that the paper was retracted because the data was fabricated, which is at best a willful misrepresentation of the decision. However, the reason given for the retraction of the paper in the *Lancet* is that the collaborator, Surgisphere, refused to transfer "the full dataset [that was used for analysis], client contracts, and the full ISO audit report to their servers for analysis as such transfer would violate client agreements and confidentiality requirements." Therefore, the reviewers could not complete their process and decided to withdraw the paper.

Another mode of attack has involved the questioning of the validity and need for medical statistics altogether. Dr. Immanuel, one of the AFD doctors, dismissed data collection as an important activity in improving clinical treatments and further dismissed the notion of double-blind trials. Double-blind design is important in order to properly randomize any statistical experiment, and this is especially true for medical trials where results can directly affect the treatment of many people around the world.

Very closely related to the narratives asserted by the *Breitbart* video of the AFD was an argument in an article by *The Blaze*, with over 79,000 engagements. This article once again promoted the use of hydroxychloroquine.[11] This time, the claims were made on the basis of an opinion article written by Professor Harvey A. Risch at the Yale School of Public Health, who advocates the use of hydroxychloroquine as a treatment.[12] The article from *The Blaze* again pushes the narrative, contrary to the current medical consensus, that a "correct understanding of the science, has been pushed to the sidelines". The opinion piece puts forth some dubious arguments, including at least one argument that conflates correlation and causation. Professor Risch argues that in northern Brazil purchases of hydroxychloroquine and azithromycin are associated with a significant drop in the region's mortality rate. Professor Risch makes no further statement about the possibility of any confounding causal factors. This argument about a "natural experiment" in Brazil was cited and therefore amplified in the article from *The Blaze*.

Furthermore, the opinion piece from Professor Risch draws upon, as evidence, a paper he published in May 2020 that argued for hydroxychloroquine treatment in tandem with azithromycin.[13] However, this article has been strongly criticized by other researchers responding in the same journal.[14] Peiffer-Smadja and Costagliola write that Professor Risch conducted an "uncritical appraisal of the available evidence", expressing "surprise that such a viewpoint could be accepted in this journal". Peiffer-Smadja and Costagliola also argue that one study Professor Risch rallies upon to support his claim cannot be generalized to include outpatients because outpatients were not included in the study, and that other studies that he cited were unpublished and of even lower quality.

It is worth emphasizing that none of the authors of this briefing are medical professionals. We recognize that the scientific understanding of the coronavirus is constantly evolving, and hence so may the evidence and consensus on hydroxychloroquine or other treatments. Nevertheless, in this briefing and in previous briefings we have worked to highlight narratives that have been consistently antithetical to the best scientific and public health knowledge and advice about the coronavirus. Hydroxychloroquine is not recognized as an effective treatment of the coronavirus.[15]–[18]

CONCLUSION

We measure the social distribution networks of Facebook, Instagram, Reddit, Twitter, Telegram and YouTube and the levels of engagement with content related to the coronavirus pandemic. Sources of junk health news and information have distribution networks reaching hundreds of millions of social media users. Junk health news websites generate huge amounts of content that is widely disseminated and receives significant engagement.

RELATED WORK

Read [our review of state-backed English language media reporting](#) on Coronavirus. Find our previous weekly briefings [here](#).

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ABOUT THE PROJECT

The [Computational Propaganda Project](#) (COMPPOP), based in the [Oxford Internet Institute](#) and University of Oxford, involves an interdisciplinary team of social and information scientists researching how political actors manipulate public opinion over social networks. This work includes analyzing how the interaction of algorithms, automation, politics, and social media amplifies or represses political content, disinformation, hate speech, and junk news. *Data Memos* present important trends with basic tables and visualizations. While they reflect methodological experience and considered analysis, they have not been peer reviewed. *Working Papers* present deeper analysis and extended arguments about public issues and have been collegially reviewed. Our *Coronavirus Misinformation Weekly Briefing* provides regular reports on the most prominent social media trends from the prior week. COMPPOP articles, book chapters, and books are significant manuscripts that have been through peer review and formally published.