Graphika

The COVID-19 "Infodemic"

A Preliminary Analysis of the Online Conversation Surrounding the Coronavirus Pandemic

The COVID-19 "Infodemic"

Report

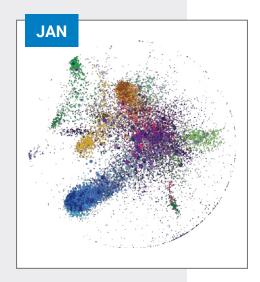
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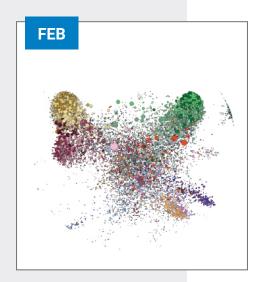
Executive Summary

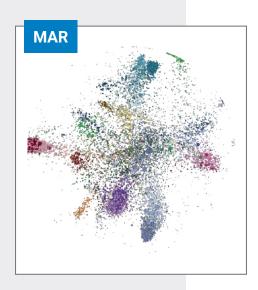
This report represents a preliminary analysis of data analyzed by Graphika on the global online conversation surrounding the coronavirus pandemic. The unprecedented volume of misinformation around the coronavirus, spreading both across platforms and across the globe, has yielded unique network structures and has illustrated the virality of misand disinformation in crisis situations. A global cacophony of voices is communicating conflicting and politicized information about the coronavirus, further amplified by the organic spread of misinformation from audiences eager to consume and share updates and advice on the coronavirus in a time of mass uncertainty.

In crisis situations, experts warn that online activity can mimic signals that would ordinarily be deemed suspicious: mass flooding of topicspecific content, consistent and frequent posting, viral hashtags, and fluctuations in new followers online as people scramble for more sources of information. 1 In conjunction with these behaviors, the prolonged uncertainty of the spread and duration of the virus has created a vast and complex network of coronavirus-related mis- and disinformation

This report covers four maps in our growing COVID-19 issue portfolio: three of these form the beginning of a "time series" of maps. Shown below, the series is a set of large-scale and granular network maps seeded on the same mainstream signals associated with general conversation around coronavirus, with data collected at monthly intervals between December 19, 2019 and March 17, 2020. These maps form the basis of a chronological series that allows rigorous analysis of structural changes to this online conversation.

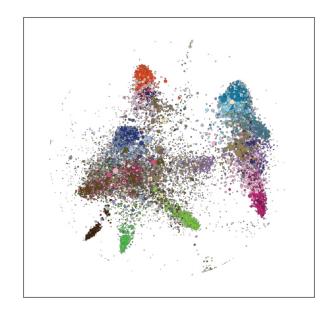






Coronavirus Disinformation

The fourth map included in this analysis was seeded specifically on disinformation-related and conspiratorial hashtags around coronavirus. The map therefore encompasses online communities that are leveraging the global conversation about coronavirus to propagate polarizing and at times blatantly false narratives.



A few key analytical highlights from these four maps are shared below:

The changes between Graphika's January, February, and March coronavirus maps (all seeded on the same set of terms) elucidate a conversation that is rapidly becoming more complex over time. The January and February maps have multipolar structures, with distinct and densely interconnected national communities, but the conversation becomes flooded with informational sources in March and demonstrates a general lack of cohesion. Groups of accounts from geographies such as Australia, Korea, Japan, and even China also become less prominent in the network structure around this time. Similarly, the large "mega cluster" of US right-wing accounts becomes diminished by the mainstreaming of the coronavirus conversation online over time.



A number of groups are leveraging the conversation around coronavirus to propagate racism and anti-immigration sentiment. Some of these communities focus upon the origins of the outbreak to spread anti-Chinese content, but **the French and Italian right-wing are determined to draw attention to immigration policy in their respective countries**. This content is most often shared via articles on clickbait "news" sites and expertly blends conspiratorial narratives with anti-establishment messaging.

Unsurprisingly, all maps contain a high proportion of conspiracy-focused content. At first, these conspiracy theories appeared to revolve around the causes of the outbreak, often by tapping into existing theories about "new world order" and "population control" and targeting influential figures like Bill Gates and George Soros. As the pandemic continued to spread to geographies in which communities that support these theories are particularly strong, conspiratorial content has become more closely focused on governmental responses to the outbreak.



There was a substantial overlap of accounts between the second coronavirus conversation map and Graphika's ongoing monitoring map on health misinformation communities, indicating that habitual sharers of health misinformation increased their share of voice in the coronavirus in February. The overwhelming popularity of homebrewed monitors and maps of the data associated with the outbreak and spread of the virus highlights a serious distrust of established and official sources of health information.² Some actors are pushing "secret home remedies," such as colloidal silver, and clusters from the French right-wing have been particularly vocal about a perceived government cover-up of chloroquine as a cure for the virus.

Graphika has also begun a systematic analysis of narratives designed to stoke geopolitical tensions, some of which emerge clearly in these four initial maps and are currently under further investigation. Initial insights into the messaging being propagated by pro-Kremlin voices in various geographies indicate a focus on undermining trust in global institutions and drawing attention to the failures of other governments, predominantly the Chinese response. Popular content in the anti-CCP and US right-wing clusters includes videos featuring Guo Wengui that claim the coronavirus is a bio-weapon³ and that the death toll has been underreported by the Chinese government.

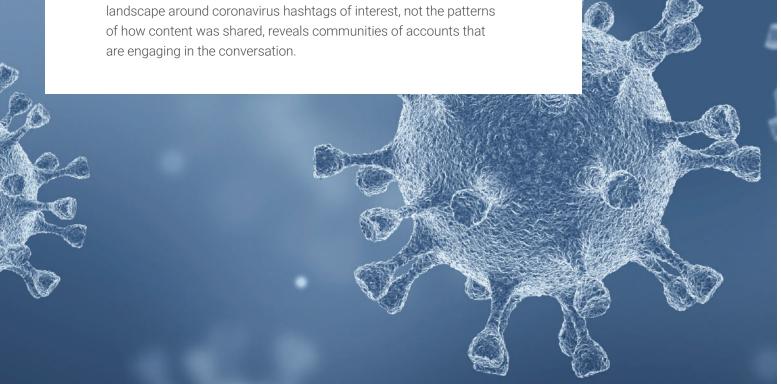


Chronological Mapping Series:

December 19 - March 17

Map Background

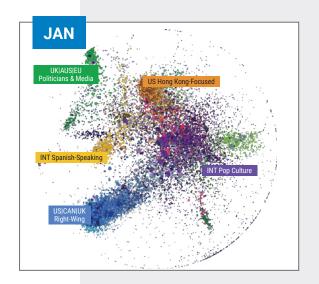
Graphika has produced a set of three network maps that capture the mainstream global conversation around coronavirus at monthly intervals. These maps were seeded on the same set of coronavirus hashtags, including #covid19 and #coronavirus, to allow a direct comparison in network structure and activity over time. Data collection began on December 16 last year - as such, these three maps can be seen as "snapshots" of the coronavirus conversation on Twitter in January, February, and March thus far. Accounts that used hashtags in the seedlist during the collection period were clustered with accounts with similar interests accounts based on their online activity. This process of mapping out the social

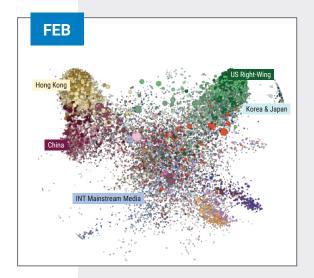


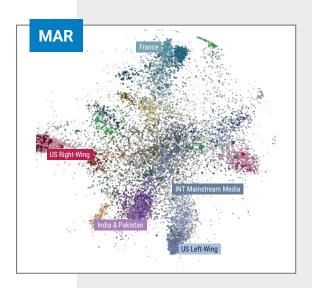
Who Is Involved in the Global Conversation Around Coronavirus, and How Has This Evolved Over the Past Three Months?

All three of the time series maps are visibly multipolar, with densely clustered poles and sparsely populated centers. This indicates that strongly interconnected communities are involved in the conversation despite its global scope and each geographic and ideological cluster has its own insular sources of information—there is little in the way of a shared, global source of information.

This lack of cohesion or "center" to the network is not unusual for a global conversation map, as dense clusters often denote national sub-communities. However, the first coronavirus map covers a time period in which the outbreak was largely contained to China, with the exception of cases reported in Thailand toward the end of January. During this time, the Chinese government and its various media outlets would be expected to form that core informational source. As has been noted in previous studies and reporting of health crises, historical distrust in governing bodies as reliable sources makes consensus from the medical and science community challenging, particularly in online spaces.⁵ This in turn creates voids of both information and data for bad actors to capitalize upon.6







⁴ https://web.archive.org/web/20200114084712/https://www.cdc.gov/coronavirus/novel-coronavirus-2019.html

https://www.usatoday.com/story/news/health/2019/04/23/vaccine-measles-big-phar-ma-distrust-conspiracy/3473144002/

⁶ https://datasociety.net/library/data-voids/

In terms of network evolution between the three maps in this series, there are a few notable changes.

First, as is obvious from the visualizations above, the US Right-Wing group was prominently involved in the coronavirus conversation in the January and February maps. Both these maps demonstrate what Graphika refers to as **mega clusters**, loud online communities with a high rate of interconnection. In terms of overall map volume, this group was the third largest in the January map, with 15.9%, and the largest in the February map, with 22.6%. However, in the March map this group becomes pushed to the periphery in both a network structural sense, in that it appears both less voluminous and less densely interconnected, and also in its proportion of total map volume, becoming the seventh largest group, with 6.1%.



The percentage of map tweets for the US Right-Wing groups also fell between February and March. Simultaneously, there was significant growth in the representation of mainstream and progressive accounts between the February and March maps, with international media outlets rising from 10% to 14%, and the US Left-Wing increasing by 11% of total map volume. By March, conspiratorial accounts and alt-right news sources like Zero Hedge and Breitbart were missing from the top mentions across this map and were replaced by influential Democrats such as Bernie Sanders and Alexandria Ocasio-Cortez and left-leaning journalists such as Jake Tapper and Chris Hayes.

In line with the trajectory of more mainstream voices becoming engaged in the conversation as the outbreak progressed, fringe voices became less influential in our maps over time. These changes could represent a mainstreaming of coronavirus conversation, which in turn makes the center of the map more highly concentrated, or the reduced share of a consolidated US Right-Wing community discussing coronavirus online. If the trend continues, this also could point to the positive impact of the efforts from social media companies, including Twitter, that worked to remove misinformation, such as Zero Hedge articles, from their platforms.⁷

 $^{^{7}\,}https://firstdraftnews.org/latest/how-social-media-platforms-are-responding-to-the-coronavirus-infodemic/$



Second, the volume of health and science outlets involved in the coronavirus conversation markedly decreased from January to February. Coronavirus appears to have become a "wedge issue" during this time, attracting more heavily politicized accounts from countries across the globe. Many accounts from these new national groups exclusively and constantly tweeted about coronavirus, some including the topic in their profile identity markers. This is mirrored on other platforms, for instance on Facebook where we saw groups changing their names to rebrand into COVID-19 centric groups, while they were previously groups focused on other political issues.

Accordingly, the volume of clickbait "news" sites providing coronavirus updates increased from January to February. In the February map the dedicated Coronavirus News group (5.8%), which is composed of accounts that follow these alternative and often poorly fact-checked media sources, was almost equivalent in size to the group of those following official health information sources (7.4%). This trend continued into the March map, where the Coronavirus News and US Medical Journals | Health Orgs | News groups were nearly equivalent in terms of total map volume, 0.8% and 1% respectively. Mainstream media outlets were the most heavily retweeted across all three maps in the time series.

Third, in each month, the online conversation map appears to reflect the physical trajectory of coronavirus infections across the globe; when the first cases of coronavirus arrive in a country coincides with when they rise to prominence in the online conversation. This is particularly notable in the case of China and Hong Kong. In January, the Hong Kong group accounted for a significant portion of the accounts in the map (6.6%), as well as being the most dense cluster. This prominence accelerated further in February, with the percentage of Chinese and Hong Kong-focused accounts reaching 17.6%, therefore surpassing the US Right-Wing in volume. However, the coronavirus conversation in March appears drastically different, with the Chinese group now largely absent from the map and Hong Kong-focused accounts forming only 1% of the network.

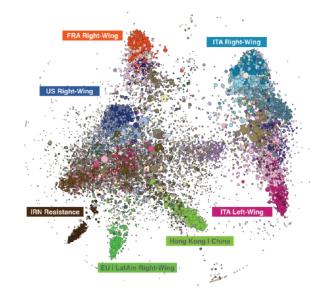
Other geographically based clusters that were present in earlier maps and had disappeared by March include Australia, Japan, and Korea. India, on the other hand, was absent from the February map yet rose to 7.3% of the total map volume in March, when the number of confirmed cases is also rising. This is also the case for Italy, where the number of cases began to surge by the end of February and the volume of accounts rose to 2.96% between February and March. In France, as the infection rate escalated at the end of February, the node volume from France increased from 2% to 9%.

⁸ Graphika noted an increase in Twitter screen names and bios that included this emoji: "e" from January to February; these appeared to be coronavirus 'interest' accounts, predominantly from Hong Kong and China.

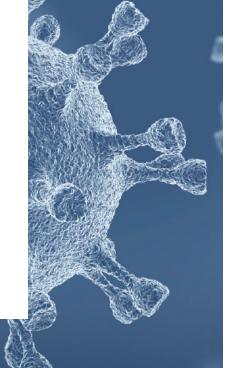
Coronavirus Disinformation Map:

January 25 - February 24

A fourth map (left) was produced in February to capture the network of accounts sharing disinformation around coronavirus. The map was seeded with a set of hashtags, and combinations of hashtags, that were known to be used at the time to spread false or misleading information on the topic.⁹ Since the writing of this report we have continued to discover and map new conspiratorial and disinformation content related to coronavirus.



Despite the conversations dominated by conspiratorial content, the footprint of mainstream media and health organizations remains strong. The largest portion of this map is taken up by mainstream media and health organizations; however, a number of right-wing political communities from across the globe are involved in the conspiracy side of the coronavirus conversation. As shown above, the Italian left and right-wings are clustered separately from the rest of the map, indicating a high degree of internal interconnectedness. There are also consolidated groups of right-wing accounts from France, the US, and a number of EU countries. Notably, the proportion of Italian accounts surpasses the US Right-Wing group in this map: this has not been the case for any of the three maps in the monthly interval series and indicates that the conspiratorial and disinformation conversation is particularly strong in Italy.



⁹ #Chinavirus, #Bioweapon, #biowarfare, #depopulation, #coronavirus AND #BillGates, #coronavirus AND #GeorgeGoros, #coronavirus AND #Soros, #Coronavirus AND #GeorgeGoros, #coronavir

Which Communities Produce and Engage with Coronavirus Disinformation?

Conservative groups have a larger total presence than liberal groups in the disinformation map, and the combined volume of activity from conservative groups is 27%, compared with 8% from left-leaning groups. This indicates not only that there are more right-wing accounts, but these accounts are also more prolifically producing content than their left-wing counterparts. When groups are broken down geographically this holds true for the US and for Italy. However, left-leaning groups in LatAm and countries in the EU appear to be more active in engaging in the coronavirus conversation.

Location	Percentage of tweets - Right-Wing Groups	Percentage of tweets - Left-Wing Groups
US	22%	3%
Italy	2%	<1%
Latin America + EU ¹⁰	2%	5%

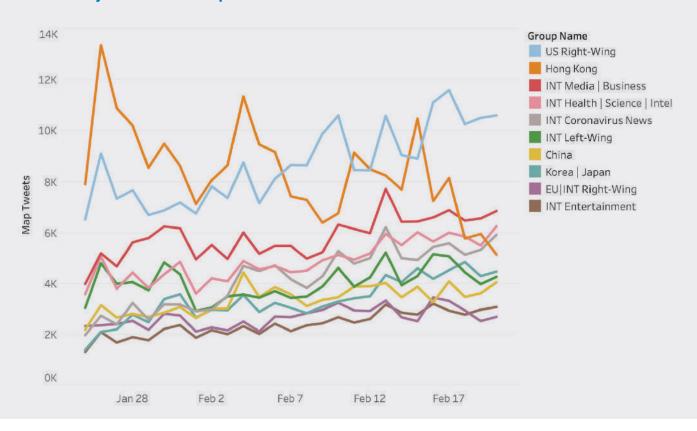
In February, the US Right-Wing group had the largest percentage of nodes present in the map as well as the highest volume of tweets in the map (tied with Hong Kong at 18% tweet volume). This map was produced on a global scale and therefore encompasses 1.3 million tweets, but right-wing groups appear to be dominating the conversation around coronavirus in terms of volume, even by comparison with international media.

Twitter activity by each group in the February coronavirus map.

Group Name	#Nodes	Total Map Nodes	#Tweets	Percent of Total Map Tweets	Avg Tweets per Member
US Right-Wing	3,029	23%	245,512	18%	67
Hong Kong	2,364	18%	246,202	18%	94
China	1,303	10%	95,377	7%	62
INT Media Business	1,290	10%	166,034	12%	106
Korea Japan	1,281	10%	93,085	7%	56
INT Health Science Intel	989	7%	137,063	10%	114
INT Left-Wing	978	7%	115,591	9%	98
INT Coronovirus News	771	6%	116,120	9%	120
EU INT Right-Wing	704	5%	76,479	6%	93
INT Entertainment	684	5%	66,986	5%	78
Grand Total	13,393	100%	1,358,449	100%	889

 $^{^{\}rm 10}$ These countries included Brazil, UK, Germany, France, and Venezuela

A line graph of Twitter activity by each group in the February coronavirus map.



Graphika also analyzed coronavirus narratives within other political contexts, for instance within online conversations about climate change. There were commonalities noted between the arguments used by climate change detractor clusters and the conservative groups that have been actively downplaying the extent of coronavirus. A live map seeded on climate change-focused hashtags and accounts contained narratives that downplayed the coronavirus. This was most commonly observed among conservative and climate change denial groups within the climate change map.

Hashtags like #CoronaVirusPanic, #CoronaHoax, and #CoronaVirusHysteria had the highest focus scores within the groups where this narrative was most consistently pushed. There are also examples of climate skeptic influencers downplaying the virus by comparing it to "climate hysteria", and even praising global warming as a potential solution for the pandemic. US Right-Wing accounts in the coronavirus March map were using the hashtag #ClimateChange to mock criticisms of the Trump administration's handling of coronavirus and to compare it to 'climate alarmism'. These communities drew attention to their usual targets, for example by speculating that Greta Thunberg must be 'delighted' that people have been quarantined, thus lessening human impact on the environment. Most of the traffic in progressive clusters mentioning Greta Thunberg was driven by her tweet calling for trust in science and experts around the topic of coronavirus. 12

¹¹ https://twitter.com/James7Holland/status/1239510853520625666

¹² https://twitter.com/GretaThunberg/status/1237711121445982212?s=20

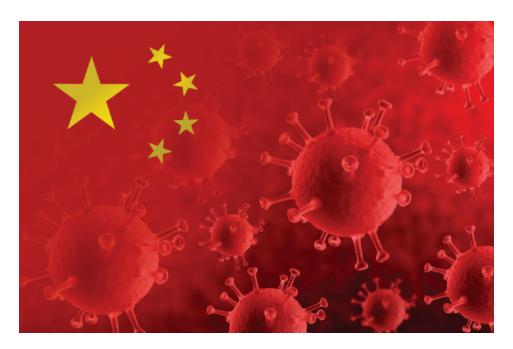




Racism and Xenophobia

Anti-Chinese Content

Both the chronological series of conversation maps and the specific coronavirus disinformation map contain a wealth of content with racialized messaging or imagery. Online debate around the causes or origins of the virus overlap heavily with racially focused content. A strong emphasis is placed on the Chinese origin of the virus, noted often in the popularity of hashtags like #ChinaVirus and #WuhanCoronavirus, with posts often mentioning traditional Chinese food and culture in a stigmatizing manner. The hashtag #KungFlu also had brief bouts of popularity in February and March - from February 2 to 17 and from March 9 to 16. The use of this hashtag was mostly, if not entirely, concentrated in the US Right-Wing cluster.



By February the top 19 hashtags of 20 in the February map were related to the outbreak. The trend of associating China with the virus was common in the use of hashtags such as #ChinaVirus, which many commentators have warned will likely result in xenophobia. However, the evolution of the most used hashtags indicates that this trend is slowing: by March, previously popular hashtags like #WuhanVirus and #CoronavirusChina had disappeared from the top 20. This coincides with an increase in mainstream media presence in the March map, and as such, variations of the official virus name, COVID-19, accounted for the most shared top five hashtags, after #coronavirus

 $^{^{\}rm 13}$ https://www.nytimes.com/2020/03/18/us/politics/china-virus.html

Italian "News" Sites

The Italian far-right group in our Coronavirus Disinformation map was dominated by clickbait news sites that frequently posted racist and anti-immigrant content. This corroborates a recent report from the DFR Lab that analyzed pro-right Italian accounts using the coronavirus to target immigrants. ¹⁴ The news outlets noted by DFR Lab for producing articles laden with anti-immigration messaging were also among the top shared news stories in the coronavirus disinformation map's Italian right-wing cluster. The top news articles were predominantly concerned with the intersection of the coronavirus and immigration and posed questions as to whether migrants could be blamed for the severity of the outbreak in Italy.



Links to the homepage of II Giornale, a news site featuring predominantly racially charged, anti-immigration coverage of the coronavirus, were shared 458 times by the Italian far-right group in the disinformation map.



An article from IlGiornale.it. 15 The headline reads: "The immigrant bomb and the virus. All those 'silent' infections."



An article from stopcensura.it. ¹⁶ The headline reads: "Coronavirus Has Reached Africa," Says Russian Foreign Minister."

Another article from the news site stopcensura.info claims that the Russian Foreign Minister warned of a massive spread of coronavirus throughout Africa, in an obvious attempt to further stoke fears about immigration from African countries into Italy. This article (shown left), begins with a tweet by the French version of Russian news agency Sputnik and continually refers to Africa as "the black continent." It was shared in high volume among the Italian right-wing group in the coronavirus disinformation map.

¹⁴ DFR Lab on Medium: 'Pro-right Italian media target African immigrants over coronavirus.'

¹⁵ https://www.ilgiornale.it/news/cronache/coronavirus-contagio-arrivato-anche-nei-centri-daccoglienza-1842061.html

¹⁶ https://stopcensura.org/il-coronavirus-ha-raggiunto-lafrica-afferma-il-ministro-degli-esteri-russo/



The alt-right or clickbait sites that had articles with racist and anti-immigrant content and that circulated in the top shared URLs of the Italian right-wing group are shown below; in total they were shared 8,079 times across the Italian right-wing group.

Domain	# of Shares - Italian Right-Wing
stopcensura.info	1,045
imolaoggi.it	993
Ilgiornale.it	906
ilmessaggero.it	902
voxnews.info	849
laverita.info	662
scenarieconomici.it	616
alfiokrancic.com	450
secoloditalia.it	658
maipiulasinistraalgoverno.it	258
7colli.it	229
tg.la7.it	215
baritalianews.it	180
fdesouche.com	116
Total	8,079

Along with news articles, 20% of the top retweets among the Italian right-wing concerned the virus. These most popular tweets range widely in terms of viewpoint, from accusations of racism leveled at the Partito Democratico¹⁷ to the criticism that the party prioritized not offending Chinese people over protecting the Italian population.¹⁸ This narrative has also proven popular in France.

¹⁷ http://web.archive.org/web/20200317050417/https:/twitter.com/francescatotolo/status/1231560986932523008

¹⁸ https://twitter.com/CesareSacchetti/status/1231164194185187329

French Right-Wing

Among the French groups in the series of coronavirus maps, popular tweets came from medical professionals that also explicitly support both mainstream right-wing politics and far-right influencers and politicians affiliated with the National Rally. The French right-wing groups in the first two maps of the series (January and February) were focused more heavily on domestic political scandals than on the coronavirus outbreak. 19 However, the March map saw a surge in engagement with coronavirus-related content, especially in the far-right and right-wing clusters. Some of the influential accounts in these clusters began to spread content about coronavirus to make political points about immigration, both on Twitter and through the domains heavily shared by the accounts. Interestingly, most of the domains that were shared in high volume by right-leaning French accounts were also shared significantly by the far-left cluster, highlighting overlapping narratives related to coronavirus.



Far-right domains shared among the French group in the March map

Domain	% of the Far-right cluster sharing the domain	% of the Right-Wing cluster sharing the domain	% of the Far-left cluster sharing the domain
Fdesouche.com	77.84%	45.09%	11.54%
Valeursactuelles.com	72.43%	58.38%	28.08%
bvoltaire.fr	50.27%	32.95%	6.92%
ripostelaique.com	49.73%	24.86%	8.85%
damocles.co	45.41%	24.28%	3.5%

¹⁹ Accordingly, popular topics of conversation included #GriveauxLeaks, where former presidential party candidate Benjamin Griveaux had to end his candidacy for Paris city hall after sexual video content was leaked online, and the "Mia" scandal, in which a 16-year-old singer was harassed online for making Islamophobic comments.

The most popular domains among the French right and far-right clusters are media outlets spreading anti-migrant coronavirus-related content, the five most highly shared of which are shown above. Several racist, anti-immigrant, and false narratives supported by these outlets are thriving among the French far right in the most recent map, for instance that neighborhoods populated mostly by Muslims and people of African origin have special quarantine rules, or that people of color and Muslims are not respecting the quarantine and are assaulting the police when threatened with fines. A number of the most highly shared domains, such as thomasjoly.fr, the website of Thomas Joly, head of Parti de la France, claimed that "afro-Muslim neighbourhoods" have been exempted from the quarantine rules. The article shown below is from nosignal found.fr, a domain that has been shared 19 times among the far-right cluster and 11 times among the right-wing Les Republicains support cluster. The author claims that Paris' 18th district, a diverse neighborhood with a high concentration of immigrant communities, has been revolting against the government rules.



An article from nosignalfound. fr, a far-right site created on May 15, 2019.²¹ Translation: "Some of them are telling me they are here to fuck France. In Paris's 18th district it's difficult to make people respect quarantine rules." Image reads "I don't give a (expletive) about quarantine."

²⁰ http://www.thomasjoly.fr/2020/03/le-confinement-allege-dans-les-banlieues-afro-musulmanes-pour-ne-pas-mettre-le-feu.html

²¹ https://www.nosignalfound.fr/certains-me-repondent-quils-sont-la-pour-niquer-la-france-dans-le-18e-paris-le-respect-des-regles-de-confinement-difficile-a-faire-appliquer/

Two videos posted in March proved particularly popular among the French far-right. The first, shared 44 times in this cluster, shows a woman of color verbally assaulting police officers, claiming that she has coronavirus and will infect them by coughing.²² The second, shared 33 times, shows a woman of color who allegedly works in the medical system yelling at police officers after she was fined.²³

According to far-right influencers and supporters, such as Damien Rieu, founder of the trans-European movement Generation Identity, immigrants are illegally selling medical goods²⁴ (side, top-left), stealing from supermarkets²⁵ (side, bottom-right), or robbing food transport trucks.²⁶ In the latter tweet, the account claims that the "racailles" who robbed the truck even killed the driver. The French word "racailles" is typically used in an extremely derogatory manner to refer to young people of North African and African descent who live in high-crime neighborhoods and are involved in drug dealing.



Translation: "Attempt to steal water supplies in an Auchan shop in the Paris area." This tweet was shared 57 times in the far-right National Rally cluster.

Translation: "In Lyon, scum and dealers of all trades already found a new lucrative business. Smuggling, stolen goods, hawking, everything is good to work the system and continue trafficking." The tweet was shared 46 times.





Several outlets shared by the French right-wing and far-right clusters have been spreading false and misleading content claiming that Muslims have been "celebrating" the coronavirus and have referred to the outbreak as a "punishment from Allah." A number of far-right websites also attacked the government for sending screening tests to Algeria while there is a shortage of tests in France.²⁷

Article from myjournal.com.²⁸ The headline translates: "Covid-19: Imam celebrates the coronavirus pandemic, sent from Allah to kill all infidels." The domain myjournal.com has been shared 66 times among the far-right cluster, 34 times among the right-wing cluster, and 14 times among the far-left cluster

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²² https://web.archive.org/web/20200317122729/https://twitter.com/simonlouvet_/status/1239888722172284929

²³ https://web.archive.org/web/20200317114950/https://twitter.com/Damocles_Fr/status/1239880060246646789

²⁴ https://web.archive.org/web/20200322182246/https:/twitter.com/DamienRieu/status/1239680 766937601

²⁵ https://web.archive.org/web/20200316231448/https://twitter.com/pagnol_arn/status/1239681122696679431

²⁶ https://web.archive.org/web/20200317124127/https://twitter.com/tprincedelamour/status/1239894021109100544

²⁷ http://lagauchematuer.fr/2020/03/23/macron-offre-gratuitement-5000-kits-de-depistage-au-coronavirus-a-lalgerie/ ²⁸ https://myjournal.fr/covid-19-un-imam-se-rejouit-de-la-pandemie-du-coronavirus-qui-serait-envoye-par-allah-pour-tuer-tous-les-mecreants/

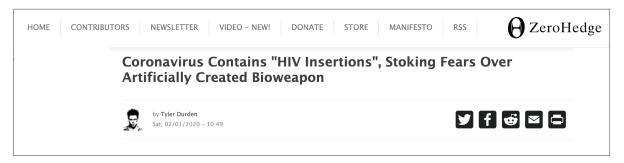
Conspiracy Communities

As with most global phenomena, online conversation around the coronavirus has been blighted with various conspiracies since it first appeared in China. By the time data finished collecting on January 15, there were over 40 confirmed cases in China and the virus had already spread to Thailand.²⁹ Despite this, none of the 100 most shared URLs or pieces of content within conspiracy clusters pertained to the coronavirus. On the contrary, in February, seven of the ten top shared URLs in the conspiracy clusters were related to coronavirus. At first, coronavirus conspiracies appeared to revolve around the origin of the outbreak, often by tapping into existing theories about the "new world order" and "population control." As the pandemic has spread to geographies in which communities that support these theories are traditionally particularly strong, conspiracy content has become more granular, with articles focused on various governmental responses to the outbreak.

Zero Hedge

In January and February, a number of alternative media and conspiracy sites appeared high on the list of shared URLs. Zero Hedge, a libertarian and often pro-Kremlin financial blog that was banned from Twitter for spreading coronavirus misinformation in early February after it doxxed a Chinese scientist, 30 climbed from 15th to 9th most shared between January and February.

Zero Hedge content was widely shared before being removed from the platform, with links to articles on the site being shared over 2,000 times in the February map. The two clusters sharing these links most prominently originated from within the US Right-Wing group, one dedicated to US and Canadian alt-right and conspiracy influencers, and the other a QAnon support cluster.



Article from ZeroHedge, which was the third most shared link among conspiracy clusters in the February map.

Two of the "missions" stated within Zero Hedge's "Manifesto" are to "liberate oppressed knowledge" and "attack the flaccid institution that financial journalism has become." A common sentiment shared by both conspiracy theorists and health misinformation communities is the rejection of the "establishment," whether is best represented by mainstream media or the institutionalized health system. As such, much of the popular conspiracy content in these maps focuses on the potentially insidious uses of the coronavirus by perceived "bad actors," for example the "deep state." The third most shared link among conspiracy clusters across the data collection period was the report from Zero Hedge shown below, 32 which focuses on the creation and objectives of the coronavirus.

 Graphikes
 The COVID-19 "Infodemic"
 22

³⁰ https://www.theverge.com/2020/1/31/21117663/twitter-zero-hedge-suspended-platform-manipulation-policy-doxxing-coronavirus

³¹ https://www.zerohedge.com/about

 $^{{\}it 32 https://www.zerohedge.com/geopolitical/coronavirus-contains-hiv-insertions-stoking-fears-over-artificially-created-bioweapon} \\$

QAnon

As mentioned, the deep state conspiracy community QAnon has taken a significant interest in several aspects of the coronavirus outbreak: its origins, its potential impact on the future of society, and foreign governmental response. A collection of tweets from Graphika's dedicated QAnon Core map from February 2 to March 3, 2020 shows that the community was highly engaged on the topic of the outbreak even in its early stages. Across this month, #coronavirus was the fourth most popular hashtag (after consistently-used identity markers for QAnon supporters: #qanon, #wwg1wga, and #maga) and appears to have displaced all other current news topics.



Content shared in the early stages of this time period covered a multitude of pro-US and anti-China themes, predominantly revolving around Chinese authoritarianism benefiting from the pandemic. A number of highly shared tweets from this early period also accuse the mainstream media of covering up or minimizing death tolls and originate with mainstream conservative voices such as James Woods.³³

There are also attempts to incorporate the coronavirus outbreak into the wider QAnon conspiracy structure using the hashtag #StormIsHere, which was used by 2,118 users in Graphika's QAnon map between March 24 and 31. "The Storm" concept is central to QAnon: having been allegedly referenced by Trump in a press conference in October 2017 in the presence of high-ranking military officials, supporters believe that Trump is working toward a political climax, at which point he will be able to expose and subsequently punish those involved in the "deep state." Popular posts and discussion from QAnon supporters suggest that this community believes that the coronavirus outbreak is the "storm" that Trump has been waiting for, with tweets from this time implying that prominent US politicians being taken into coronavirus-related quarantine is a cover for their arrests.

Despite these references, the most popular narrative from across the month implicates the usual targets of the QAnon community in having prior knowledge of, or a hand in creating, the virus. For example, the top tweet on coronavirus implies that Facebook and Google being used in a civil lawsuit regarding genocide in China indicates an awareness of the outbreak before it began. There are multiple references tying "new world order" figures such as those discussed below with the creation of the virus in a lab in Wuhan province.

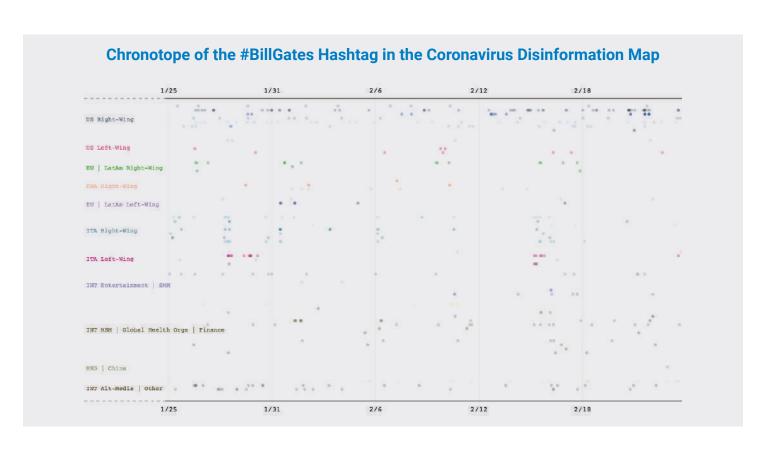
³³ https://twitter.com/RealJamesWoods/status/1227666052101763072

³⁴ https://twitter.com/bocake/status/1242140661694021639

Bill Gates and George Soros

As mentioned, a number of popular conspiracies around the origins of coronavirus emerged across this period, many of which were debunked in real time by mainstream media outlets.³⁵ One of the most popular tied together existing conspiracy theories about prominent figures in the political or celebrity world and was prominent in the coronavirus disinformation map.

The hashtag #BillGates appeared in the February conversation map, with steady, yet low-frequency usage from February through March. Although this usage was widespread across groups in the coronavirus disinformation map, the use of the hashtag never exceeded 20 tweets per day. This is evident in the chronotope below, which displays a dot for each tweet including the #BillGates hashtag from a group in the disinformation map across time. Conspiracy-focused content that contains the hashtag either focuses on Bill Gates predicting the coronavirus³⁶ or claims that Gates called for depopulation.³⁷ A further conspiracy emerged around the Gates Foundation engineering the virus for profit, since the Gates Foundation patented a potential vaccination for it.³⁸



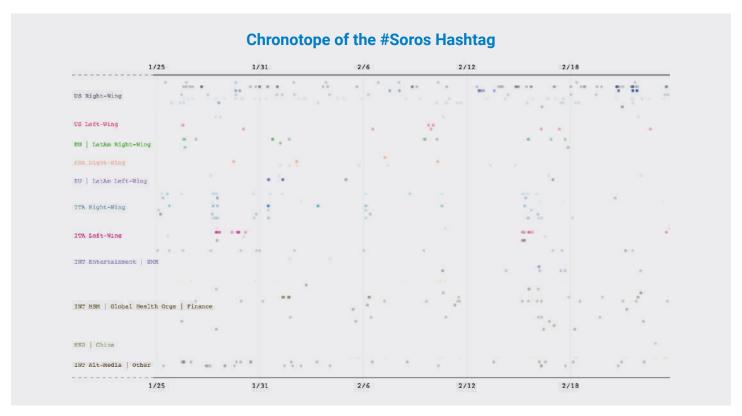
³⁵ https://www.buzzfeednews.com/article/janelytvynenko/coronavirus-fake-news-disinformation-rumors-hoaxes

³⁶ https://twitter.com/DeLaCruzTine/status/1223449581989568512

³⁷ https://twitter.com/TDelyfer/status/1223738027777781760

³⁸ https://twitter.com/Margare25683010/status/1223030958737235968

By comparison, conspiracy theories about George Soros and his potential links to the coronavirus began early in the data collection period. The chronotope below shows usage of the hashtag #Soros across this map from January 25 to February 25. Notably, the hashtag #Soros was used more frequently and more consistently by the Italian right-wing than any other group in the map. Breaking down engagement with #Soros within the Italian right-wing group, it appears to have been used equally by mainstream right-wing supporters and the more conspiracy-focused clusters.





The tweet on the left is an example of the type of #Soros content being produced by the Italian right-wing conspiracy clusters, with the user attempting to draw attention to a Reddit post that "reveals" that George Soros owned a biotech company in Wuhan, China. The Reddit post includes a reference to an 8kun message board and uses the phrase WWG1WGA, commonly employed by the QAnon deep state conspiracy community.

A popular tweet (translated) in the ITA Right-Wing group using the #Soros hashtag in relation to coronavirus

As shown by the chronotope (pg.23), engagement with #Soros fluctuates over the month, often peaking with the publication of conspiratorial articles. For example, the French right-wing become interested in the #Soros hashtag around February 18 in the context of two articles, one posted on the notorious far-right identitarian site fdesouche.com. The articles concern Soros' relationship with the European Court of Human Rights and are not related to coronavirus.³⁹

The French right-wing community appears to have focused on the conspiracy theory that the government withheld critical information from the public, with speculation as to the reasons behind that decision. For example, there are various claims that the French government has used the outbreak to help immigrants with expired residence permits remain in the country (shown below).⁴⁰ These narratives often place the blame with Emmanuel Macron and his ministers for not having implemented border controls or with former Health Minister Agnès Buzyn for transitioning from her position at a critical time.



A blog called ns2017 was shared with high volume across all three French political groups in the February map. ⁴² The blog appears to have previously been dedicated to supporting former President and Les Republicans politician Nicolas Sarkozy for the 2017 Presidential elections (hence "ns2017); however, it later became a hub for conspiratorial and anti-immigration content. As well as posting anti-migrant and Islamophobic content, the blog publishes a significant portion of coronavirus-related conspiracy.

The article below ties together a number of coronavirus conspiracy claims: that a cure is being withheld, that the virus was created in Wuhan by the pharmaceutical industry to make money, and that this was done with the assistance of the French socialist party and the Pasteur Institute, which helped to create Wuhan's BSL4 laboratory. The article also claims that Bill Gates and George Soros are tied to the conspiracy and are hoping it will "eradicate humanity" and UN agencies are accused of disseminating it.



INFORMATIONS SANS LANGUE DE BOIS!

Covid19 toute la vérité.... PRENEZ SOIN DE VOUS....

à la une par laddymarie, publié dans non classé, observatoire du mensonge, révélations, site sans langue de bois, tribune libre

Article from ns17.wordpress.com.⁴³ Translation: "The news without stonewalling" and the headline "Covid19 all the truth.... TAKE CARE OF YOU...."

A further piece of disinformation around governmental response emerged in the US following President Trump's publication of a letter on March 13 mentioning the Stafford Act. 44

The most popular tweets mentioning the hashtag came from journalists commenting that the act may allow federal financial aid to trickle down to state and local governments to deal with the pandemic. 45 However, around March 15, Graphika identified a set of tweets within the collection about an SMS message allegedly warning that the Stafford Act automatically triggers both martial

law and a mandatory two-week lockdown. Many of these messages, screenshots of which were posted to Twitter, referenced a "mentee in DC," "a friend in the military," or a "veteran friend here in DC." While claims that the SMS campaign bore the hallmarks of a foreign information operation circulated, Graphika's analysis proffered a number of alternative possibilities.⁴⁶

⁴² https://ns2017.wordpress.com

⁴³ https://ns2017.wordpress.com/2020/03/18/97006/

 $^{^{44} \} https://www.whitehouse.gov/briefings-statements/letter-president-donald-j-trump-emergency-determination-stafford-act/$

⁴⁵ https://twitter.com/JenniferJJacobs/status/1238485355998973953

⁴⁶ https://graphika.com/posts/pranksters-or-foes-sms-based-crisis-disinformation/

Health Misinformation

Another Graphika map of relevance is the "Health Misinformation" map, seeded on top signals associated with health misinformation that were commonly spread in 2019. The resultant map includes US anti-vaxx and big pharma conspiracy communities, predominantly from the US, the UK, and India.

The February coronavirus conversation map has 419 accounts in common with Graphika's broader health misinformation map. The overlaps between these two maps represents an 80% increase from the January map, indicating that habitual sharers of health misinformation increased their share of voice in coronavirus conversations in February. Of the accounts that exist in both networks, 66% sit within the US Right-Wing clusters.

"Cures" and Home Remedies

Garlic, bleach, a strict water intake, and Silver Solution (potentially lethal doses of colloidal silver) are among the magical home cures for the coronavirus that have been sold by grifters online and on television and shared across platforms.⁴⁷ Many of these fake cures are spread through hard-to-track private messaging apps like Whatsapp⁴⁸ and daytime televangelists using fringe media to bolster their products.⁴⁹ The term "colloidal silver" appeared quite prominently in Graphika's February map, with the most attention originating with the QAnon support cluster. Based on focus scores (which measure uniqueness of attention) from a diverse set of groups using this term, some groups were participating to spread this idea while others engaged to counter the narrative. For example, US Right-Wing had the highest score (9.1), but INT | US Health Scientists had the second highest score (6.0) followed by US Left Political Journalists | Legal Writers (5.0), followed by another two US Right-Wing groups (both with a focus score of 3.3).

The announcement of the use of chloroquine as a potential cure for coronavirus by French virologist Didier Raoult led to a burst of interest among French right-wing and far-right groups. Didier Raoult, who was part of a council of experts advising the government in its crisis strategy, is now at the heart of various conspiracy theories. This content, for example (the article to the right), claims that Raoult was correct about chloroquine and that the government terminated his position on the council because they do not want the crisis to be resolved.



Article from Riposte laique: headline translates "All masks down: Covid-19 outbreak uncovers deadly plans from Macron's pack." Riposte laique was shared 92 times in the French far-right cluster, 43 times in the right-wing cluster, and 23 times in the far-left cluster.

Another website mentioned previously for spreading conspiratorial content, medias-presse.info, has been claiming that chloroquine has been used to cure members of French parliament infected with coronavirus, and its sales are now subject to regulation. Doctor Bernard Giral, cited in the headline below, has become a popular voice over the last couple of days, as he defended Didier Raoult and the use of chloroquine as a treatment for coronavirus.⁵⁰ A similar controversy around chloroquine unfolded in the US after President Trump discussed the combination of two malaria drugs as a potential cure for the virus in a press conference, and later tweeted Didier Raoult's medical study.⁵¹

 $^{^{47}\} https://www.nytimes.com/2020/03/08/technology/coronavirus-misinformation-social-media.html$

⁴⁸ https://www.washingtonpost.com/technology/2020/03/02/whatsapp-coronavirus-misinformation/

⁴⁹ https://deadstate.org/jim-bakker-you-can-kill-the-coronavirus-in-12-hours-with-my-silver-solution-ointment/

⁵⁰ http://www.fdesouche.com/1354397-le-docteur-giral-denonce-le-scandale-de-la-chloroquine-viendra-lheure-du-jugement-et-des-reglements-de-compte

⁵¹ https://twitter.com/realDonaldTrump/status/1241367239900778501?s=20

Home-Brewed Trackers

The popularity of home-brewed trackers and virus maps ties into conspiracies around death tolls, mistrust of established statistics on the virus, and a larger misbelief in health data integrity. The top four URLs in the cluster of International Coronavirus News Outlets, which are followers of informal and often problematic news around COVID-19, link to "tracking" tools and maps of the coronavirus. For example, the BNO News tracker shown to the right was shared 1,965 times in the coronavirus disinformation map. 52

For example, consider this account that decided to do a personal investigation using windy.com and satellite imagery of the now debunked rising sulfur dioxide rates in Wuhan.⁵³ The tweet thread on the right was shared over 800 times in one day in the coronavirus disinformation map. As a result, a popular word pair in the Coronavirus News cluster became "sulfur dioxide," which has been cited by these accounts 59 unique times. The thread was likely inspired by an Epoch Times article written a few days before with "exclusive" interviews from Chinese medical practitioners about allegedly secret crematoriums.⁵⁴

Some French far-right domains have also been spreading conspiratorial content on the number of deaths officially reported. One of the most recurring narratives across coronavirus conspiracy content in each country is the claim that governments have been downplaying or "controlling" about the number of deaths related to coronavirus in order not to discredit their response. The French government in particular has been mocked by far-right and disinformation sites shared in the map for stating that surgical masks are useless for the general population, while the President wore one at a public outing.⁵⁵



A home-brewed map by BNO News, shared 1,965 times across the map.



A <u>personal investigation</u> thread falsely claiming a rise in S02 above Wuhan, China was caused by crematorium pollution.



An article from medias-presse.info.

Translation: "Coronavirus- in Mulhouse,
Macron was wearing a surgical mask in the
street but his government keeps repeating that
they are useless to the population."

 $^{^{52} \}text{ https://bnonews.com/index.php/} 2020/03/\text{the-latest-coronavirus-cases/, https://www.windy.com/?38.921,-77.036,5, https://avatorl.org/covid-19/2020/03/the-latest-coronavirus-cases/, https://www.windy.com/?38.921,-77.036,5, https://avatorl.org/covid-19/2020/03/the-latest-coronavirus-cases/, https://www.windy.com/?38.921,-77.036,5, https://avatorl.org/covid-19/2020/03/the-latest-coronavirus-cases/, https://www.windy.com/?38.921,-77.036,5, https://avatorl.org/covid-19/2020/03/the-latest-coronavirus-cases/, https://avatorl.org/covid-19/2020/03/the-latest-coronavirus-cases/, https://avatorl.org/covid-19/2020/03/the-latest-coronavirus-cases/, https://avatorl.org/covid-19/2020/03/the-latest-coronavirus-cases/, https://avatorl.org/covid-19/2020/03/the-latest-coronavirus-cases/, https://avatorl.org/covid-19/2020/03/the-latest-coronavirus-cases/, https://avatorl.org/covid-19/2020/03/the-latest-coronavirus-cases/, https://avatorl.org/covid-19/2020/03/the-latest-coronavirus-cases/, https://avatorl.org/covid-19/2020/03/the-latest-coronavirus-cases/, https://avatorl.org/covid-19/2020/03/the-latest-cases/, https://avatorl.org/covid-19/2$

⁵³ https://www.euronews.com/2020/02/13/debunked-this-images-doesn-t-show-extent-of-corpse-burning-in-wuhan

⁵⁴ https://www.theepochtimes.com/funeral-home-worker-in-wuhan-epicenter-of-coronavirus-we-are-working-24-7-to-cremate-bodies_3227432.html

https://www.medias-presse.info/coronavirus-a-mulhouse-macron-portait-un-masque-de-protection-en-rue-mais-son-gouvernement-repete-a-la-population-que-ca-ne-sert-a-rien/119125/

Geopolitical Tensions

Graphika has been actively monitoring the networks and content of the coronavirus map series for overt or covert foreign actor activity, and dedicated specific maps to analyze how state sponsored entities engage with escalating geopolitical tensions around the pandemic. There is an obvious focus across the four maps analyzed on geopolitical tensions across multiple regions: some examples of this activity appear to be overtly statesponsored efforts to "save face" abroad, and others appear to be more covert networks of accounts spreading disinformation. This section is designed to encompass analysis that can be shared at present while acknowledging that further investigation into the groups discussed below and more are underway.

https://thesyriacampaign.org/wp-content/uploads/2017/12/KillingtheTruth.pdf
https://www.zerohedge.com/geopolitical/did-china-steal-coronavirus-canada-and-weaponize-it

Pro-Kremlin Voices

There are a number of clusters across the four maps that represent pro-Kremlin or Kremlinaligned viewpoints. As often noted in studies of information operations, these seemingly independent accounts can have a heavy impact on an online conversation, either by injecting Russian state-sponsored talking points into susceptible communities or by setting the Kremlin's agenda with their reporting.

The far-left and independent journalists cluster in the coronavirus disinformation map consists of alternative media sources, oftentimes perceived as "whistleblower outlets," that are critical of mainstream media and government. Many of the top followed and retweeted accounts in this cluster are Kremlin-affiliated or "independent journalists" that have played key roles in previous Russian disinformation campaigns.⁵⁶

The accounts in the far-left cluster in the coronavirus disinformation map were heavily concentrated on Russian state media, the RT and Russian Market accounts making up 37% of the top 100 pieces of content shared by these accounts. Similarly, the media outlets most followed by this cluster were Russian and Chinese state media: RT (@RT_com), Sputnik News (@SputnikInt), and Global Times (@ globaltimesnews). Conspiracy content is sprinkled throughout the top shared URLs that mention the coronavirus in the context of being engineered as a bioweapon, including from ZeroHedge.⁵⁷ There were 15 unique articles from ZeroHedge in the top 100 shared URLs from this cluster.

The top four URLs in this cluster link to "tracking" tools and maps of the coronavirus, presumably in order to provide alternate data points to those with a distrust in official reporting of the outbreak. A number of home-brewed trackers are present in the most shared media links unique to this cluster and do not appear for other groups on the map.58 The most highly shared URLs also include articles about "leaks" from Chinese doctors and an "accidental" disclosure of data from the website Taiwan News.⁵⁹ The sharing of these links could be intended to indicate privileged access to data or "secrets" and, as such, undermine trust in official health sources in various countries.

Popular content also includes the YouTube Channel of Jennifer Zeng, a Falun Gong practitioner and Chinese dissident with ties to Epoch Times. 60,61 An Epoch Times YouTube video criticizing the CCP's coronavirus response strategy is also among the most popular pieces of content. 62 Other pieces of content shared highly by this cluster included a New York Post article encouraging readers to "not to buy China's story" as the virus "could have been leaked from a lab,"63 and a tweet predicting how the CCP will misrepresent infection rates.⁶⁴ The objective of this content is likely to sow confusion, fear, and anger against the CCP by encouraging the viewpoint that China has been actively censoring the coronavirus narrative. Meanwhile, another cluster of pro-Kremlin journalists that appeared in the March map focused on the narrative that the US created the coronavirus, the second most popular URL being the GlobalResearch article⁶⁵ that was later tweeted by Zhao Lijian.66

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 $^{^{56}\} https://thesyriacampaign.org/wp-content/uploads/2017/12/Killingthe Truth.pdf$

⁵⁷ https://www.zerohedge.com/geopolitical/did-china-steal-coronavirus-canada-and-weaponize-it

⁵⁸ https://nextstrain.org/ncov

⁵⁹ https://www.taiwannews.com.tw/en/news/3871594, https://www.taiwannews.com.tw/en/news/3876197

thtps://www.youtube.com/c/JenniferZeng Graphika previously investigated Epoch Media Group after 900 affiliated assets were removed from social media platforms for engaging in large-scale coordinated inauthentic behaviour. https://graphika.com/uploads/Graphika%20Report%20-%20OperationFFS_Fake_Face_Storm.pdf

⁴² https://www.youtube.com/watch?v=Jcthdee6CXs&list=PLKDm1nJ92oesGrVYibBZu36doa0kRk75w 43 https://nypost.com/2020/02/22/dont-buy-chinas-story-the-coronavirus-may-have-leaked-from-a-lab/

⁶⁴ https://twitter.com/lwcalex/status/1226840055869632512?s=20

⁶⁵ https://www.globalresearch.ca/china-coronavirus-shocking-update/5705196

⁶⁶ https://twitter.com/zlj517/status/1238292025817968640

Anti-CCP Activists

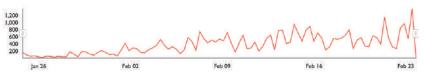
Guo Wengui and his media outlet GNews, along with Steve Bannon and his anti-CCP website America's Voice, are pushing a pro-US, anti-CCP narrative. Wengui is a Chinese billionaire who now lives in the US and works with Steve Bannon. This partnership has often been accused of stoking tensions between the US and China using sensationalist and often conspiratorial content.⁶⁷ Popular content in the anti-CCP and conservative cluster in the map includes videos featuring Guo Wengui that claim the coronavirus is a bio-weapon⁶⁸ and that the death toll has been underreported by the Chinese government.⁶⁹

This narrative appears to have spread to other conspiracy groups, including the dedicated coronavirus "news" group, where GNews is among the most shared domains. Popular accounts in this group include Himalayan International Workstation (@GlobalHimalaya) and their counterpart Himalaya Global (@HimalayaGlobal), who are directly tied to GNews. Their goal, as stated in their website description, is to be the bridge between breaking Chinese news and the Western world, though their main outputs are Fox News and America's Voice clips that have been translated into Mandarin Chinese. Similarly, the English account translates Guo Wengui and GNews clips into English.



A tweet from Himalaya Global with a Guo Wengui video translated into English that questions the accuracy of death toll figures reported by the Chinese government.⁷³

Mentions of @jenniferatntd in the coronavirus disinformation map



The aforementioned Jennifer Zeng has become a prominent voice on the coronavirus. Zeng frequently tweets Epoch Times articles, and her account is mentioned over 500 times per day in Graphika's dedicated coronavirus disinformation map.

Jennifer Zeng has amplified Epoch Times's coronavirus coverage to other groups in this network, and her influence extends beyond Chinese clusters, for example Zeng is also one of the most followed accounts in the internationally focused conspiracy theorists group.



Jennifer Zeng, a prominent voice on the coronavirus, frequently shares Epoch Times articles

⁶⁷ https://www.nytimes.com/2018/12/04/business/stephen-bannon-guo-wengui-china.html

⁶⁸ https://gnews.org/zh-hans/121661/

⁶⁹ https://twitter.com/HimalayaGlobal/status/1231684285599346688

^{70 @}GlobalHimalaya has a GNews link in their profile, post.guo.media/HimalayaGlobal

⁷¹ https://twitter.com/HimalayaGlobal/status/1231684285599346688

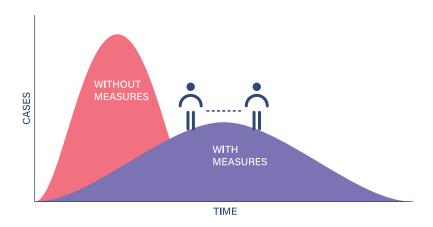
⁷² https://twitter.com/HimalayaGlobal/status/1231684285599346688

⁷³ https://twitter.com/HimalayaGlobal/status/1231684285599346688

Positive Online Communications

#FlattenTheCurve

Maintain Social Distancing #FlattenTheCurve



Graphika has also analyzed several public health campaigns - one of which stands out as a success in its collective communication of best behaviors to adopt in the face of the pandemic. The spread of #FlattenTheCurve is a small case study in the efficacy of science communication that attests to the positive, and likely life-saving, impact of credible information online. The peak date of use for #FlattenTheCurve in our map data was March 16th. There were 115,000+ tweets on this day that included the #FlattenTheCurve hashtag. The mainstream media played an important role in the spread of #FlattenTheCurve. From the accounts participating in the issue that had been previously identified in other Graphika maps, the most significant overlap comes from users identified as followers of mainstream News and Politics.

The hashtag was used predominantly by liberal and progressive groups, including left-wing media, and Resist and anti-Trump groups. Use of this hashtag was associated with a larger organic spread of public health information, with top co-occurring like #SocialDistancing, #StayAtHome, #StayHomeAndSaveLives, and #StopTheSpread. Of particular note was how the hashtag was engaged with by government officials, from Prime Minister Trudeau to the Chief Medical Officer of Ireland. Four of the top ten retweets from our data collection were from verified accounts of government organizations and officials, who engaged in the viral hashtag to spread important information to their constituents in an effort to keep them safe.



