AVAAZ

Scientists under Attack

How health experts became targets on Facebook & Co.

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Contents

Why This Matters

What if scientists stopped speaking out about the biggest issues facing our planet, from COVID to climate?

Over the past year and a half, social media platforms have pledged to contain COVID-related disinformation [1] and have highlighted the growing number of users directed to authoritative information. However, they have also been repeatedly found to be failing in their efforts: This investigation shows how Facebook and other platforms continue to empower disinformers with various ideological agendas by letting anti-science and anti-scientist false content spread and providing a petri dish for threatening, discrediting, conspiracy-theorist and hateful comments.

Not only do these false claims and online attacks, with their high interaction rates, have the potential to spill into offline violence (as in the case of Belgian virologist Marc Van Ranst, who was forced into hiding with his family after receiving death threats, or US immunologist Anthony Fauci who needed an armed security detail to protect him, or German virologist Christian Drosten who received death threats), they also pose a challenge to global efforts to end the pandemic [2] and could have a chilling effect on the wider scientific community. Last but not least, opposition to advice by scientists has already resulted in offline violence, including in Germany where a gas station customer shot a clerk dead following an argument about mask-wearing.

The false claims - on topics including vaccine safety, climate change, evolution and conspiracies about world leaders and other public figures - are also a testament to the evolution of anti-science sentiment in recent years. On the receiving end of the disinformation are scientists, epidemiologists and other health figures responsible for providing evidence-based analysis and recommendations that are pivotal in ensuring public health and a return to (some sort of) normalcy.

Looking closely at how well-known scientists are talked about on Facebook and other social media platforms, Avaaz found not only debunked disinformation that was still reaching millions of people, but also personalised threats of violence, including posts encouraging assassination, reaching beyond the borders of the countries where the scientists are based. This, despite the stark reminder of the January 6 insurrection at the US Capitol, which proved that incendiary rhetoric shared on platforms such as Facebook - particularly by high-profile commentators with large followings - does not simply stay there. [3]

The world needs scientists to address the unprecedented challenges facing humanity. It's time for Facebook and other platforms to do better in tackling disinformation and hate targeting these voices and for lawmakers to consider how policy solutions can ensure that authoritative, evidence-based information is not drowned out by anti-science falsehoods.

A survey by Nature of 321 COVID scientists recently revealed that scientists have experienced a long list of negative impacts after posting on social media or speaking to media, including death threats (15%) and threats of physical or sexual violence (22%). [4] The survey also showed that Twitter, Facebook and Instagram are leading when it comes to the platforms where these scientists are subjected to trolls or personal attacks. [5]

Facebook itself, in its "Hard Questions" explainer blog, acknowledges the impact laws have on users' potential exposure to hate speech: "In Germany, for example, laws forbid incitement to hatred; you could find yourself the subject of a police raid if you post such content online. In the US, on the other hand, even the most vile kinds of speech are legally protected under the US Constitution." While scientists are not explicitly protected under Facebook's community standards (the profession is not included in what the platform calls a "protected characteristic", nor in international law iterations of protected characteristics), we hope this snapshot of disinformation, violent threats and insults will add to the ongoing discussion around upcoming EU, UK, and potential US regulation seeking to address how Big Tech is harming people.

Key Findings

Facebook has taken no action on half of the disinformation content debunked by fact-checkers and targeting scientists included in this investigation. Our research shows that unactioned posts have around five times more engagement (comments, likes and shares) than posts to which Facebook has applied a fact-check measure:

- The Avaaz research team found 85 pieces of debunked disinformation content, which amassed a total of 1,868,294 interactions, targeting three prominent scientists: Anthony Fauci in the US, Christian Drosten in Germany and Marc Van Ranst in Belgium. Engagement for video content has reached 14.7 millions views.
- When findings were first documented in early 2021, 52% of the posts detected on Facebook were live and unactioned (i.e. no measures were applied to them). At close of research on July 20, 2021, that percentage had only slightly decreased to 48%.
- The "Fauci Emails" case study showed that unactioned Facebook posts had around five times more engagement than actioned posts.
- Facebook is still failing at fully labelling all cloned or slightly altered content, despite claiming they had made substantial advances on this front. [6]

Some high-profile misinformers are getting a free pass. Some are getting the most interactions.

- Labelling of false and misleading content on Facebook is inconsistent - including for accounts/actors that attract huge numbers of views and interactions, like popular right-wing pundits.
- Several outlets known for spreading misinformation are among the top 20 sharing the most interacted - with posts in 2021 about the scientists in this research.
- A Facebook live video of Anthony Fauci and Mark Zuckerberg in conversation has 6.3 million views -- but all views of problematic Tucker Carlson content featured in this report amount to 6.1 million views

(4 million of those on Facebook alone). The CDC has only one video post with the keyword "Fauci", which has a mere 727 interactions on its page. [7]

- On social media platforms, the more emotive the content, the more inclined users appear to be to interact with it. For each of the three scientists, the greatest positive correlation measure exists between negative scores and total cross-platform interactions.

In addition to disinformation, scientists - especially Anthony Fauci - are targets of attacks, violent threats and insults

- Threats of violence and calls for assassination have been particularly prevalent for Anthony Fauci; for the other scientists, extreme comments were more rare.
- Content relating to Anthony Fauci accounts for 94% of overall interactions amassed, (1.7 million interactions) making him by far the most targeted scientist among the three.
- The #FireFauci hashtag was shared 144K times between January and June 2021, in at least 46 countries [8] and territories and in six different languages. [9] [10]

Section 1: Disinformation [11] About Prominent Scientists

It is easy to find content that targets prominent scientists and has been debunked by fact-checkers, and it adds up to several million views and interactions. Avaaz collected 85 disinformation posts totalling 1,868,294 interactions relating to three prominent scientists and the institutions they are affiliated with between January 1, and June 30, 2021. The posts were connected to 31 unique fact-checking articles from IFCN [12] -accredited or other reputable fact-checking organisations. [13]

When findings were first documented in early 2021, 53% of the posts found on all five platforms[14] were live and unactioned. At the close of research on July 20, 2021, that figure had changed to 49%, an insignificant change considering the efforts platforms assert they have made to counter misinformation.

We decided to focus on Anthony Fauci in the US and Christian Drosten in Germany based on their public profiles across a few countries where Avaaz works and existing media coverage about attacks or threats against them. [15] We also looked at Marc Van Ranst in Belgium, who, as the apparent target of an armed far-right soldier, was forced into hiding. [16] Since we only found two fact-checks relating to him, he features only in a few sections of this report.

There are likely other scientists who are targets of similar disinformation, violent threats and insults; we also note that the three scientists selected here are white men, though numerous other investigations, testimonies and reports have shown that abuse on social media is even worse for women and people of colour, an observation likely also true in the case of scientists. [17] This is a worthy subject for another report.

Avaaz wanted to compare the reach of the posts containing disinformation with other, authoritative posts, too. We looked at Anthony Fauci, the target of the large majority of high- interaction content examined in this research, and found that there is only one video post with the keyword "Fauci' shared by the CDC Facebook page between January 1, 2020 and September 28, 2021. The video has a mere 700 interactions.

Anthony Fauci and Facebook CEO Mark Zuckerberg discussed the pandemic at a Facebook live on July 16, 2020 -- this video did receive a high number of views, 6.3 million. Three videos posted on Facebook by the official page of Fox's Tucker Carlson about a year later, which are discussed in detail below, garnered a total of 4 million views.

CASE STUDY: THE 'FAUCI EMAILS' STORY

Avaaz investigated posts making false claims about Anthony Fauci's email exchanges from early 2020 and found that some of the posts had tremendous reach and attracted an abundance of violent threats and disinformation in their comments sections; some individual comments went on to rack up even more interactions.

The research also shows, again, that the labelling of fact-checked disinformation is inconsistent, with no action taken on posts by some high-profile commentators, though other posts making the same claims are labelled as false.

On June 1, 2021, following a Freedom of Information request, the Washington Post and Buzzfeed News published reports on several thousand emails sent by Anthony Fauci during the first wave of COVID in the US, in the first half of 2020. These emails show Fauci's exchanges with people from various sectors and discussions with colleagues.

Many commentators and pundits misrepresented these emails, claiming falsely that Anthony Fauci lied about issues such as mask effectiveness, the origins of the coronavirus and hydroxychloroquine's effectiveness as a treatment for COVID-19. [18]

LABELLING INCONSISTENCIES

Facebook's labelling of these claims has been highly inconsistent, although they have been fact-checked, sometimes multiple times, by the platform's own fact-checking partners. In the comments sections below the posts, disinformation - and death threats - spread freely. [19]

Some high-profile personalities had no fact-check labels on their Facebook content, despite making claims proven to be false, and their posts tend to have very high interactions (compared to some of the labelled posts also documented). Posts documented include those from personalities such as American right-wing commentators Tucker Carlson, Laura Ingraham, Dinesh d'Souza, Dan Bongino, the Hodgetwins and Ben Shapiro. An investigation has since revealed that in private, "the company has built a system that has exempted high-profile users from some or all of its rules, according to company documents reviewed by The Wall Street Journal. "

Yet other high-profile commentators who made the same claims about Anthony Fauci's emails and "lies" had Facebook's false information label applied to their posts, referencing fact-check articles. Posts where labels were applied include posts from Liz Wheeler, MRCTV, [20] Congresswoman Lauren Boebert, Brittany Hughes and Adrian Norman.

Avaaz documented 44 Facebook posts making these claims. More than half of them (59%), accounting for almost 1 million interactions and 8 million video views, had no false information labels. The 18 posts on Facebook that were labelled as false information totalled 196K interactions and 1.5 million video views. Our analysis shows that unactioned Facebook posts with false claims about Anthony Fauci's emails in this case study have around **five times more engagement** than actioned posts.
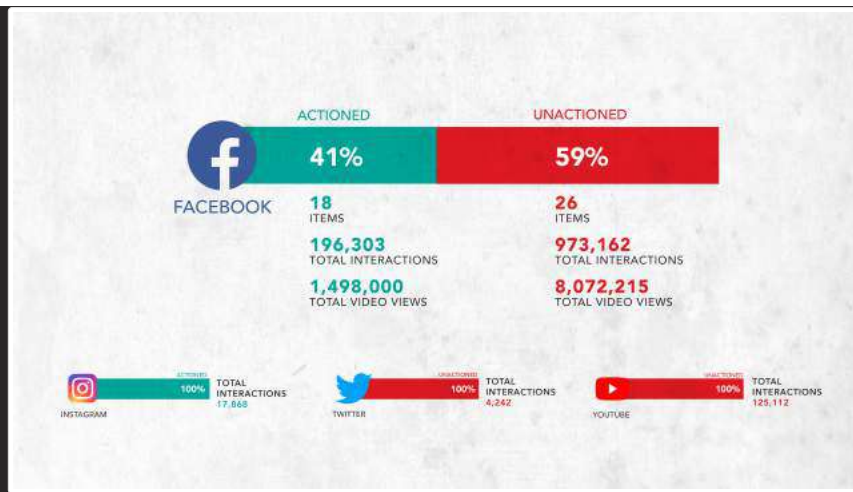
Figure 1: Action taken by platforms in the 'Fauci Emails' case study

All six Instagram posts found and documented by Avaaz made the claim that people were lied to about wearing masks. All posts had a 'missing context' fact-checking label displayed at the time of documentation. At a later check, one of these posts making an identical claim had then been removed from the platform, indicating a discrepancy in the choice of action taken by Facebook-owned Instagram. A lack of transparency from the company means researchers do not have access to further information on why posts are removed.
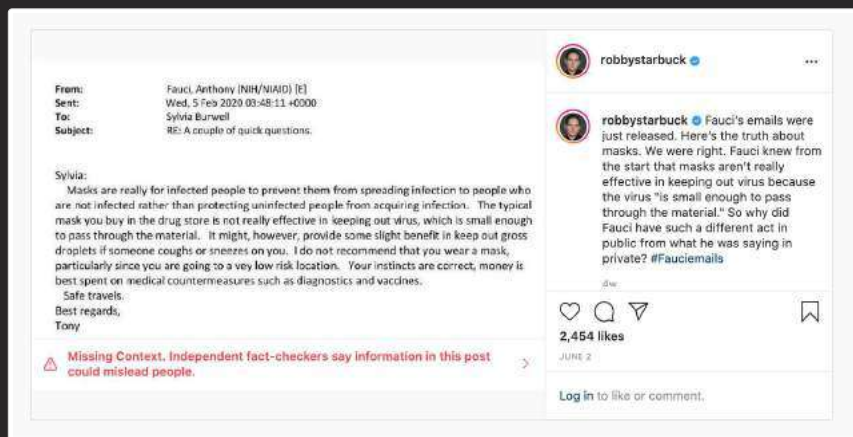
Example 1: Post claiming Anthony Fauci lied about mask efficacy, with Instagram Missing Context label[21]
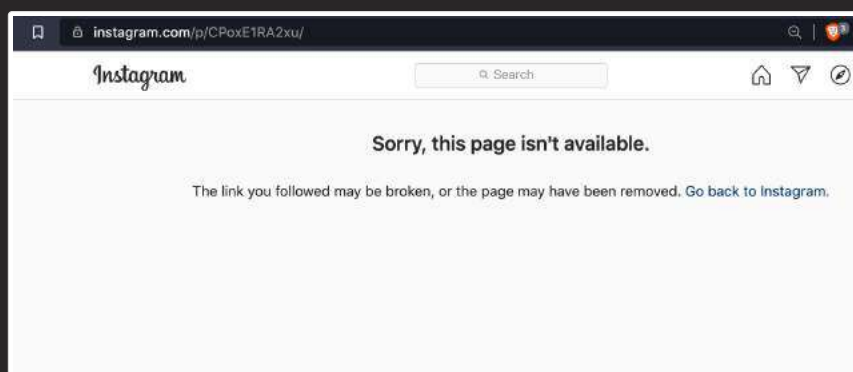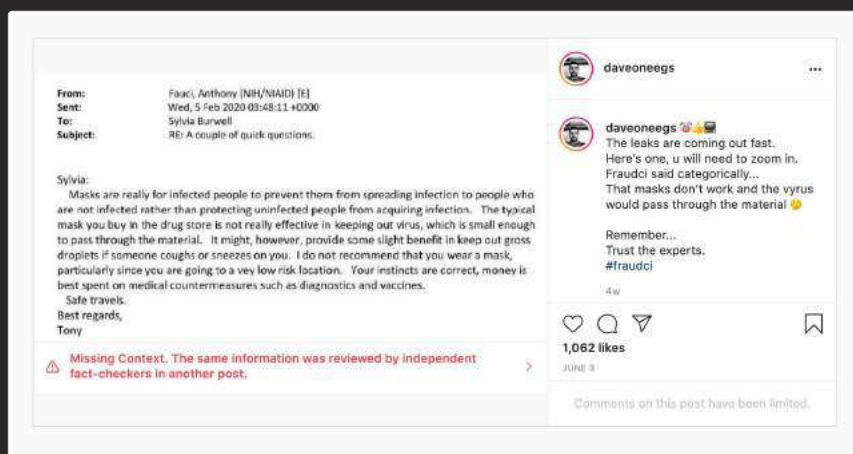
Avaaz also looked at the same claims spreading on Twitter and YouTube, and found that on those platforms, none of these posts had been removed or labelled as false. The current sample is too small to draw a general conclusion but this observation could indicate that the type of action taken by Twitter and YouTube is geared towards removal, rather than labelling, when content is judged to be in violation of their community standards, which was the conclusion of a recent Avaaz study conducted in May 2021. [23]

FACEBOOK'S INCONSISTENCY ISSUE: SOME SIDE-BY-SIDE COMPARISONS

LIZ WHEELER AND TUCKER CARLSON

The following examples show Facebook's inconsistent application of false information labels on content featuring political commentator Liz Wheeler and Fox News host Tucker Carlson. Liz Wheeler makes multiple claims that are also made by Tucker Carlson. However, only Liz Wheeler's video bears a false information label.

Masks don't work
- In her video, Liz Wheeler claims that Anthony Fauci's email to his colleague about mask effectiveness is proof that Fauci knew masks didn't work. She claims that though Fauci knew this was the case, he abandoned science to play politics: "Fauci said in his emails that masks don't work. [...] What science has changed since then? [...] Have we found anything different? No, we haven't found out anything different, Fauci just abandoned science in favour of politics." (19:45)
- Tucker Carlson makes the same claim in his video, saying "Fauci admitted that surgical masks don't really work. They are, in short, a form of make believe. Yet once again while under oath, Tony Fauci claimed exactly the opposite."

Health Feedback is very clear in relation to Anthony Fauci's email about mask effectiveness: *"Fauci's response is consistent with mask-wearing guidance issued by the CDC at that point in time in February 2020, which was based on the limited knowledge that we had of the virus and its spread. Health authorities reversed their stance on mask-wearing later, because new evidence emerged showing that people not displaying symptoms can also spread the virus. Changing one's stance in light of new evidence that contradicts one's original position is part and parcel of the scientific process. Several published studies show that mask-wearing reduces the spread of viral respiratory illnesses like COVID-19."*

COVID is engineered
- Liz Wheeler says Anthony Fauci lied when he claimed conclusively that COVID wasn't a manipulated virus, and he publicly said scientists agreed that it was a naturally emerging virus, despite knowing about an email from California-based virologist Kristian Andersen [24] saying some of the virus's features indicated it might have been engineered (video timestamp 15:15).
- Tucker Carlson makes the same claim, saying Anthony Fauci said conclusively that COVID jumped from a bat to a human. Therefore, Fauci lied because he had seen the emails from Kristian Andersen (6:00).

According to Facebook's fact-checking partner Health Feedback, Anthony Fauci's emails don't prove the claims above: " *Fauci's emails don't provide evidence that the virus was 'likely engineered'. Studies of the virus haven't yet shown signs of engineering, and the virus' genome is consistent with a natural origin. However, the scenario that a naturally occurring virus escaped the laboratory remains a plausible one, although there also isn't evidence showing that a lab escape did occur."*

We note that there are subtleties about how the discussion about the virus' origin has developed over time. The fact-check referenced above refers to what was said in the emails, not debunking every statement Anthony Fauci ever made about the lab leak theory. In public statements, he has been both prudent, and adapted his speech over time, from *"the virus' "mutations" are "totally consistent with a jump of a species from an animal to a human" and "very, very strongly leaning toward this could not have been artificially or deliberately manipulated"* and to telling CNN on June 3, 2021 he still believes *"the most likely origin is from an animal species to a human but I keep an absolutely open mind that there may be other origins," adding, "It could have been a lab leak."* Based on the Politifact fact-check, and the multiple false claims in many of the posts, we are including this example. We also note that cherry-picking and distorting complex narratives is a known disinformation technique geared towards sowing distrust and polarisation, and often fuelling hateful attacks.

LABELLED - Liz Wheeler

UNLABELLED - Tucker Carlson

This June 3 video from Tucker Carlson has no
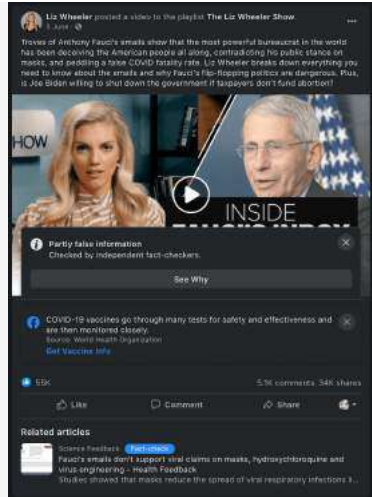
Liz Wheeler in a [video](#) with over 780K views is given a "partly false" information label, for claims that other commentators such as Tucker Carlson also made.

label, yet makes claims that are fact-checked and labelled as false on other posts. The video had been viewed 1.8M times by July, and had over 11K comments, including a significant number of hateful comments and comments calling for violence.

Tucker Carlson's video was also uploaded to [YouTube,](#) and had close to 2M views by July. YouTube displayed no measure or alert relating to the false information in the video, and failed to even display its generic COVID-19 information label that it displays under videos about COVID-19.

Additional note: The [top Facebook sharer](#) of this video shared it with the introduction "Christian Drosten is in the CC (mailing list) in Fauci's email", referring to the German virologist also included in this study.
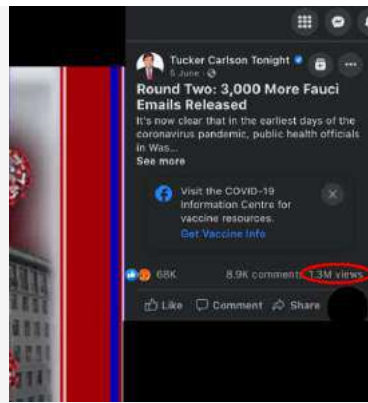
Two days later, on June 5, Tucker Carlson published a second [video](#) about Anthony Fauci's emails, containing many of the same debunked false claims as the first one. This video reached 1.3M views by July, meaning the two videos together racked up more than 3 million views on Facebook alone, airing false information debunked by fact-checkers but carrying no false information label whatsoever.

THE HODGETWINS

This Hodgetwins (a comedy and political commentary duo) [video](#) is an example of how Facebook plays catch-up with repeat misinformers [25] who rack up most of their views and post interactions before a false information label is applied.

Aside from the insults thrown at Anthony Fauci that are hateful and might constitute dangerous speech, [26] such as *"F*** your whole family", "You little short piece of sh*t"* (2:00), the video repeats the debunked false claim that the emails are proof he knew masks didn't work.

- They claim that in the emails, Anthony Fauci admitted that masks did very little, but then came out and said people should wear two masks. "Lie after lie after lie" (2:45).
- "This is nothing new, scientists know these masks are very ineffective in keeping people from getting sick." […] "If you are wearing a mask and you're breathing you're breathing the virus, that's just common sense" (6:50).

[As stated earlier,](#) [Science Feedback](#) is very clear about Anthony Fauci's email regarding mask effectiveness. But despite this, the video circulated with no warning label for over six weeks, indicating that Facebook's AI labelling system is not as efficient as the company claims.

LABELLED

UNLABELLED

This post by The Hodgetwins racked up almost 40K interactions and 313K video views over six weeks, before a partly false information label was added to it. [27]

MRCTV (featuring Brittany M Hughes) AND BENNY JOHNSON (featuring Laura Ingraham)

Below are further examples showing how certain posts remain unlabelled although they make the same false claims as labelled posts, and sometimes even monetise the misinformation spread.

Origins of COVID and cover-up

In a [labelled video](#) posted by conservative online media platform MRCTV, Managing Editor Brittany M Hughes makes these claims:

- Fauci got caught red-handed deceiving the American people about the origins of the coronavirus, which he apparently knew all along might have come from a lab in China. (0:25)
- Fauci's emails show he knew the virus may have come from the lab but continued to claim the virus originated naturally. (4:00)

Meanwhile, conservative television host Laura Ingraham claimed, in a post by political columnist Benny Johnson with no fact-checking label:
- Emails prove that Fauci's statements on the origins of COVID were a cover-up, as he was aware of emails that pointed out the likelihood of engineered origin. (5:05)
- This lab may have created this virus, and these emails show that he and his cronies launched a desperate campaign to cover that up. (9:00)

These claims were fact-checked by Science Feedback and others, but only MRCTV's post carried a partly false information label. Laura Ingraham's June 2 Fox segment was also directly mentioned in Factcheck.org's article about Fauci's emails but her video on Facebook is without a fact-checking label.

Masks

MRCTV's Brittany M Hughes claims the emails prove that Anthony Fauci knew masks were ineffective:
- "Meanwhile he was telling people to smother themselves with facemasks that he was also telling his own coworkers didn't actually work." (0:45)
- It turns out Fauci knew all along these masks don't work, since in an email told his own colleagues that masks are not effective. (5:10)

Benny Johnson's post of Laura Ingraham's segment also makes the same claim, saying that:
- Fauci's email to his colleague is proof that he knew that masks are not effective. (3:00)

Again, the fact-check article by Science Feedback, which is displayed with MRCTV's post, clearly debunks these claims (see full quote above in the Wheeler/Carlson example).

As seen on the screenshot below, Benny Johnson also seems to be trying to monetise this misinformation by asking users to "Become a Supporter" and support his Facebook Page financially.

LABELLED

MRCTV's Brittany Hughes makes a host of false claims in this video, and the video carries a partly false information label.

UNLABELLED

On the other hand, very similar claims can be seen in Benny Johnson's repost of Laura Ingraham's already fact-checked segment, yet no label is applied here.

Additionally, the post appears to invite users to donate money in support of Benny Johnson.

The post had reached over 270K views and 27K interactions at the time of documentation.

Brittany M Hughes also posted the same video on her Facebook page, and it carries the same partly false information label as the identical video posted by MRCTV.

The two videos together reached almost 700K views at the time of documentation.

Benny Johnson also posted an edit of Tucker Carlson's segment on Fox News that we already referenced above. The video is not only unlabelled, but, just like Johnson's previous video, contains a link to a "Support Now" page, monetising false information.

The video had 214K views and over 20K interactions at the time of documentation.

Other high-interaction disinformation posts on the 'Fauci emails' – unlabelled
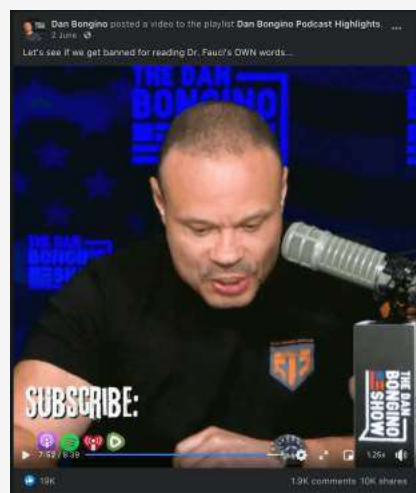
In this video, right-wing influencer Dan Bongino repeats claims that in other posts warranted false information labels, however Facebook did not action his post. The video gathered half a million views.
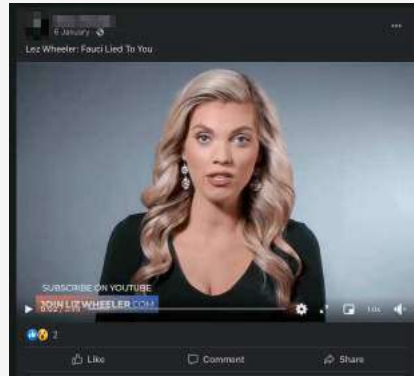
This video from Donald Trump Jr. also features debunked claims about Anthony Fauci's emails, yet carries no labels. This video amassed 761K views in a month.

CLONES AND VARIANTS

Avaaz researchers identified 30 different clones [28] gathering 321,763 interactions and spreading across one or multiple of the following platforms: Facebook, Instagram, Twitter, Telegram and YouTube. Once again, content related to Anthony Fauci dominates. We looked at both posts specifically quoted in fact-checking articles and posts making the same claim but not explicitly mentioned in fact-checking articles. Content with disinformation often takes different forms/post types, and previous Avaaz research has flagged how this can impact the efficacy of the process of applying measures. [29]

Facebook recently claimed it made substantial advances on this exact front: *"We have seen a huge change in behavior across the site because of COVID-19, a huge increase in misinformation that we consider dangerous,"* Facebook CTO Mike Schroepfer was quoted as saying in a May 2020 article in TechCrunch. *"What we want to be able to do is detect those things as being identical because they are, to a person, the same thing,"* Schroepfer said. *"Our previous systems were very accurate, but they were very fragile and brittle to even very small changes. If you change a small number of pixels, we were too nervous that it was different, and so we would mark it as different and not take it down. What we did here over the last two and a half years is build a neural net-based similarity*

detector that allowed us to better catch a wider variety of these variants again at very high accuracy.”

Liz Wheeler video claiming: 'Fauci lied to you again'

Example 1: Two facebook posts sharing the exact same video, one linking to a fact-check article debunking the false claims and the other live and unactioned. Also note a misspelling of Wheeler's name on the right hand example (as observed on the Ingraham post above): Lez Wheeler.

Other platforms' actions
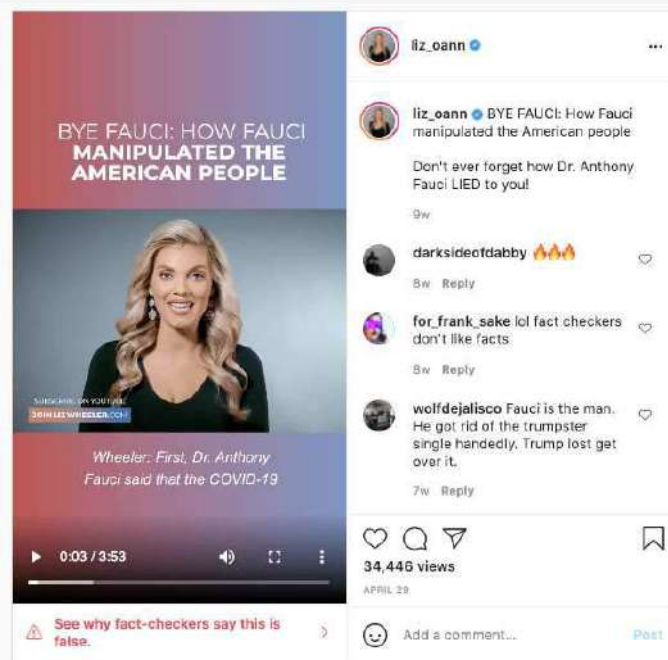
Example 2: False information note provided by Instagram, as per July 6, 2021.
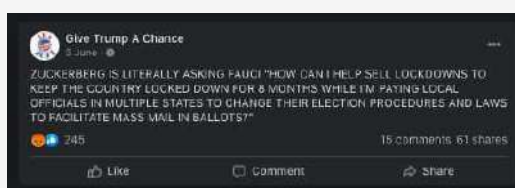

Example 3: Neither Twitter nor YouTube took action on these false claims.

Anthony Fauci helping Mark Zuckerberg 'sell lockdowns'

[Example 1:](#) Missing context label applied by Facebook.

[Example 2:](#) post unactioned on Facebook.

Anthony Fauci's leaked emails meme

"Me reading Fauci's leaked emails after losing friends and being told I'm crazy for a year because I said he was a fraud"

[Post 1a](#)

[Post 1b](#)

Example 1: Two memes received the missing context label and links to the same fact-checking articles - identical action from Facebook - despite the posts' variation: (Example 1a shares a screenshot from another user's post.)

Example 2: Post 1c is identical to Post 1b yet is granted an extra fact-check article to justify the "missing context label". Post 1d uses a different image and has an added "Dr." to refer to Anthony Fauci in the text yet it has received an identical measure process to post 1c. Post 1e is completely unactioned by the platform.

Section 2: Violent Threats and Insults Targeting Scientists - a Closer Look

Despite Facebook's repeated reassurance – *and their confidence that "[they] can build on [their] efforts so far, further improve [their] systems, and do more to protect people from harmful content related to the pandemic"* – it was easy for Avaaz researchers to find dehumanising language, death threats, unchecked repetition of false claims and dangerous speech in a number of instances, as well as groups supporting the armed far-right soldier who threatened to harm Marc Van Ranst.

Platforms claim to act strongly against violence and threats. Facebook Community Standards on violence and incitement provide: *"We aim to prevent potential offline harm that may be related to content on Facebook. While we understand that people commonly express disdain or disagreement by threatening or calling for violence in non-serious ways, we remove language that incites or facilitates serious violence. We remove content, disable accounts and work with law enforcement when we believe there is a genuine risk of physical harm or direct threats to public safety. We also try to consider the language and context in order to distinguish casual statements from content that constitutes a credible threat to public or personal safety. In determining whether a threat is credible, we may also consider additional information like a person's public visibility and the risks to their physical safety."*

As for Twitter, their Violent Threats Policy reads: *"You may not threaten violence against an individual or a group of people. Healthy conversation is only possible when people feel safe from abuse and don't resort to using violent language. For this reason, we have a policy against threatening violence on Twitter. We define violent threats as statements of an intent to kill or inflict serious physical harm on a specific person or group of people."*

Avaaz supports a robust right to freedom of expression. Individuals are entitled to share their opinions and critiques, even if they amount to insults and may be vile or reprehensible -- we are not advocating that platforms censor this speech. However, there is a big difference between one or two low-interaction posts that, taken alone, may not amount to a credible threat, and when a torrent of such posts and comments creates an ecosystem that does become dangerous -- and should trigger action from platforms. As recent whistleblower testimony revealed, Facebook only actions less than 1% of violent content [30] -- and even though ways to combat misinformation and violence exist, the company has chosen to not to prioritise the most robust policies needed to counter these harms.

We firmly believe that the kind of harmful content such as the violent threats and calls to commit violent acts that we share below should trigger closer moderation attention, including possible removal. This harmful content contains some credible threats against Anthony Fauci, Christian Drosten and Marc Van Ranst as each scientist has received similar threats in the past and some of these threats have been acted upon, requiring the intervention of law enforcement: Dr. Fauci and his family now have bodyguards after being repeatedly threatened with death online and in person; Christian Drosten has received death threats and suspicious packages; and Marc Van Ranst was forced into hiding after becoming the target of an armed far-right soldier.

By acting on violent threats and calls to commit violent acts, platforms also safeguard scientists' right to the freedom of expression by mitigating the chilling effects of this dangerous, harmful content. An October 2021 *Nature* news article featuring the stories of scientists who received death threats and threats of physical or sexual violence after speaking to the media about COVID-19 underscores the chilling effect of these threats. [31] *Nature*'s survey of scientists further noted, in the most-repeated answers of respondents to the question about "how scientists could be better supported," a call by respondents for better governance of social media companies and a need for platforms to be more proactive in removing threats or harassment. The survey further "suggests that even though researchers try to shrug off abuse, it might already have had a chilling effect on scientific communication. Those scientists who reported higher frequencies of trolling or personal attacks were also most likely to say that their experiences had greatly affected their willingness to speak to the media in the future."

The violent nature and intensity of the threats and insults documented by Avaaz researchers as well as the spread of disinformation and the cross-fertilisation between false information, threats and insults, also in the context of recent examples of online threats and attacks translating into offline violence, raises serious questions about the danger of allowing such speech on platforms like Facebook.

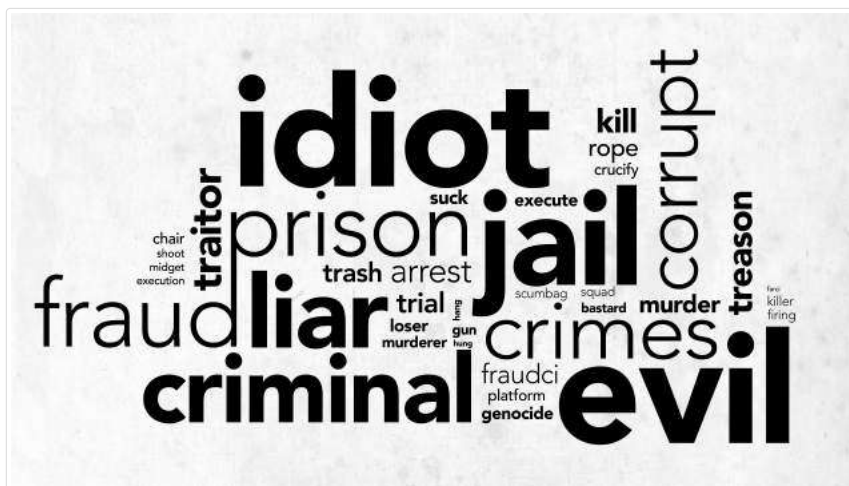## A TORRENT OF VIOLENT THREATS AND INSULTS IN THE COMMENTS

Image: Top negatively connotated words[32] appearing in the three most commented-on posts from this research

From our database of items targeting the three scientists, Avaaz researchers collected all comments [33] from the three posts that gathered the most comments overall. [34] The three posts gathered a total of 77K comments and were videos targeting Anthony Fauci.

We analysed the language of the comments in terms of specific, offensive terms sourced from a vocabulary curated by Avaaz researchers, [35] as well as overall language [36] present in the comments.

Keyword	Total Count	Total Likes of Comments Where Present
prison	509	2124
treason	234	1034
genocide	106	838
hung	36	535
traitor	261	335
kill	192	228
squad	34	92
firing	60	81
chair	27	54
crucify	7	24
hang	53	21
execution	16	5
execute	3	1

Table: List of offensive terms sourced from the three most commented-on posts from this research[37]

of terms in these two dimensions. We measured both the total count of comments in which each term of interest occurred, as well as the total count of occurrences of the terms. This allowed us to have something of a proxy to distinguish between comment topics and term emphasis. The assumption here is that the more repeated a given term is within a comment, the more emphasis that term is being given.

To eliminate terms that do not offer any contextual value but are repeatedly used throughout communication, we employ a common practice of removing stop words. Stop words include articles, interjections, pronouns and the like. More details are provided in the Technical Appendix of this report.

While inoffensive when looked at as single words, terms like "squad", "chair", "firing" come up in a context of execution references, and as such should be triggering closer moderation of content.

The analysis consisted of simple frequency counts

The deep-dive into these three examples revealed worrying findings, including threats of violence , which were applauded by other commenters.

In a further chilling observation, Avaaz found that even single comments under high-interaction posts could amass hundreds of interactions in turn. For example, a few comments calling for Anthony Fauci to be tried and/or executed had interactions in the hundreds, enabling hate and disinformation to spread in the comment threads as well as via the original (often more careful) post using a "dog whistle". [38]

The item in our research data sample that received the largest number of comments on any of the three scientists is a video from TV host Meghan McCain, shared by conservative political commentator Ben Shapiro. Although the claims made in the video do not fall under the category of disinformation and therefore do not have a fact-check, the post came to our attention because of the high engagement it received, meriting a closer look. This opinion piece from Meghan McCain, in which she argues that the Biden administration should remove Anthony Fauci from office and replace him with someone that understands science, attracted over 45K comments. Our analysis below shows how it was the "trigger" for dangerous speech and threats of violence.

Example 1 of a comment under Ben Shapiro's post: "Hang em high"

Example 2 of a comment under Ben Shapiro's post: "I think Biden/Harris need to be removed (..) or executed"

The second most commented-on post is a Fox News YouTube video in which TV show host Tucker Carlson says Anthony Fauci deserves to be under criminal investigation and comments on his supposed "lies" about the origins of COVID, guidance on mask-wearing and the effectiveness of hydroxychloroquine. The post had over 21K comments at the close of research on July 8, 2021.

Example 1: A comment under Tucker Carlson's YouTube video: "Where are all the good old fashioned assassins when you need them? Theres a long list of scumbags that need executed, with total just cause. We all know the law wont punish them, so we can only pray for a vigilante, a hero, a real true life punisher, like Frank Castle! 😈 📚📚📚📚📚"

Example 2: A comment under Tucker Carlson's YouTube video: "Bring back assassinations!"
The third post having collected the most comments (11K) is the same YouTube Fox News video but this time, shared on Facebook.
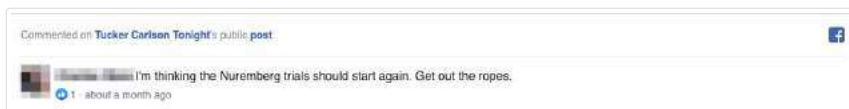
Example 1: A comment under Tucker Carlson's YouTube video shared on Facebook: "I'm thinking the Nuremberg trials should start again. Get out the ropes."

Example 2: A comment under Tucker Carlson's YouTube video shared on Facebook: "Sentence Fauci before he goes for plastic surgery and changes identity. The Dems will protect him from justice. Life sentence of Fauci for crime against humanity, international genocide - **690 likes.**
[Reply]: "you are too kind, he needs to be executed once found guilty."

Example 3: A comment under Tucker Carlson's YouTube video shared on Facebook: "Well looks like trouble for the doc 😂☐😂☐😂☐... some one should throw him a rope...around his neck..☐☐☐☐"

Example 4: A comment under Tucker Carlson's YouTube video shared on Facebook: "This is all coming out now because he is about to be hung out to dry. I'm sure he'll then disappear or have a mysterious accident." **62 replies/458 likes**

The Avaaz team also conducted a comment analysis on top posts targeting the three other scientists present in this study but found no signs of similarly worrying insults. There is a lack of transparency and consistency regarding how Facebook approaches these kinds of threats across localities.

More examples of calls for execution here:
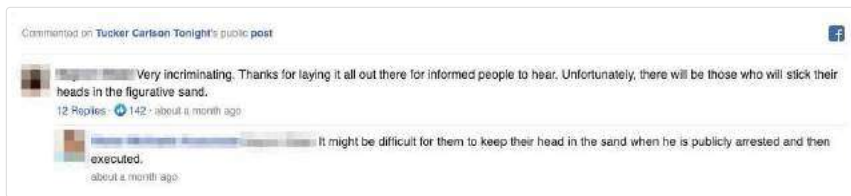
TWITTER HASHTAG CAMPAIGNS

A qualitative look at popular Twitter hashtags in posts related to debunked false claims gave a further glimpse of the abuse scientists are exposed to. While the list of hashtags Avaaz examined is not conclusive, our examples show the type of content in circulation attacking scientists and how widely it spread. Below is a selection of what Avaaz documented; further screenshots are available on request.
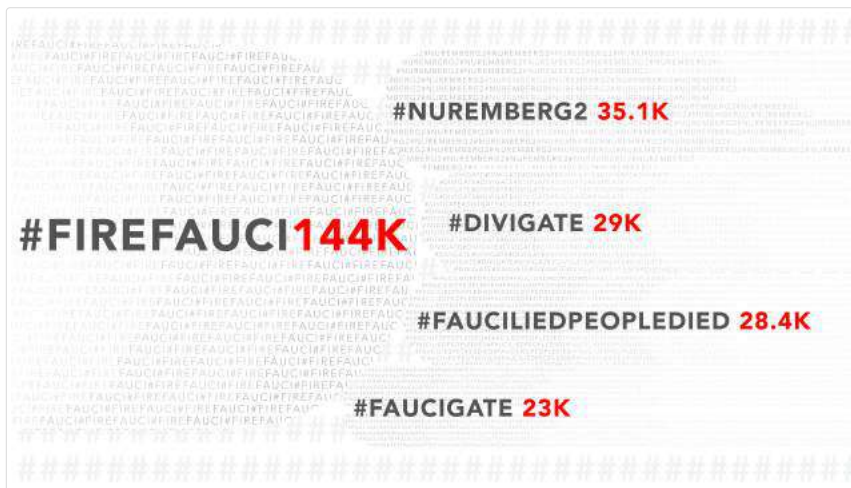
Twitter hashtags found in posts related to debunked claims and the number of tweets for each hashtag between January and June 2021.

#FireFauci

By far the most popular of the hashtags examined for the research period was #FireFauci, which garnered more than 144K tweets between January and June 2021. It had already been trending at various times in 2020 (most notably, former US President Donald Trump retweeted the #FireFauci hashtag in April 2020). The hashtag is used in abusive and hateful tweets against not only Anthony Fauci but also other scientists, and it has spread in at least 46 countries and territories [39] and in six different languages. [40] [41]

The above tweet was posted to 4.5K followers.[42]

#FauciLiedPeopleDied

This hashtag became popular after Republican Rep. Marjorie Taylor Greene started using it as a slogan for a campaign to attack Anthony Fauci, as part of an ongoing onslaught against him. Over 28K tweets, including tweets containing disinformation and tweets calling Anthony Fauci a mass murderer or worse used the hashtag between January and June 2021.

Other hashtags in tweets where Avaaz found hateful content include #FauciForPrison (1350 tweets between January and June 2021), #FuckFauci (917 tweets), as well as #FraudFauci, #ArrestFauci, #FauciGate and #FauciLied which together had a tweet count of 43K during the research period. The tweets included calls for Anthony Fauci's execution/hanging.

Paul
@ConstitnFlMan

Fire Hell, what he did to this country is TREASON! Hang him! #FauciLied #FauciEmails #FauciFraud #JailFauci

> **Marjorie Taylor Greene** 🇺🇸 ✓ @mtgreenee · Jun 2
> After reading through Anthony Fauci's leaked emails, it's more clear than ever that our country needs to #FireFauci
> Show this thread

2:36 PM · Jun 2, 2021 · Twitter for iPhone

44

#Nuremberg2, #Nuremberg2021

Tweets using these hashtags call for international trials against what they consider a global conspiracy to mass murder the millions who died of COVID-19. Anthony Fauci and other scientists are among the targets of tens of thousands of tweets using these hashtags.

🕎**BATSHEVA**🕎
@ElianaBenador

Fauci should be held prisoner and immediately sent to Germany where Reiner Fullmich will begin #Nuremberg2021 in my birthday, July 3.

1,000 lawyers. Thousands of doctors.
THEY WILL BE ON THE PROSECUTION SIDE.
ALL UNITED TO SAVE MANKIND FROM THE ENSLAVING GLOBALISTS.

🙏

> **Ezra Levant** 🍁 ✓ @ezralevant · Jun 3
> I wonder if Anthony Fauci is about to be Jeffrey Epstein'd.

2:36 PM · Jun 3, 2021 · Twitter for iPhone

4 Retweets **12** Likes

Note: Reiner Fuellmich, mentioned in this tweet, is a German-American lawyer active in the anti-vaxx/anti-lockdown scene.

#DiviGate, #EpidemischeLuege, #DrostenGate

These hashtags trended in Germany. The #DiviGate hashtag appeared in 29K tweets and spread online after the publication of a position paper arguing that the threat to intensive care capacity had been grossly exaggerated and following an interview with the paper's lead author in the German newspaper Die Welt. The position paper was found to have significant flaws and fact-checkers found key claims in it to be false. Nonetheless, lockdown skeptics and the German right, including the far-right political party Alternative für Deutschland, jumped on the hashtag.

The #EpidemischeLuege and #DrostenGate hashtags appeared 3.7K and 500 times respectively during the research period, the first mostly in COVID denial contexts and the latter in tweets attacking Christian Drosten's credibility and record of work. Avaaz found that tweets including these hashtags contained less outright violent threats and insults against scientists and/or healthcare workers, and more generalised misinformation or negative comments, including against German politicians.

FACEBOOK PRIVATE AND PUBLIC SUPPORT GROUPS FOR JÜRGEN CONINGS

Marc Van Ranst, a Belgian virologist and prominent expert in the country's response to COVID-19, is a clear example of how extreme "anti-scientist" attitudes spreading online can lead to offline consequences. Van Ranst was the subject of criticism and mocking online, but it didn't stop there - he and his family had to go into hiding in May 2021 when a Belgian soldier, Jürgen Conings, made death threats and stalked Van

Ranst's family.

Conings was an advocate for far-right politics and [on a watchlist for suspected extremists.](#) After going missing for over five weeks, [he committed suicide](#) and was found dead on June 21, 2021, with an arsenal of weapons and a note saying he "could no longer live in a society where politicians and virologists have taken everything away from us".

Conings gained a strong following on social media as a result of his disappearance and subsequent death, with Facebook groups created in his support counting over 50K members (before [reportedly being taken down by the platform](#)). Despite this, very few of the violent threats and insults targeting Van Ranst or posts blaming him for Conings' death can be found in the remaining groups and pages. Instead, these groups and pages (see list below) spread conspiracy theories concerning the government and the circumstances of Conings' death. Still, we noted that posts and comments describe Van Ranst as, for example, disgusting, narcissistic, mentally ill, or a liar.

By July 12, 2021, Avaaz was still able to document nine Facebook groups supporting Jürgen Conings (screenshots available on request; names and "About" sections translated by Avaaz).

- **"Support Jurgen Conings"** [Facebook group](#) **with 186 members.** *Its description says: "TO ALL WHO SUPPORT ❤JÜRGEN CONINGS ❤ FOR THE OTHERS GO GET YOURSELF FUCKED IN THE ASS ELSEWHERE AND CONTINUE TO SUPPORT DUTROUX"*
- *"Jurgen our hero" - [private group](#) with 486 members.*
- *"All with jurgen …. It's a good policy to make people believe that they are free." - [public group](#) with 73 members.*
- *"We stand up for Jurgen! RIP NEVER FORGET!" - [public group](#) with 53 members.*
- *"As one behind Jürgen (RIP Jürgen)" - [private group](#) with 27 members.*
- *"Support for Jurgen Conings" - [public group](#) with 268 members.*
- *"I support Jürgen - We all have a Jürgen in us" - [public page](#) with 41 followers.*
- *"Support Jürgen Conings" - [public page](#) with 14 followers.*
- *"Jürgen in force - solidarity" - [public group](#) with 9 members.*
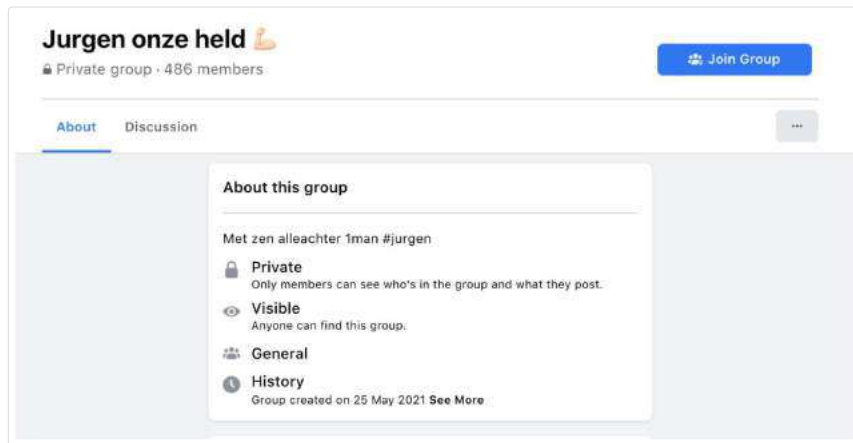
Section 3: Online Coverage and Sentiment Analysis

REPEAT MISINFORMERS ARE AMONG MOST INTERACTED-WITH OUTLETS WRITING ABOUT SCIENTISTS

As part of this research, Avaaz looked into the top performing articles shared on social media [45] in the first half of 2021 mentioning any of the three scientists. We started out from curiosity about where these scientists were being mentioned the most -- not from a curated list of outlets Avaaz had come across during disinformation research.

For Anthony Fauci and Christian Drosten, we found that a different set of outlets showed up when searching for the person's full name e.g. "Christian Drosten" or simply the surname e.g. "Drosten". For Marc Van Ranst, the results were almost identical - see below. Here's an overview of the top outlets that came up:

Platform	Anthony Fauci	Platform	Fauci
nbcnews.com	Anthony Fauci	npr.org	Fauci
washingtonpost.com	Anthony Fauci	dailywire.com	Fauci
cnn.com	Anthony Fauci	nbcnews.com	Fauci
forbes.com	Anthony Fauci	dailywire.com	Fauci
dailywire.com	Anthony Fauci	foxnews.com	Fauci
npr.org	Anthony Fauci	nytimes.com	Fauci
theguardian.com	Anthony Fauci	dailywire.com	Fauci
foxnews.com	Anthony Fauci	npr.org	Fauci
edweek.org	Anthony Fauci	rumble.com	Fauci
washingtonpost.com	Anthony Fauci	dailywire.com	Fauci

Platform	Christian Drosten	Platform	Drosten
youtube.com	Christian Drosten	youtube.com	Drosten
focus.de	Christian Drosten	focus.de	Drosten
spiegel.de	Christian Drosten	republik.ch	Drosten
spiegel.de	Christian Drosten	ndr.de	Drosten
der-postillon.com	Christian Drosten	faz.net	Drosten
dvhn.nl	Christian Drosten	reitschuster.de	Drosten
kla.tv	Christian Drosten	t-online.de	Drosten
morgenpost.de	Christian Drosten	wochenblick.at	Drosten
rtl.de	Christian Drosten	nordkurier.de	Drosten
bild.de	Christian Drosten	bild.de	Drosten

Platform	Marc Van Ranst	Platform	Van Ranst
dhnet.be	Marc Van Ranst	dhnet.be	Van Ranst
youtube.com	Marc Van Ranst	youtube.com	Van Ranst
redactie24.be	Marc Van Ranst	redactie24.be	Van Ranst
vrt.be	Marc Van Ranst	vrt.be	Van Ranst
nieuws7.be	Marc Van Ranst	nieuws7.be	Van Ranst
nieuwsblad.be	Marc Van Ranst	bbc.com	Van Ranst
nieuwsblad.be	Marc Van Ranst	nieuwsblad.be	Van Ranst
nieuwsblad.be	Marc Van Ranst	nieuwsblad.be	Van Ranst
nieuwsblad.be	Marc Van Ranst	nieuwsblad.be	Van Ranst
socnonmars.com	Marc Van Ranst	bbc.co.uk	Van Ranst

When looking at articles that mention all three scientists in their headline, ranked by interactions, the top 20 platforms and outlets concern Anthony Fauci and Christian Drosten:

	Platform	Sharing Count	Total interactions
1	youtube.com	130	12,163,157
2	dailywire.com	46	2,985,019
3	foxnews.com	56	2,643,656
4	rumble.com	57	2,343,553
5	cnn.com	31	1,376,794
6	npr.org	11	1,054,032
7	nypost.com	12	755,419
8	nytimes.com	9	657,378
9	cnbc.com	10	638,255
10	theblaze.com	21	619,042
11	breitbart.com	41	618,312
12	nbcnews.com	7	541,188
13	thehill.com	15	540,313
14	bongino.com	11	527,037
15	washingtonpost.com	14	517,648
16	newsweek.com	18	406,031
17	newyorker.com	4	383,651
18	washingtonexaminer.com	13	364,961
19	babylonbee.com	6	353,579
20	forbes.com	7	312,653

Now we took a closer look at how these 20 high-interaction websites fared when looking at them with a disinformation lens. Of these 20 websites there are 16 news outlets, 2 video sharing platforms (YouTube and Rumble), 1 personal commentary site (bongino.com) and 1 satire website (babylonbee.com). We found that some of these websites have already been mentioned in previous Avaaz reports for making false and misleading claims.

Fox News was already included in three previous Avaaz reports and in many additional Avaaz briefings, for making false claims to millions of viewers on climate change and COVID-19. The most recent examples are in the report titled "Facebook's Climate of Deception" from May 2021, where just three posts by Fox News

amounted to 31% of total estimated views of the entire report. None of the posts received a Facebook fact-check label despite sharing false claims fact-checked by the platform's independent partners.

Dan Bongino's page was also listed in a previous Avaaz report "Facebook: From Election to Insurrection", released in March 2021. The report shows that engagement on Bongino's Facebook page grew despite the platform claiming to have demoted the reach of repeat sharers of misinformation.

Ben Shapiro and the Daily Wire were already flagged in a previous Avaaz brief on viral disinformation about George Floyd, Jacob Blake and Breonna Taylor. That report pointed to a suspected inauthentic coordination between the Daily Wire, Ben Shapiro and other pages, sharing a Daily Wire article that falsely claimed that George Floyd died due to an overdose.

To get an up-to-date picture on how these websites fare when it comes to factual reporting, researchers looked at fact-check articles by Facebook's partners for the 18 websites on this list that produce their own content, [46] to see how many times each of the websites have been fact-checked, on any issue, so far in 2021. [47]

We found that for outlets on this list, the overwhelming majority of fact-checks that draw attention to false or misleading content were issued for Fox News. Fact-checkers published 41 articles so far in 2021 that mention Fox News or a Fox News anchor, with topics ranging from climate change to COVID-19 and with fact-check ratings of "Misleading", "False" or "Pants on Fire".

Satirical website Babylon Bee has the second highest number of fact-checking articles in 2021, with a total of 17, less than half of fact-check articles debunking Fox News. Babylon Bee claims on its website that "The Babylon Bee is the world's best satire site". However, most fact-checking articles note that many users who shared mainly screenshots of fake Babylon Bee headlines on social media did not seem aware that they were sharing false or fake information by a satirical outlet, but instead genuinely believed they were sharing truthful information.

Non-mainstream websites like Breitbart or the Daily Wire, known to have spread fake news in the past, as well as the New York Post, a conservative tabloid, had much lower numbers of fact-checking articles debunking their claims than Fox News. The New York Post is mentioned seven times by fact-checkers, while Breitbart (formerly headed by Steve Bannon) has six fact-check mentions, and claims by the Ben Shapiro-founded conservative outlet The Daily Wire, were debunked three times so far in 2021.

Mainstream outlets such as CNN, the Washington Post and the New York Times were featured in fact-check articles only once so far in 2021, for a correction that did not change the substance of their story.

MORE EMOTIVE ARTICLES GET MORE INTERACTIONS

Next, we were interested in the question of whether negative and/or emotive articles translated into higher interactions, and any other signals/observations we could find.

As explained in Section 3, Avaaz researchers identified widely-circulating articles, sometimes consisting of sensational headlines and harmful narratives targeting prominent scientists, namely Anthony Fauci, Christian Drosten, and Marc Van Ranst. We used the compiled data to perform a sentiment analysis on the language used in the various article headlines.

The findings supported our general intuition: on social media platforms, the more emotive the content is, the more inclined users are to interact with it. [48]
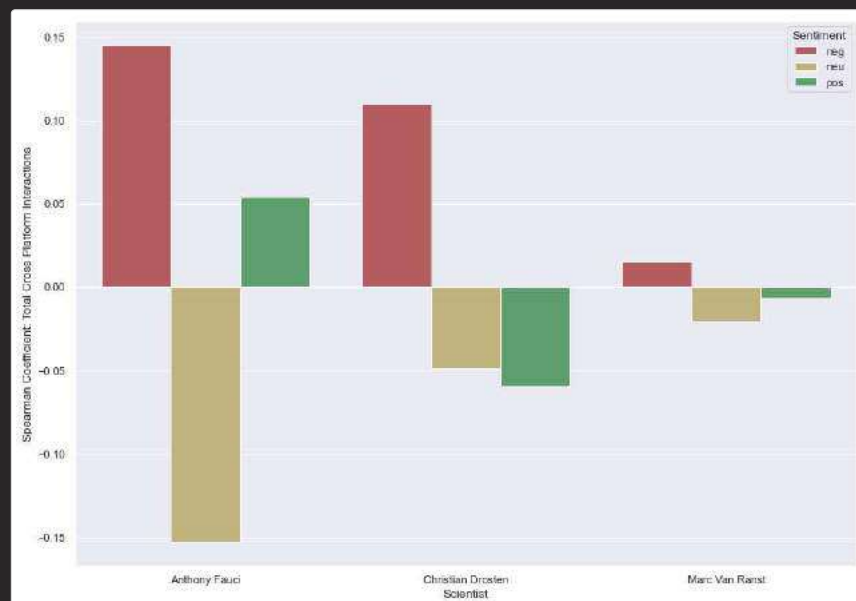
For all three scientists, the greatest positive correlation measure exists between **negative scores** and **total cross platform interactions.** For each sentiment score component, we compute correlation coefficients with platform interaction counts. We used the Spearman coefficient which is not constrained by linear relationships between variables. As long as both variables move in relative position with one another (i.e., are monotonic in relation), they are treated as being correlated. More on this in the Technical Annex.

When further exploring the authors of high-interaction URLs, some familiar names of people from Section 1 of this investigation who shared disinformation showed up:
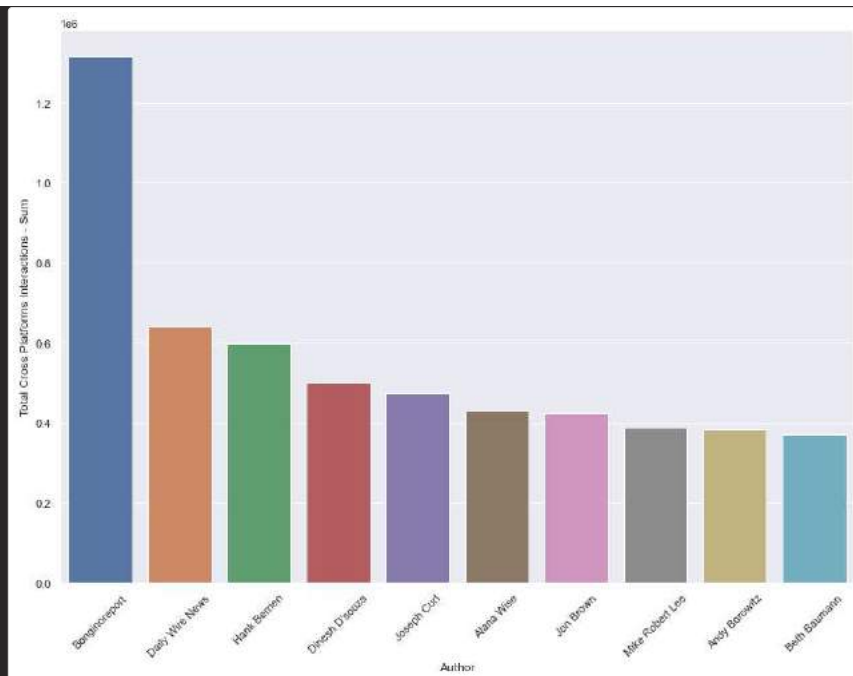
Total cross-platform interactions by author - about Anthony Fauci

In the case of Christian Drosten, a now deleted video on YouTube garnered by far the most interactions, far ahead of any article on German mainstream media. [49] Avaaz also noted the presence of Russia Today Deutschland (RT DE) and Reitschuster for articles related to Christian Drosten, two outlets previous Avaaz research has identified as repeatedly spreading disinformation. For Marc Van Ranst, negative/emotive headlines were also correlated with higher total cross-platform interactions, but the range of sentiment scores was smaller than for Fauci and Drosten.

This initial research thus adds further data and credence to the assumption that it "pays" (in interactions) for outlets to be negative/emotive about these scientists – which in turn may fuel a more polarised online debate and whip up some of the attacks and abuse documented in this report.

What's the Solution?

Avaaz has been pushing for regulatory measures to address disinformation on social media platforms for years and has developed principles and actionable policy solutions based on peer-reviewed independent academic research. These solutions rest on the pillars of transparency, responsibility and freedom of speech. Many conversations with academics, lawmakers, civil society representatives and social media executives - but also, crucially, people directly impacted by Big Tech's offline harm - have convinced us that taking action is an urgent, feasible moral imperative. Both the EU and the US have the chance to ensure platforms do not continue to score themselves on metrics they choose themselves, by doing the following:

Regulating social media

In Europe, a new Code of Practice on Disinformation and then the Digital Services Act (DSA) could revolutionise the protection our democracies need against the dangers of disinformation. The current draft of the DSA is a major step forward in democratic regulation, focussing on restraining the damage caused by the business models of the platforms whilst protecting free speech. It must provide for transparency and accountability for the biggest social media platforms, and require open and accountable reporting by the platforms on their efforts to combat the harmful speech dealt with in this report. At the time of this writing, negotiations on the draft DSA are underway. Members of the European Parliament and representatives of Member States on the Council of the European Union should support amendments which:

- **Increase transparency** by ensuring that all platform reporting under the DSA is public; that European authorities, not the companies, decide whether any information should be confidential; and that researchers, journalists and civil society are provided with access to data from the platforms.
- **The negative impacts of algorithms** by shedding light on how they operate through additional, specific reporting requirements; and by ensuring that algorithms and algorithmic processes are a part of the risk assessment and mandatory mitigation system that is at the heart of the DSA.
- **Build the right benchmarks** by making sure that platforms assess the risks posed by their services to *all* fundamental rights, and by including civil society and other stakeholders in those assessments.
- **Make Code of Conducts a powerful and flexible tool** to fight harmful content, and create a strong incentive for platforms to join, by including them as a mitigation tool, and make sure a broad set of stakeholders and institutions is involved in drafting them.

But as the DSA will take years to be adopted by Member States, it is equally important that we focus our attention on the drafting of a new European Code of Practice on Disinformation. In light of the failures of the previous Code, the European Commission has given welcome guidance on ways it can be strengthened. The Signatories should follow that guidance, including by:

- **Stronger commitments** that apply to a broader range of activities relevant to the spread of disinformation, including more support for fact-checking.
- **Key performance indicators** to improve monitoring and reporting under the new Code.
- **Access to data on disinformation** to independent researchers.

In the US, our conversations with government officials, legislators, and allies in civil society make it clear that **the Biden administration should** appoint a senior White House official who would be exclusively dedicated to mobilizing a whole-of-government response that addresses disinformation while protecting the freedom of expression, working in close cooperation with Congress, civil society, and federal agencies. Meanwhile, **Congress must pass comprehensive tech accountability legislation** as soon as possible, and certainly before next year's midterm elections.

Correcting the Record: Ensuring transparency towards users exposed to disinformation

The large majority of people exposed to disinformation on social media platforms will never know - that is why retroactive notifications are important. Previous reports by Avaaz have shown how even when labels are applied, they can take weeks to be posted, and millions of users who have been exposed in that time will never know they have seen dangerous misinformation. In this report, a video by The Hodgetwins remained unactioned for over six weeks; and repeat misinformers like Tucker Carlson could push a single video with several false narratives to thousands of people. A decade of research on debunking disinformation shows that transparency towards users is one of the most effective tools in fighting it, and recent - albeit limited - forays by Facebook in this direction on what the platform termed "harmful" COVID-19 misinformation suggest that it is possible. Research has shown that effective notifications can reduce belief in false information by 50%.

Detoxing the algorithm

Social media companies' 'curation algorithms' decide what we see, and in what order, when we log on. They're designed to keep us glued to the screen and always wanting to come back for more. They succeed in part by pushing emotionally charged, outrageous and polarizing content to the top of our feeds. That's one of the big ways hatred, disinformation, and calls to political violence go viral.

Three Steps to Stop the Spread and Detox the Algorithms:

1. **Detect and downgrade known pieces of misinformation and all content from systematic spreaders.** All platforms should stop accelerating any content that's been debunked by independent fact-checkers, as well as all content from pages, groups, or channels that systematically spread misinformation.

2. **Demonetize systematic spreaders.** When an actor has been found to be systematically posting fact-checked content, the platforms must ban these actors from advertising and from monetizing their content.

3. **Inform users and keep them safe.** Users should be informed through clear labels when they're viewing or interacting with content from actors who were found to be repeatedly and systematically spreading misinformation, and be provided with links to additional information.

Detox the Algorithm **protects free speech** by requiring that all content remains available and **guarantees users due process** -- the right to be notified and to appeal the platforms' decisions. It also **protects freedom of thought** by slowing the spread of harmful lies that change how our brains are wired.

Enforcing existing policies and acting on content that creates a dangerous ecosystem

As demonstrated by this report, hateful language, threats of violence and insults proliferate in the comments under some of the most interacted-with content about prominent scientists on social media and Facebook and other tech platforms insufficiently protect exposed individuals -- whether they're family members of victims of police brutality, or scientists speaking out about COVID-19 from false claims or (at times coordinated) campaigns of abuse. Facebook and other platforms should better enforce existing policies, and trigger closer moderation attention when ecosystems of such threats emerge. An announcement by the platform to remove some content, like comments, that amount to "mass harassment" by an individual is a positive step, but once again puts the weight of action with the person at the receiving end as they would be expected to provide information and context.

Avaaz and other civil society organisations are working with experts, regulators and tech harm survivors to design such policies. Solutions that protect freedom of expression, users' health, and our democracies from the threat of misinformation are available. What is currently needed is the political will from leaders in Europe and the US to ensure that the platforms are regulated and held accountable for the harms they cause to society and the will from platforms to meet them halfway and enter into Codes of Conduct that promote best practice and cast light on the success or failure of platforms to combat these harms.

Methodology and Data Interpretation

SECTION 1: DISINFORMATION ABOUT PROMINENT SCIENTISTS

The Avaaz investigative team analysed misinformation content targeting Anthony Fauci in the US, Christian Drosten in Germany and Marc Van Ranst in Belgium, fact-checked between January 1, and June 30, 2021, and meeting the following criteria:

1. Were fact-checked by Facebook's third-party fact-checking partners or other reputable fact-checking organisations. [50]
2. Were rated "false" or "misleading'' or any of the following ratings according to the tags used by the fact-checking organisations in their fact-check article:
   - Inaccurate, Misleading, Misrepresented, Misrepresenting, Missing context, No evidence, Not true, Partially false, Partly false, Wrong, False
3. Could cause harm by undermining public health. Avaaz has included content that impacts public health in the areas of:
   A. *Creating distrust in health institutions, health organisations, medical practice and their recommendations:* e.g., false information implying that clinicians or governments are creating or hiding health risks.
   B. *Fearmongering:* health-related misinformation that can induce fear and panic, e.g., misinformation stating that the coronavirus is a human-made bio-weapon being used against certain communities or that Chinese products may contain the virus.
4. Included dehumanising language, death threats, insults or degrading language towards any one of the scientists selected for this research and present within the social media publication itself or in the comments below it.

Methodology for measuring Facebook labelling and removals

For the purpose of measuring Facebook's stated claims about its fact-checking efforts and its commitment to fight against the spread of misinformation, the investigative team analysed a sample of 85 posts [51] based on the above criteria.

For each of the false and misleading posts and stories sampled, Avaaz researchers recorded and analysed, using both direct observation and CrowdTangle: [52]
- The total number of interactions it received;
- The total number of views it received in the case of Facebook videos;
- Whether each had a warning label as false or misleading [53] added by Facebook; [54]
- When misinformation posts would receive a fact-check warning label or be removed. [55]

Methodology for identifying 'clones' and 'variants'

During the research process, our investigative team noticed that posts previously documented using the methodology above and collected on other large social media platforms [56] were spreading in an exact, or slightly altered, fashion on Facebook. Our team further investigated eight narratives from our sample of 85 posts, to conduct a dedicated research of the spread of such "clones" and "variants".

We used CrowdTangle [57] to search text from the original post we had documented to identify public shares of the same content - or variations of it - shared by Facebook pages, public groups or verified profiles.

We only included posts when we were able to document at least one occurrence that had been labelled by Facebook but we could also find "clones" or "variants" of the same example that had not been labelled.

With this methodology our team was able to identify a total of 30 posts. The engagement data we

estimate for our sample provides some indication of the relative reach of different claims.

Case study: The 'Fauci emails' methodology

Our investigative team conducted a search inputting the "fauci lied" and "fauci emails" keywords into the CrowdTangle [58] search application and examined the top 50 results returned for public groups, pages and verified profiles having shared a publication including the above search terms.

Our team included content containing misinformation narratives claiming Anthony Fauci lied in some email exchanges on issues such as the effectiveness of masks, the origins of coronavirus and the effectiveness of hydroxychloroquine as a treatment for COVID-19 with a primary or secondary fact-check from a Facebook fact-checking partner. [59]

The case study research was based around claims referenced in the following five fact-checking articles:

- Factcheck.org: Viral Posts, Pundits Distort Fauci Emails
- Politifact: No, emails to Fauci don't show early agreement that virus was man-made
- Health Feedback: Fauci's emails don't support viral claims on masks, hydroxychloroquine and virus engineering
- USA Today: Missing context in claim about emails, Fauci's position on masks
- Leadstories: Dr. Anthony Fauci's Private Email On Masks, Dated February 2020, Does NOT Conflict With What He Was Saying Publicly Around That Time

Simple statements or memes where no context or author was provided were excluded.

SECTION 2: HATE TARGETED AT SCIENTISTS - A CLOSER LOOK

A torrent of hate in the comments: Methodology

From the database of 85 items targeting the three scientists of this study described in Section 1, Avaaz researchers used the Export Comments tool and collected export files displaying all the comments from the three posts having gathered the highest comment counts across the full data set. [60]

All three publications gathered a total of 77,012 comments and were videos targeting Anthony Fauci.

We first analysed the overall language of the comments [61] and then we looked for specific, offensive terms sourced from a vocabulary curated by Avaaz researchers. [62]

We measured both the total count of comments in which each term of interest occurred, as well as the total count of occurrences of the terms. This allowed us to distinguish between comment topics and term emphasis. The understanding here is that the more often a term is repeated within a comment, the more emphasis it is being given.

To eliminate terms that do not offer any contextual value but are repeatedly used throughout communication, we employed a common practice of removing stop words. Stop words include articles, interjections, pronouns, etc. More details are provided in the Technical Appendix of this report.

Twitter hashtag campaigns: Methodology

During the research process, the Avaaz team noticed some hashtags were recurring in the misinformation posts identified in the fact-check articles documented following the methodology described in Section 1.

Using the online monitoring software Meltwater , Avaaz took a closer look at 13 Twitter hashtags to understand the magnitude of the potential trend between January 1, and June 30, 2021.

The team collected the occurrences count for each of the following:

- #FireFauci: 144,000 counts
- #Nuremberg2:   35,100 counts
- #Divigate: 29,000 counts
- #FauciLiedPeopledied: 28,400 counts
- #Faucigate: 23,000 counts
- #FauciLied: 9,207 counts
- #Nuremberg2021:   8,326 counts
- #ArrestFauci: 7,691 counts
- #EpidemischeLuege: 3,778 counts
- #FraudFauci: 3,288 counts
- #FauciForPrison: 1,350 counts
- #FuckFauci: 917 counts
- #DrostenGate: 505 counts

SECTION 3: ONLINE COVERAGE AND SENTIMENT ANALYSIS

Identification of the online coverage: Methodology

As part of this research, Avaaz used the social media monitoring tool Buzzsumo to look into the top 500 articles mentioning any of the three scientists and shared on Facebook between January 1, and June 30, 2021.

We queried the following seven keyword searches in Buzzsumo's web content analyser tool and collected the first 500 results, sorted by most interactions gathered on Facebook during the research time frame stated above:

- Anthony Fauci

- Fauci
- Christian Drosten
- Drosten
- Marc Van
- Ranst
- Van Ranst

Counting the top articles up to a maximum of 500 results, for each scientist surname then name and surname, the original sample is of 3,000. As some article titles were showing up both in the top 500 for the scientists name and again in the results for the scientists name and surname, 2,508 is the final article count after deduplication of results.

The top 20 outlets [63] that published articles about any of the three scientists present in this study by referring to them using their full name or surname only, was established by sorting the full list by most interactions received across Facebook, Twitter, Pinterest and Reddit as provided by Buzzsumo and by keeping the first 20 results.

Outlets known for spreading misinformation: Methodology

In order to find fact-checking articles that referred to claims made by major news outlets such as Fox News, CNN and MSNBC (the parent company of NBC News and CNBC), we included in our search the names of presenters of the top three news programmes at each outlet. This was necessary because fact-checkers sometimes refer to presenters or reporters by their names in fact-checking articles, without necessarily mentioning the news organisation that employs them.

To obtain the data from an independent source about the top news programmes at these outlets, we used viewing figures from the rating agency Nielsen, originally published by Adweek. Adweek regularly posts various weekly, monthly and quarterly TV ratings, using Nielsen's data. Adweek also publishes Nielsen's raw ratings data files embedded in their articles through Adweek's Scribd page. For this research we used Nielsen's news show ranking data from Q2 of 2021, as published by Adweek. As a result, our search for fact-checking articles include the following three news shows and their presenters:

- Fox News
  - Tucker Carlson Tonight - Tucker Carlson
  - Hannity - Sean Hannity
  - The Five - Dana Perino, Greg Gutfeld, Jesse Watters
- CNN
  - Cuomo Prime Time - Chris Cuomo
  - Anderson Cooper 360 - Anderson Cooper
  - Erin Burnett Outfront - Erin Burnett
- MSNBC
  - Rachel Maddow Show - Rachel Maddow
  - The Last Word with Lawrence O'Donnell - Lawrence O'Donnell
  - All In with Chris Hayes - Chris Hayes

When searching for fact-checking articles, we used BuzzSumo's web content search engine and Google's site search method to specifically search for content published by Facebook's official fact-checking partners. Terms for these searches either contained the names of these organisations, or in the case of major TV channels, either the names of the organisations, or the names of their top three news programmes, or the names of the hosts of these programmes.

TECHNICAL APPENDIX

Sentiment Analysis

Avaaz ran a simple "sentiment analysis" using the database of 2,508 [64] article titles retrieved by the process described in Section 3. We used a pre-trained algorithm for sentiment analysis. This means that the language index in the algorithm's library is generalised without any specific context. This may justify tuning and optimisation attempts, as our data is contextualised within media and journalism, specifically in politics and medical science.

Our analyses use a pre-trained library provided by NLTK (Natural Language Processing Toolkit), which leverages a sentiment analysis module called Vader. The Vader sentiment analysis algorithm provides polarity scores, which score text data for sentiment affinities. The algorithm assigns scores based on a predefined dictionary, with the additional contexts of capitalisation, punctuation, etc. The library is developed for the English language. Thus, in order to apply sentiment analysis to non-English content, we first have to translate the content to English. This is achieved by first auto-detecting the language of the content, then using a python module that leverages Google Translate to translate the content to English. Once the content has been translated, the Vader library provides the polarity scores in the standard fashion. It is possible that this also had an impact on the comparatively surprising results for Marc Van Ranst.

There are three separate affinity scores provided, including negative, neutral, and positive, as well a fourth compound score which provides an overall sentiment score between -1 and 1. A negative compound score corresponds to a negative sentiment while a positive compound score corresponds to a positive sentiment.

Sentiment to Interaction Count (IC) Correlations

For each sentiment score component, we compute correlation coefficients with platform interaction counts. We calculated these correlations with two different measures: the Pearson coefficient and the Spearman coefficient. Unlike the Pearson coefficient, the Spearman coefficient is not constrained by linear relationships between variables. As long as both variables move in relative position with one another (i.e., are monotonic in relation), they are treated as being correlated.

The Spearman coefficient appeared to better capture signals in our dataset, which supports our general intuition about the data: On social media platforms, the more emotive content is, the more inclined users are to interact with it. The relationship between emotive content and interaction counts may not necessarily be linear, but overall move in relative step with one another.

We also explored the relationship between the sentiment of article headlines and their total cross platform interactions. This was achieved by classifying headlines by sentiment, then calculating correlation scores between each sentiment class.

Media Outlet and Author Breakdowns

Next, we explored interactions among the top media outlets and authors. This is approached by identifying the top 10 sources in terms of total cross-platform interactions. We then compare the total interactions with average interactions per source. This allows us to analyse sources in terms of overall impact and average content interactions. Likewise, we measure total sentiment component scores and average sentiment component scores to analyse the general sentimental skew of headlines by source.

Anthony Fauci

The Spearman method suggests the strongest correlation measure exists between negative scores and total cross-platform interactions.

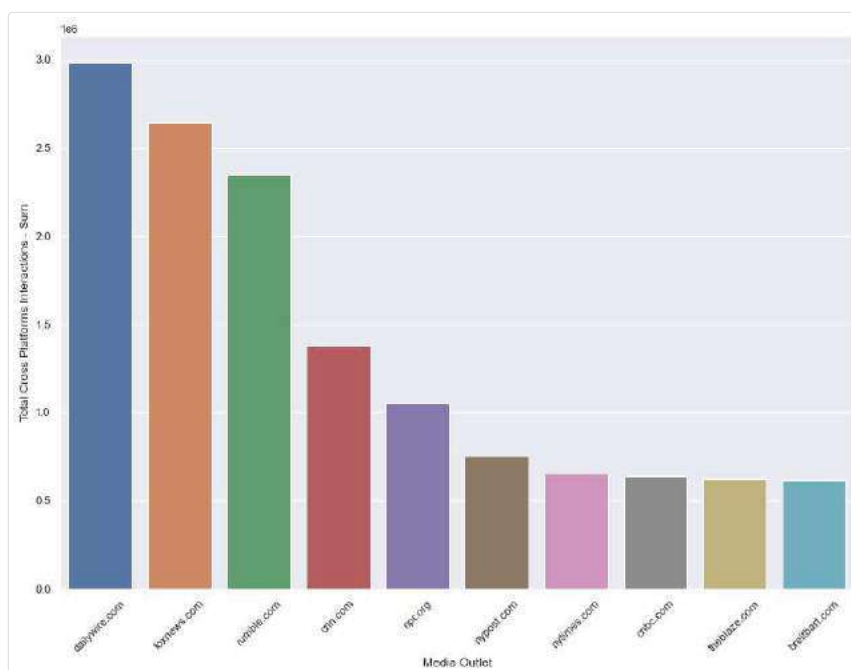|	Facebook IC	Twitter IC	Pinterest IC	Total Cross Platforms Interactions
neg	0.124087	0.068735	0.018047	0.144574
neu	-0.141478	-0.057326	-0.032170	-0.152422
pos	0.058001	0.025650	0.048160	0.054327

Figure 1: Total cross-platform interactions by media outlet - Anthony Fauci
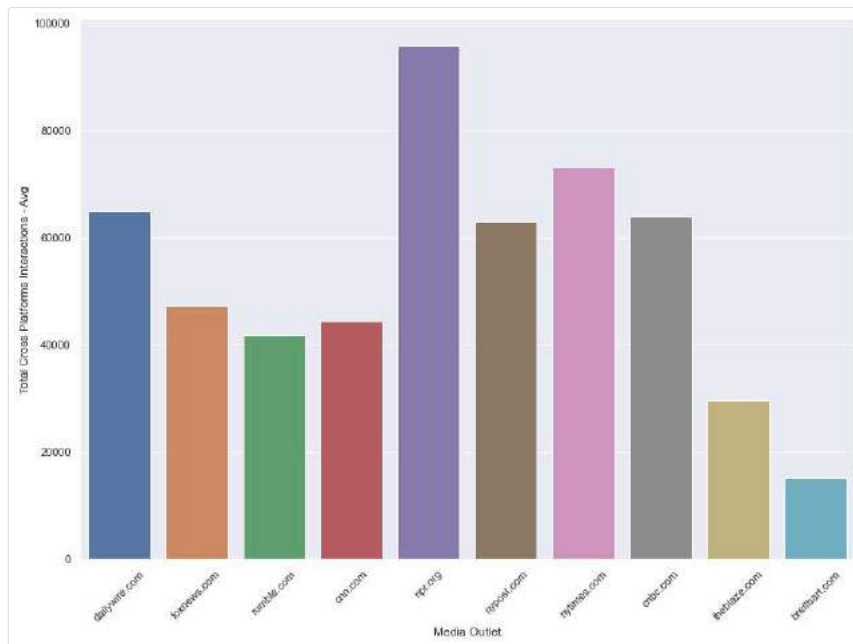
Figure 2: Average cross-platform interactions by media outlet - Anthony Fauci

The top three media outlets that dominate in total cross-platform interaction counts across all of the content captured in this dataset tended to get less interactions per article than some of the other top media outlets. This may suggest that total cross-platform interactions amassed by the top three media outlets are done so by the quantity of the articles they are producing, more so than the popularity of the individual articles themselves.

While sentiment scores of individual headlines from the top media outlets usually don't veer too far from neutrality, the sums of their scores tend to skew towards negative sentiment.

Christian Drosten

Once again, using the Spearman method, **the strongest correlation measure exists between negative scores and total cross-platform interactions.**

	Facebook IC	Twitter IC	Pinterest IC	Total Cross Platforms Interactions
neg	0.119976	0.019165	0.020357	0.110047
neu	-0.059817	0.032437	0.018583	-0.048652
pos	-0.053151	-0.072623	-0.054695	-0.059645
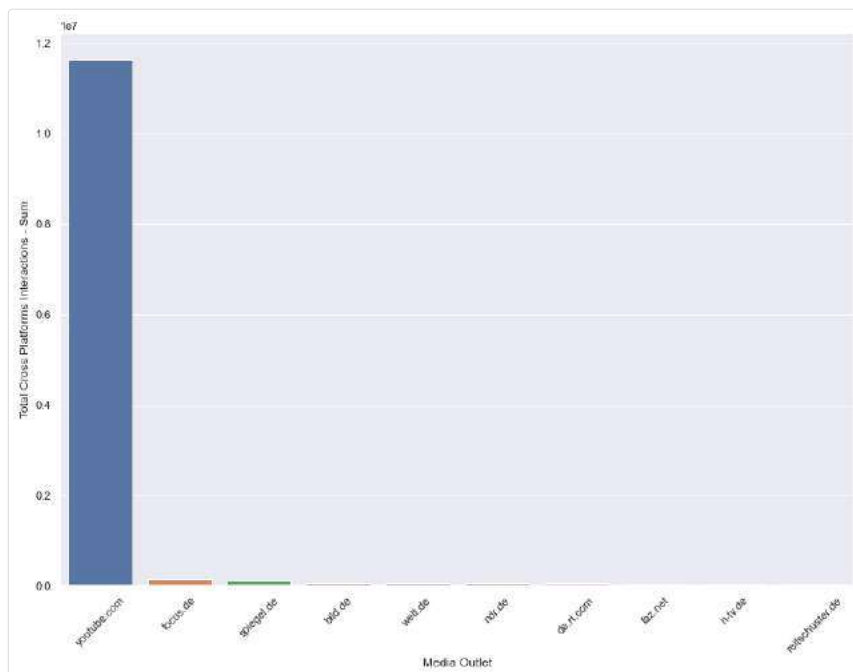
Figure 1: Total cross-platform interactions by platform and media outlet - Christian Drosten

Marc Van Ranst

The strongest positive correlation measure exists between negative scores and total cross-platform interactions. This is consistent with what we observed for the previous two scientists. However, these

results differ in that the range of sentiment scores is smaller. This lack of variance made subsequent analyses more challenging.

	Facebook IC	Twitter IC	Pinterest IC	Total Cross Platforms Interactions
neg	0.011198	0.004397	-0.105284	0.015065
neu	-0.020466	0.022364	0.026405	-0.020309
pos	-0.000068	-0.051690	0.061256	-0.006560
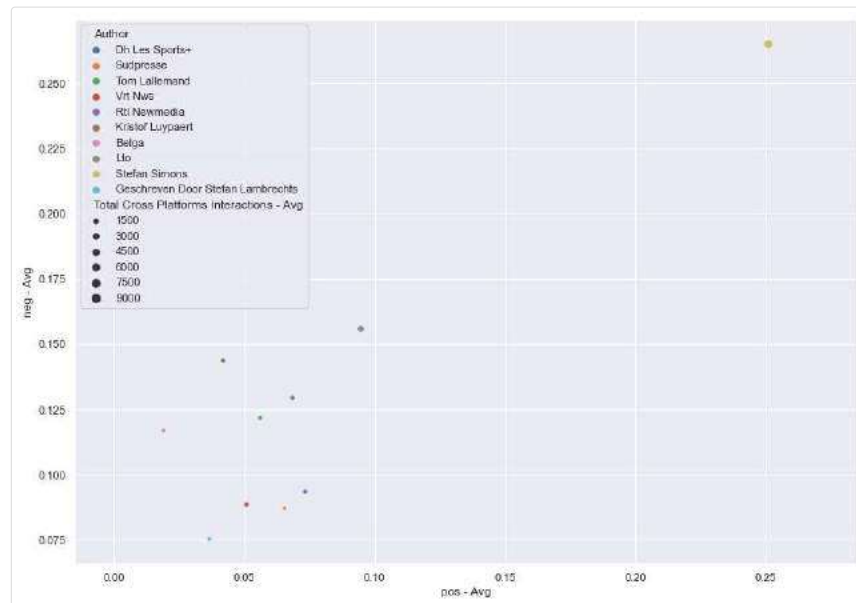
Figure: Average sentiment polarity scores by author

However, source breakdowns by both media outlet and author generally skew negative in sentiment.

CORRELATIONS

Our analyses also make use of correlation scores (often denoted as r), which measure the interdependent relationship between two variables. Initially, we used the Pearson coefficient but ultimately found that the Spearman coefficient better captured the signals in the data. All correlation scores are bounded between -1 and 1. Here are some key considerations for interpreting correlation coefficients from www.jmp.com:

- The closer r is to zero, the weaker the linear relationship.
- Positive r values indicate a positive correlation, where the values of both variables tend to increase together.
- Negative r values indicate a negative correlation, where the values of one variable tend to increase when the values of the other variable decrease.
- "Unit-free measure" means that correlations exist on their own scale: In our example, the number given for r is not on the same scale as either elevation or temperature. This is different from other summary statistics. For instance, the mean of the elevation measurements is on the same scale as its variable.

It's also worth noting that there's a popular saying in statistics: "Correlation does not imply causation". This means that just because two variables are correlated, that does not mean one causes the other. This principle should be kept in mind when interpreting the results.

VOCABULARY ANALYSIS

In our analyses, we use a natural language processing technique called vectorization, which simply counts the occurrences of individual words with respect to each "document". In this case, "document" refers to each individual comment.

Before tallying, we imposed a lower threshold for term occurrence of 2, meaning that we would only count term occurrences if the term appeared more than once. This decision was premised on filtering out noisy terms such as random URLs and other types of spam content. We also used a case-insensitive approach in order to collapse effects from casing.

General Note on Methodology

It is important to note that, while we collect data and compute numbers to the best of our ability, this analysis is not exhaustive as we looked only at a sample of fact-checked misinformation posts in five languages. [65] Moreover, this research is made significantly more challenging because Facebook does not provide investigators with access to the data needed to measure the total response rate, moderation speed, number of fact-checks and the amount of users who have seen or been targeted with misinformation.

We hope the platform increases cooperation with civil society organisations, however recent restrictions imposed by the platform are cause for worry. We also recognise the hard work of Facebook employees

across different sub-teams, who have done their best to push the company to fix the platform's misinformation problem. This report is not an indictment of their personal efforts, but rather highlights the need for much more proactive decisions and solutions implemented by the highest levels of executive power in the company.

This study takes a small step towards a better understanding of the scale and scope of the misinformation targeting prominent scientists on Facebook, Instagram, Twitter, Telegram, BitChute and YouTube.

Cooperation across fields, sectors and disciplines is needed more than ever to fight disinformation and misinformation. All social media platforms must become more transparent with their users and with researchers to ensure that the scale of the problem is measured effectively and to help public health officials respond in a more effectual and proportional manner to both the pandemic and the infodemic.

A list of the pieces of misinformation content referenced in this report can be found in the Annex.

It is important to note that although fact-checks from reputable fact-checking organisations provide a reliable way to identify misinformation content, researchers and fact-checkers have a limited window into misinformation spreading in private Facebook groups, on private Facebook profiles and via Facebook messenger.

Similarly, engagement data for Facebook posts analysed in this study are only indicative of wider engagement with, and exposure to, misinformation. Consequently, the findings in this report are likely conservative estimates.

For more information and interviews:
- media@avaaz.org
- Andrew Legon (CET timezone) - andrew.legon@avaaz.org / +34 600 820 285

More information about Avaaz's disinformation work:

Avaaz is a global democratic movement with more than 66 million members around the world. All funds powering the organisation come from small donations from individual members.

This report is part of an ongoing Avaaz campaign to protect people and democracies from the dangers of disinformation and misinformation on social media. As part of that effort, Avaaz investigations have shed light on how Facebook was a significant catalyst in creating the conditions that swept America down the dark path from election to insurrection; how Facebook's AI failed American voters ahead of Election Day in October 2020; exposed Facebook's algorithms as a major threat to public health in August 2020; investigated the US-based anti-racism protests where divisive disinformation narratives went viral on Facebook in June 2020; revealed a disinformation network with half a billion views ahead of the European Union elections in 2019; prompted Facebook to take down a network reaching 1.7M people in Spain days before the 2019 national election; released a report on the fake news reaching millions that fuelled the Yellow Vests crisis in France; exposed a massive disinformation network during the Brazil presidential elections in 2018; revealed the role anti-vaccination misinformation is having on reducing the vaccine rate in Brazil; and released a report on how YouTube was driving millions of people to watch climate misinformation videos.

Avaaz's work on disinformation is rooted in the firm belief that fake news proliferating on social media poses a grave threat to democracy, the health and well-being of communities, and the security of vulnerable people. Avaaz reports openly on its disinformation research so it can alert and educate social media platforms, regulators and the public, and to help society advance smart solutions to defend the integrity of our elections and our democracies. You can find our reports and learn more about our work by visiting: https://secure.avaaz.org/campaign/en/disinfo_hub/.

Annex

Table 1: Full list of 85 examples of misinformation content referenced in this brief

#	Fake News Post	Scientist Targeted	Lang	Post actioned by July 20, 2021	Best available interaction (post is not a video)	True video views (post is a video)	
1	Fauci lied when he said COVID-19 was not engineered, Fauci admitted masks don't work but lied about it in public.	Anthony Fauci	English	No	1,982,055		https://www.factc fauci-emails/ https://www.polit emails-fauci-don
2	Evidence proves Fauci lied again and again.	Anthony Fauci	English	No	1,800,000		https://www.factc fauci-emails/ https://www.polit emails-fauci-don
3	Fauci lied about	Anthony	English	Yes	1,700,000		https://www.factc

	lockdown, masks and COVID-19 death rate.	Fauci					covid-19/
4	Fauci lied about masks, he knew they were not effective. Fauci also lied about the origins of COVID-19.	Anthony Fauci	English	No	1,300,000		https://www.fact fauci-emails/ https://www.polit emails-fauci-don
5	Fauci lied out of political motivation, about hydroxichloroquine, masks and the origins of the virus.	Anthony Fauci	English	No	761,000		https://www.fact fauci-emails/ https://www.polit emails-fauci-don
6	Fauci lied about the effectiveness of masks and about the origins of COVID-19.	Anthony Fauci	English	Yes	782,000		https://healthfeed claims-on-masks
7	Fauci lied under oath and there is a cover up into the origins of Covid.	Anthony Fauci	English	No		125,112	https://www.fact fauci-emails/ https://www.polit emails-fauci-don
8	Fauci knew from the beginning that Covid may have been engineered but he lied about it.	Anthony Fauci	English	No	937,000		https://www.fact fauci-emails/ https://www.polit emails-fauci-don
9	Fauci lied about everything, including the origins of Covid.	Anthony Fauci	English	No	270,000		https://www.fact fauci-emails/ https://www.polit emails-fauci-don
10	The vaccine doesn't protect you from Covid.	Anthony Fauci	English	Yes	492,000		https://www.fact virus-with-the-di
11	Fauci knew masks don't work but he lied about it.	Anthony Fauci	English	Yes	313,000		https://www.fact fauci-emails/ https://www.polit emails-fauci-don
12	Fauci lied, flip-flopped about masks, he wasn't following science as a primary goal.	Anthony Fauci	English	No		94,100	https://www.fact fauci-emails/ https://www.polit emails-fauci-don
13	Fauci lied about the origins of Covid and about masks.	Anthony Fauci	English	No	272,000		https://www.fact fauci-emails/ https://www.polit emails-fauci-don
14	Fauci lied to the American people as he knew masks weren't effective.	Anthony Fauci	English	No	353,000		https://www.fact fauci-emails/ https://www.polit emails-fauci-don
15	Fauci admitted in his email that masks are ineffective.	Anthony Fauci	English	No	514,000		https://www.fact fauci-emails/ https://www.polit emails-fauci-don
16	Masks are not effective, and COVID-19 was developed in a lab, Fauci emails are proof of that.	Anthony Fauci	English	No	388,000		https://www.fact fauci-emails/ https://www.polit emails-fauci-don
17	Fauci lied again with regards to lockdown, masks and death rate.	Anthony Fauci	English	No	92,119		https://www.fact covid-19/
18	Fauci's emails are proof that he lied about the effectiveness of masks.	Anthony Fauci	English	No	36,000		https://healthfeed claims-on-masks

19	Fauci's emails prove that the American people were lied to about masks.	Anthony Fauci	English	Yes	322,000		https://healthfeed claims-on-masks
20	A screenshot of Fauci's email with the status text "Fauci lied".	Anthony Fauci	English	Yes		18,700	https://www.fact fauci-emails/ https://eu.usatoda missing-context-
21	Fauci admitted masks are not effective and the experts lie about this.	Anthony Fauci	English	No	514,000		https://www.fact fauci-emails/ https://www.polit emails-fauci-don
22	Fauci lied about masks and origins of Covid, he might be under criminal investigation.	Anthony Fauci	English	No	214,000		https://www.fact fauci-emails/ https://www.polit emails-fauci-don
23	Fauci lied about masks and origins of Covid.	Anthony Fauci	Portuguese	No	283,000		https://www.fact fauci-emails/ https://www.polit emails-fauci-don
24	Fauci's emails were leaked.	Anthony Fauci	Portuguese	Yes	110,000		https://www.oper laboratorio-fake-
25	Dies wirft auch im Hinblick auf das gesamte Coronaszenario schwerwiegende Fragen auf. (This also raises serious questions regarding the entire corona scenario)	Christian Drosten	German	No	108,000		https://correctiv.o infektionen-nach-
26	Fauci, "the greatest expert in infectious diseases" will probably have a tough time today and the next few days. (Fauci, "le plus grand expert en maladies infectieuses" va probablement passer un sale quart d'heure aujourd'hui et les prochains jours)	Anthony Fauci	French	Yes	72,000		https://factuel.afp attention-aux-int
27	40% to 50% of CDC and FDA employees are 'refusing the COVID-19 vaccine'	Anthony Fauci	English	Removed	20,400		https://www.reut cdcvaccinationlev and-fda-employe
28	As Lancet overturns PCR-test it becomes evident that Christian Drosten and Karl Lauterbach misinterpreted results from PCR Test.	Christian Drosten	German	Yes		20,800	https://dpa-factch
29	Fauci repeatedly lied & misled the public about masks and the origins of the coronavirus.	Anthony Fauci	English	No		46,956	https://www.fact fauci-emails/ https://www.polit emails-fauci-don
30	Fauci's emails prove that he lied under oath.	Anthony Fauci	English	No	25,215		https://www.fact fauci-emails/ https://www.polit emails-fauci-don
31	Fauci lied again with regards to lockdown, masks and death rate.	Anthony Fauci	English	No		14,504	https://www.fact covid-19/

32	Doesn't show virologist Christian Drosten have a doctorate at all? After all, the professor of Berlin Charité 'DAS' is the face of the pandemic! (Hat etwa Vorzeige-Virologe Christian Drosten gar keinen Doktortitel? Schließlich ist der Professor der Berliner Charité `DAS´ Gesicht der Pandemie!)	Christian Drosten	German	No		8,846	https://correctiv.o infektionen-nach-
33	Fauci lied about masks and there is a cover up about the origins of Covid.	Anthony Fauci	English	No		22,429	https://www.fact fauci-emails/ https://www.polit emails-fauci-don
34	Screenshot of Fauci's email about masks with the caption: Fauci lied (By Rep. congresswoman).	Anthony Fauci	English	No		14,590	https://www.fact fauci-emails/
35	Emails are evidence that Fauci knew masks were not effective, Fauci lied about Covid death count and the origins of the virus.	Anthony Fauci	English	No	81,000		https://www.fact fauci-emails/ https://www.polit emails-fauci-don
36	Fauci's emails prove that the American people were lied to about masks	Anthony Fauci	English	Yes	322,000		https://leadstorie email-on-masks- was-saying-publi
37	Fauci's emails leaked.	Anthony Fauci	English	Yes		14,287	https://leadstorie emails-were-not-
38	Fauci lied about everything.	Anthony Fauci	English	Yes		3,206	https://leadstorie email-on-masks- was-saying-publi
39	Fauci was informed of Hydroxychloroquine Succes in early 2020 but lied to the public instead.	Anthony Fauci	English	Yes		7,584	https://eu.usatod fauci-emails-hydi
40	Fauci knew that the lab leak was likely and masks don't work and Hydroxychloroquine does, but he lied.	Anthony Fauci	English	No	11,000		https://www.fact fauci-emails/ https://www.polit emails-fauci-don
41	Emails show Fauci knew masks are not effective.	Anthony Fauci	English	No		5,634	https://www.fact fauci-emails/ https://www.polit emails-fauci-don
42	Fauci is in custody.	Anthony Fauci	English	Removed	7,400		https://leadstorie was-not-taken-ir
43	Fauci's emails leaked.	Anthony Fauci	English	Yes		9,160	https://leadstorie emails-were-not-
44	Leak emails from Dr. Fauci, from the White House, stating that the Chinese virus may have come from a laboratory and possible uselessness of masks. (Vazam e-	Anthony Fauci	Portuguese	Yes		2,91	https://www.oper laboratorio-fake-

	mails de Dr. Fauci, da Casa Branca, afirmando que o vírus chinês pode ter vindo de um laboratório e possível inutilidade das máscaras.)					
45	Mark Zuckerberg and Anthony Fauci discussed a vaccination project against Covid-19 when " the epidemic had not yet started ".	Anthony Fauci	French	Yes	1,357	https://factuel.afp 1 https://www.polit emails-fauci-don
46	Fauci's emails leaked.	Anthony Fauci	English	No	1,276	https://leadstorie emails-were-not-
47	Today a second Nuremberg tribunal is being prepared in which, under the protection of thousands of global lawyers behind American-German lawyer Reiner Fuellmich. (vandaag wordt een tweede Neurenberg-tribunaal voorbereid waarin, onder de bescherming van duizenden wereldwijde advocaten achter de Amerikaans-Duitse advocaat Reiner Fuellmich).	Christian Drosten	Dutch	Yes	12,189	https://factcheckr strafrechtelijke-p
48	Anthony Fauci will make millions off new book.	Anthony Fauci	English	No	814	https://www.polit making-millions-
49	Fauci's uncovered emails show that he knew the truth about the origins of COVID-19, but he knowingly said otherwise.	Anthony Fauci	English	No	4,914	https://www.facto fauci-emails/ https://www.polit emails-fauci-don
50	40% to 50% of CDC and FDA employees are 'refusing the COVID-19 vaccine'	Anthony Fauci	English	Yes	2,542	https://www.reut cdcvaccinationlev and-fda-employe
51	40% to 50% of CDC and FDA employees are 'refusing the COVID-19 vaccine'.	Anthony Fauci	English	Yes	1,356	https://www.reut cdcvaccinationlev and-fda-employe
52	Fauci's emails were leaked.	Anthony Fauci	English	Yes	2,914	https://leadstorie emails-were-not-
53	Fauci knew the virus was likely engineered but he lied	Anthony Fauci	English	Yes	9,285	https://www.facto fauci-emails/
54	Everything is now confirmed: the ineffectiveness of the masks, the effective drugs against Covid and the engineered origin of the virus.	Anthony Fauci	German	Yes	1,046	https://faktencher fauci-mails
55	Fauci lied about the effectiveness of hydroxychloroquine.	Anthony Fauci	English	Yes	16,963	https://www.polit posts/anthony-fa
56	Fauci was informed	Anthony	English	Yes	637	https://www.facto

	about the effectiveness of hydroxychloroquine in early 2020 but lied to the public instead.	Fauci					fauci-emails/
57	Fauci was informed of Hydroxychloroquine Succes in early 2020 but lied to the public instead.	Anthony Fauci	English	No		22,198	https://www.fact fauci-emails/
58	Legal proceedings initiated against Drosten (Gerichtsverfahren gegen Drosten eingeleitet).	Christian Drosten	German	No		499	https://correctiv.o infektionen-nach-
59	Article claims that Dr. Anthony Fauci "holds patents of an HIV component used to create COVID-19".	Anthony Fauci	English	Yes		1,239	https://www.reut check-sars-cov-2 hold-patents-for-
60	The vaccine doesn't protect you from Covid.	Anthony Fauci	English	Yes		417	https://www.fact virus-with-the-di
61	Mark Zuckerberg "literally" asked top infectious disease expert Anthony Fauci "how can I help sell lockdowns to keep the country locked down for 8 months while I'm paying local officials in multiple states to change their election procedures and laws to facilitate mass mail in ballots?"	Anthony Fauci	English	No		19,641	https://www.reut mark-zuckerberg- elections-or-ballo
62	40% to 50% of CDC and FDA employees are 'refusing the COVID-19 vaccine'.	Anthony Fauci	English	No	2,687		https://www.reut cdcvaccinationlev and-fda-employe
63	Mark Zuckerberg "literally" asked top infectious disease expert Anthony Fauci "how can I help sell lockdowns to keep the country locked down for 8 months while I'm paying local officials in multiple states to change their election procedures and laws to facilitate mass mail in ballots?"	Anthony Fauci	English	Yrd		340	https://www.reut mark-zuckerberg- elections-or-ballo
64	Child Trafficker Mother Teresa Was Anthony Fauci's Mother	Anthony Fauci	English	No		54,937	https://www.reut check-mother-ter
65	Fauci's emails leaked.	Anthony Fauci	English	Yes		33,410	https://leadstorie emails-were-not-
66	Fauci was informed of Hydroxychloroquine Succes in early 2020 but lied to the public instead.	Anthony Fauci	English	Yes		321	https://www.fact fauci-emails/

67	The PCR test cannot prove an infection and the Drosten cannot prove a doctorate. And yet you live on this fake. (Der PCR-Test kann keine Infektion und der Drosten keinen Doktortitel nachweisen. Und trotzdem lebt ihr diesen Fake weiter.)	Christian Drosten	German	Yes		77	https://dpa-factch
68	The PCR test cannot prove an infection and the Drosten cannot prove a doctorate. And yet you live on this fake. (Der PCR-Test kann keine Infektion und der Drosten keinen Doktortitel nachweisen. Und trotzdem lebt ihr diesen Fake weiter.)	Christian Drosten	German	Yes		699	https://dpa-factch
69	40% to 50% of CDC and FDA employees are 'refusing the COVID-19 vaccine'.	Anthony Fauci	English	No	524,000		https://www.reut cdcvaccinationlev and-fda-employe
70	An email from Dr. Anthony Fauci shows "everyone was lied to" about wearing masks to prevent the spread of COVID-19.	Anthony Fauci	English	Yes		4,623	https://www.polit posts/post-using
71	Fauci emails confirm COVID was man-made.	Anthony Fauci	English	Removed		11	https://leadstorie to-fauci-does-not
72	Fauci knew masks didn't work.	Anthony Fauci	English	Yes		195	https://factcheck. are-ineffective-a
73	Fauci's emails were leaked.	Anthony Fauci	English	Yes		195	https://www.reut emails-were-not-
74	Fauci's emails conflict what he said publicly at the time.	Anthony Fauci	English	Yes		75	https://leadstorie email-on-masks- was-saying-publi
75	Fauci has been replaced by a clone or a look-alike.	Anthony Fauci	English	Yes		51	https://www.reut has-not-been-rep
76	Fauci knew masks don't work.	Anthony Fauci	English	Yes		5,317	https://www.fact fauci-emails/
77	The PCR test cannot prove an infection and the Drosten cannot prove a doctorate. And yet you live on this fake. (Der PCR-Test kann keine Infektion und der Drosten keinen Doktortitel nachweisen. Und trotzdem lebt ihr diesen Fake weiter.)	Christian Drosten	German	No		3,541	https://dpa-factch
78	Fauci lied when he said COVID-19 was not engineered, Fauci admitted masks don't work but lied about it in public.	Christian Drosten	German	No	14,300		https://dpa-factch

79	[Fauci lied when he said COVID-19 was not engineered, Fauci admitted masks don't work but lied about it in public.]	Christian Drosten	German	No	104,000		[https://dpa-factch]
80	[Fauci lied again with regards to lockdown, masks and Covid death rate.]	Anthony Fauci	English	Yes	34,446		[https://www.factc covid-19/]
81	[Gerichtsverfahren gegen Drosten eingeleitet!! (Legal proceedings initiated against Drosten!!)]	Christian Drosten	German	No	47,300		[https://correctiv.o infektionen-nach-]
82	[How the population plays with lies to send into the world with media cooperation. Creating #chaos to blindly follow citizens like sheep to their slaughter#]	Marc Van Ranst	Dutch	No			[https://www.rtbf. 2019-comment-v une-crise-sanitai]
83	[Really Marc Van Ranst? Do we really have to fall for this?]	Marc Van Ranst	Dutch	Yes		44	[https://dpa-factch]
84	[Lez Wheeler: Fauci Lied To You.]	Anthony Fauci	English	No	32		[https://www.factc covid-19/]
85	[Fauci lied when he said COVID-19 was not engineered, Fauci admitted masks don't work but lied about it in public.]	Anthony Fauci	English	No	59,186		[https://www.factc fauci-emails/]
86	[Meghan McCain says Fauci doesn't understand science.]	Anthony Fauci	English	No	205,000		*This post is not o the sample of 85 the hateful speec

Table 2: Top 150 words with most counts appearing in the three most commented posts from this research

Keyword	Comment Occurrences	Total Count	Total Likes of Comments Where Present
fauci	9,558	10,852	29,426
people	5,678	7,246	22,241
trump	5,086	6,429	21,685
just	4,514	5,036	20,298
like	4,038	4,562	11,865
https	2,549	4,454	4,395
don	3,844	4,361	13,831
vaccine	2,574	3,485	3,529
know	2,954	3,416	6,497
dr	2,866	3,269	18,344
agree	3,169	3,241	13,626
virus	2,403	3,027	4,207
time	2,715	2,936	7,446
biden	2,528	2,868	20,813
covid	2,116	2,667	5,194
think	2,410	2,587	10,92
right	2,428	2,575	13,586

net	2,452	2,488	4,384
photo	2,482	2,487	4,388
ccb	2,444	2,444	4,369
fbcdn	2,444	2,444	4,369
said	2,146	2,388	9,741
fna	1,605	2,386	3,844
scontent	1,190	2,380	3,360
need	2,022	2,217	5,056
tucker	2,011	2,199	6,974
say	1,985	2,179	8,033
view	1,990	2,127	2,333
whoopi	1,995	2,083	2,196
needs	1,971	2,057	10,140
did	1,793	2,017	4,760
oh	1,962	1,984	3,853
going	1,778	1,969	5,313
want	1,674	1,889	3,921
jpg	1,866	1,873	4,175
world	1,531	1,8517	1,425
gates	1,465	1,789	4,753
truth	1,474	1,669	6,169
president	1,402	1,640	8,827
china	1,211	1,519	2,558
meghan	1,465	1,517	7,512
doesn	1,404	1,502	7351
believe	1,373	1,496	12,879
does	1,372	1,467	2,241
good	1,379	1,458	2,242
make	1,347	1,457	2,021
man	1,337	1,442	1,943
mask	1,085	1,418	1,489
thing	1,351	1,394	5,766
megan	1,332	1,369	869
com	840	1,369	869
country	1,212	1,360	7,589
masks	1,073	1,358	4,272
news	1,154	1,341	2,211
got	1,225	1,332	5,964
year	1,219	1,327	8,359
php	1,291	1,305	1,026
way	1,216	1,305	3,645
mccain	1,242	1,295	3,897
money	1,098	1,274	1,577
really	1,198	1,272	2,104
let	1,188	1,259	5,648
url	1,255	1,258	1,009
xx	846	1,255	527
external	1,254	1,254	1,009
safe_image	1,254	1,254	1,009

long	1,143	1,210	3,259
shut	1,153	1,204	1,099
government	977	1,199	6,707
oe	1,191	1,192	3,360
didn	1,111	1,190	2,705
ve	1,115	1,189	7,344
media	1,015	1,153	2,565
getting	1,057	1,153	2,565
god	965	1,130	3,738
saying	1,065	1,111	2,230
years	992	1,096	1,839
lies	914	1,080	6,587
america	973	1,079	8,764
watch	1,028	1,076	738
stop	966	1,069	4,540
t1	1,052	1,052	3,322
yes	984	1051	1,547
dbeb18	1,049	1,049	3,321
administration	949	1,039	3,526
day	916	1,028	2,861
look	971	1,024	3,070
says	935	998	4,139
lol	932	991	896
come	933	977	1,448
big	879	960	1,858
knew	861	943	3,431
pandemic	824	927	7,331
life	813	915	3,437
vaccines	744	899	2,050
control	807	895	1,845
democrats	816	890	3,308
new	772	877	1,850
doing	823	876	1,295
american	798	874	3,870
work	788	874	3,870
ago	856	870	3,800
tell	807	864	3,293
evil	732	855	1,464
sure	804	851	1,871
left	782	849	3,632
idiot	818	843	784
real	767	836	1,154
away	786	828	1,092
lying	782	828	2,943
doctor	744	826	2,773
wear	664	816	1,267
fox	713	809	614
opinion	757	807	512
ll	737	801	484

stupid	748	801	2,280
little	757	792	1,511
shot	640	792	605
listen	754	785	2,851
lab	680	782	890
blame	691	780	629
won	716	776	1,183
remove	757	771	3,994
gif	689	768	234
person	725	766	1,144
research	638	762	952
talking	727	760	948
s600x600	753	753	2,927
love	689	747	1,878
actually	712	746	7,656
care	687	737	1,018
guy	700	737	1,870
jail	703	731	2,791
vaccinated	517	718	961
sense	670	717	1,412
wrong	688	716	1,741
whoopie	693	715	3,380
finally	700	711	823
paid	673	711	2,015
called	662	707	2,442
better	668	703	1,306
makes	676	702	4,140
trust	641	691	2,988
family	623	680	6,364
americans	609	672	2,934
isn	642	668	1,224
talk	635	667	1,108
trying	628	658	3,034

Table 3: Top 100 platforms and outlets that published items about any of the three scientists present in this study between January 1, and June 30, 2021, ranked by most interactions on Facebook[66]

Rank	Media	Total Interactions gathered on Facebook
1	youtube.com	23,791,964
2	dailywire.com	3,132,026
3	foxnews.com	2,787,559
4	rumble.com	2,343,563
5	cnn.com	1,585,46
6	npr.org	1,155,255
7	nbcnews.com	877,396
8	washingtonpost.com	815,477
9	breitbart.com	775,935
10	nypost.com	755,419
11	nytimes.com	690,880

12	theblaze.com	674,332
13	cnbc.com	663,559
14	thehill.com	540,313
15	bongino.com	527,037
16	forbes.com	470,983
17	newsweek.com	437,493
18	washingtonexaminer.com	383,878
19	newyorker.com	383,651
20	babylonbee.com	353,579
21	townhall.com	319,099
22	nieuwsblad.be	298,163
23	businessinsider.com	297,467
24	westernjournal.com	290,564
25	louderwithcrowder.com	268,108
26	washingtontimes.com	226,725
27	theguardian.com	219,994
28	trendingpolitics.com	219,474
29	huffpost.com	213,080
30	msnbc.com	202,007
31	focus.de	194,830
32	spiegel.de	192,640
33	reuters.com	187,889
34	cbsnews.com	184,442
35	theconservativeopinion.com	177,777
36	dailycaller.com	175,577
37	abcnews.go.com	166,693
38	vanityfair.com	166,633
39	cnsnews.com	154,250
40	bbc.com	148,781
41	edweek.org	141,886
42	tmz.com	140,272
43	bbc.co.uk	133,570
44	redactie24.be	132,491
45	news.yahoo.com	131,657
46	vice.com	120,911
47	dhnet.be	120,801
48	thefederalist.com	119,977
49	thedailybeast.com	118,253
50	fee.org	115,773
51	palnews.be	108,816
52	judicialwatch.org	101,954
53	sudinfo.be	100,317
54	nationalreview.com	96,884
55	gva.be	95,526
56	saraacarter.com	95,181
57	independent.co.uk	91,339
58	redstateobserver.com	87,531
59	foxbusiness.com	85,477
60	conventionofstates.com	85,304

61	dailymail.co.uk	85,126
62	welt.de	83,407
63	espn.com	80,562
64	hannity.com	76,387
65	bild.de	74,789
66	faz.net	73,284
67	newsmax.com	71,304
68	rollingstone.com	70,293
69	politico.com	65,818
70	ndr.de	58,587
71	theonion.com	56,246
72	apnews.com	55,967
73	billoreilly.com	55,398
74	equire.com	54,794
75	rnd.de	54,794
76	usatoday.come	54,301
77	de.rt.com	54,115
78	justthenews.com	53,871
79	vtr.be	52,408
80	thegateawaypundit.com	52,111
81	rtl.be	52,105
82	stereogum.com	50,639
83	hbvl.be	50,574
84	thenationalpulse.com	49,534
85	ijr.com	47,855
86	thepostmillenial.com	47,783
87	web.de	47,080
88	upwhorty.com	45,026
89	buzzfeednews.com	44,682
90	nieuws7.be	43,960
91	nowthisnews.com	42,566
92	reitschuster.de	42,536
93	cnnespanol.cnn.com	42,387
94	trishintel.com	41,946
95	theatlantic.com	41,612
96	nickdamsusa.com	41,405
97	n-tv.de	41,016
98	pnws.be	39,586
99	broadwayworld.com	39,300
100	lifesitenews.com	32,268

Table 4: Full list of fact-checked articles published between January 1, and June 30, 2021, concerning one of the 18 media outlets identified in Section 3 of this report.

Outlet	Source	Title	Fact-Check Rating	Published date
Babylon Bee	Google	Fact check: Claim about 'genderless' Legos began as satire	False	Jun 2, 2021
Babylon Bee	Google	"Lego unveils new genderless bricks with no male/female connectors."	False	May 26, 2021
Babylon	Google	Fact Check-Lego is not releasing 'genderless	Satire	Jun 1,

Bee		bricks'; claims have been taken out of context from a satirical article		2021
Babylon Bee	Google	Fact check: Transgender New Zealand weightlifter not injured before Tokyo Olympics	False	Jun 30, 2021
Babylon Bee	Google	No, CNN chyron did not call Boulder shooter 'factually Arabic, but morally white'	Pants on fire	Mar 25, 2021
Babylon Bee	Google	Fact Check-CNN headline about the Colorado mass shooting suspect is digitally altered	Altered	Apr 1, 2021
Babylon Bee	Google	Nancy Pelosi did not thank babies for 'sacrificing their lives for women's rights'	False	May 6, 2021
Babylon Bee	Google	FACT CHECK: NO, WEIGHTLIFTER LAUREL HUBBARD HAS NOT SUFFERED AN INJURY THAT PREVENTS HER FROM GOING TO THE TOKYO OLYMPICS	False	Jun 25, 2021
Babylon Bee	Google	FACT CHECK: DID JOE BIDEN PROPOSE A $2 TRILLION BILL TO STUDY THE CAUSE OF RISING INFLATION RATES?	False	Jun 14, 2021
Babylon Bee	Google	Fact Check: CNN Did NOT Claim Colorado Shooter Was Factually Arabic But Morally White	Satire	Mar 25, 2021
Babylon Bee	Google	Fact Check: Article Titled 'To Fight White Supremacy, Coca-Cola Discontinues Vanilla Coke' Is Satire	Satire	Feb 24, 2021
Babylon Bee	Google	FACT CHECK: DID LEGO UNVEIL 'GENDERLESS BRICKS'?	False	May 27, 2021
Babylon Bee	Google	FACT CHECK: IS COCA-COLA DISCONTINUING VANILLA COKE TO 'FIGHT WHITE SUPREMACY'?	False	Mar 32, 2021
Babylon Bee	Google	FACT CHECK: DID NANCY PELOSI THANK MILLIONS OF BABIES FOR SACRIFICING THEMSELVES FOR WOMEN'S RIGHTS?	False	Apr 28, 2021
Babylon Bee	Google	Fact Check: Female Weightlifter Did NOT Suffer 'Tragic Testicle Injury' Just Weeks Before Tokyo Olympics	Satire	Jun 24, 2021
Babylon Bee	Google	FACT CHECK: DID CNN AIR A CHYRON SAYING THE BOULDER SHOOTER WAS 'FACTUALLY ARAB, BUT MORALLY WHITE'?	False	Mar 25, 2021
Babylon Bee	Google	Fact check: Altered image used to falsely claim CNN called Boulder suspect 'morally white'	Altered	Mar 25, 20211
Bongino	Google	Fact check: Biden said he plans to increase COVID-19 small business relief to people of color and women	Jan 19, 2021	
Breitbart	BuzzSumo	Breitbart article makes numerous false claims about the impacts of climate change, based on Global Warming Policy Foundation post	False	Feb 12, 2021
Breitbart	Google	Fact check: Post detailing COVID-19 deaths under Biden ignores improving trend	Missing context	Apr 30, 2021
Breitbart	Google	Bidens followed mask guidance when visiting Carters indoors	Followed mask guidance	May 7, 2021
Breitbart	Google	"Antifa is the culprit" in the Capitol riot	Pants on fire	Jan 15, 2021
Breitbart	Google	Ask PolitiFact: Are the White House press briefings 'staged?'	No evidence	Feb 17, 2021
Breitbart	Google	Fact Check: Schools Are NOT Banning Dr. Seuss Books, Seuss Enterprises Has Withdrawn Six Titles From Publication	Not true	Mar 5, 2021
CNN	Google	What Trump told Georgia election officials	Correction	Mar 16, 2021
Daily Wire	Google	Fact Check: Schools Are NOT Banning Dr. Seuss Books, Seuss Enterprises Has Withdrawn Six Titles From Publication	Not ture	Mar 5, 2021
Daily Wire	Google	Fact check: Black Lives Matter tweeted in support of Palestinians, not Hamas	False	May 23, 2021
Daily Wire	Google	Black Lives Matter did not voice support for Hamas	False	May 21, 2021
Fox News	BuzzSumo	Joe Biden banning burgers? Fox News, GOP	Pants on fire	Apr 26,

		politicians fuel false narrative		2021
Fox News	BuzzSumo	How Fox News, far-right TV blamed green energy for Texas' power outages	False	Feb 19, 2021
Fox News	BuzzSumo	Fox News' Jeanine Pirro wrongly claims US border is 'open to anyone from anywhere'	False	Mar 23, 2021
Fox News	BuzzSumo	Did Fox News Air Pornographic Photos Showing Hunter Biden?	Unproven	Apr 9, 2021
Fox News	BuzzSumo	Misinterpretation of VAERS database leads Tucker Carlson to wrongly suggests that COVID-19 vaccines are linked to higher mortality on Fox News	Flawed reasoning	May 14, 2021
Fox News	BuzzSumo	Debunked COVID story prompts differing responses on Fox News	N/A	Feb 15, 2021
Fox News	BuzzSumo	Tucker Carlson falsely blames Green New Deal, wind energy for Texas power outage	Pants on fire	Feb 17, 2021
Fox News	BuzzSumo	Tucker Carlson falsely claims COVID-19 vaccines might not work	Pants on fire	Apr 15, 2021
Fox News	BuzzSumo	Tucker Carlson Misleads on COVID-19 Vaccines, Masks - FactCheck.org	Misleading	Apr 17, 2021
Fox News	BuzzSumo	Tucker Carlson Misrepresents Vaccine Safety Reporting Data - FactCheck.org	Misrepresented	May 14, 2021
Fox News	BuzzSumo	Tucker Carlson tergiversa datos del sistema de notificación sobre seguridad de vacunas - FactCheck.org	Misrepresented	Jun 1, 2021
Fox News	BuzzSumo	Tucker Carlson misrepresents government data on Covid-19 vaccines	Misrepresented	May 7, 2021
Fox News	BuzzSumo	Tucker Carlson engaña sobre efectividad de vacunas contra COVID-19 y uso de mascarillas - FactCheck.org	Misleads	Apr 27, 2021
Fox News	BuzzSumo	Fact Check: Answers To Tucker Carlson's Questions About COVID-19 Are Abundant And NOT Being Withheld | Lead Stories	Not true	Apr 15, 2021
Fox News	BuzzSumo	Foxov Tucker Carlson dezinformacijama dopire i do Hrvatske	Misinformation	Feb 23, 2021
Fox News	Google	Bidens followed mask guidance when visiting Carters indoors	Followed mask guidance	May 7, 2021
Fox News	Google	"Antifa is the culprit" in the Capitol riot	Pants on fire	Jan 15, 2021
Fox News	Google	Ask PolitiFact: Are the White House press briefings 'staged?'	No evidence	Feb 17, 2021
Fox News	Google	Fact Check: Schools Are NOT Banning Dr. Seuss Books, Seuss Enterprises Has Withdrawn Six Titles From Publication	Not true	Mar 5, 2021
Fox News	Google	Fact check: Black Lives Matter tweeted in support of Palestinians, not Hamas	False	May 23, 2021
Fox News	Google	Black Lives Matter did not voice support for Hamas	False	May 21, 2021
Fox News	Google	Fact check: Kamala Harris' children's book is not in 'welcome packs' for migrants	False	Apr 29, 2021
Fox News	Google	There's no proof antifa stormed the Capitol. The rumor spread quickly anyway	No proof	Jun 7, 2021
Fox News	Google	The intent behind the bill recognizing Juneteenth as a federal holiday "is to replace the Fourth of July."	Pants on fire	Jun 25, 2021
Fox News	Google	Tucker Carlson's false claim downplaying role of white supremacists at Capitol riot	False	Feb 23, 2021
Fox News	Google	Tucker Carlson said 3,362 people have died from the COVID vaccine. Is he right?	False	May 7, 2021
Fox News	Google	Conservative Outlets Advance Unfounded Theory About Capitol Attack	No evidence	Jun 18, 2021
Fox News	Google	Fact check: Claims of FBI role in Jan. 6 Capitol attack are false	False	Jun 25, 2021
Fox News	Google	Fact check: Vaccine Adverse Reporting System isn't proof of COVID-19 vaccine deaths	False	Jun 28, 2021

Fox News	Google	Fox Nation host's unsupported claim that helicopters sprayed oil on frozen Texas wind turbines	False	Feb 24, 2021
Fox News	Google	Fact check: The causes for Texas' blackout go well beyond wind turbines	Misleading	Feb 19, 2021
Fox News	Google	Tucker Carlson's misleading claim about deaths after COVID-19 vaccine	False	May 6, 2021
Fox News	Google	Fact check: CDC recommends masks in most cases even after COVID-19 vaccine	False	Apr 21, 2021
Fox News	Google	Fact-checking Laura Ingraham's claim about immigrants staying in hotels	Mostly False	Feb 15, 2021
Fox News	Google	Covid-19 precautions do not mean vaccines are ineffective	Precautions are necessary	Apr 16, 2021
Fox News	Google	Fox Business reporter wrong about history of Sunday voting in Georgia	False	Apr 7, 2021
Fox News	Google	Fact-check: Is the US-Mexico border 'open to anyone from anywhere'?	False	Mar 24, 2021
Fox News	Google	Kevin McCarthy repeats Pants on Fire claim that Biden will 'control' how much meat Americans eat	Pants on fire	Apr 29, 2021
Fox News	Google	Maria Bartiromo conflates Trump's Georgia calls in primetime interview	False	Mar 17, 2021
Fox News	Google	Fact-check: Does Biden's climate plan include reducing red meat consumption to 'one burger per month'?	Pants on fire	Apr 27, 2021
Fox News	Google	Fact check: Frozen wind turbines don't deserve all the blame for Texas blackouts	Missing context	Feb 17, 2021
New York Post	Google	Ask PolitiFact: Are the White House press briefings 'staged?'	No evidence	Feb 17, 2021
New York Post	BuzzSumo	Evidence shows that lockdowns implemented to tackle the spread of COVID-19 have saved lives, contrary to claims in the New York Post	Inaccurate	May 10, 2021
New York Post	Google		Wrong image used	May 10, 2021
New York Post	Google	Bogus Claims Follow Donation of Kamala Harris' Children's Book	Incorrect/td>	Apr 30, 2021
New York Post	Google	COVID-19 vaccines don't cause herpes infections; a possible association with the reactivation of herpes zoster in patients with rheumatic diseases remains unconfirmed	Misleading	Apr 26,2021
New York Post	Google	Debunking the Conspiracy Theories Claiming That Antifa Led the Attack on the Capitol	No evidence	Jan 9,2021
New York Post	Google	What Trump told Georgia election officials	Correction	Mar 16,2021
Washington Post	Google	What Trump told Georgia election officials	Correction	Mar 16,2021

Endnotes

1. Avaaz defines disinformation as *"Verifiably false or misleading information with the potential to cause public harm, for example by undermining democracy or public health or encouraging discrimination or hate speech."* Disinformation and misinformation are often used interchangeably, though there is a distinction in terms of intent between the two. The EU Commission's Guidance for redrafting the Code of Practice defines misinformation as *"false or misleading content shared without harmful intent though the effects can be still harmful, e.g. when people share false information with friends and family in good faith. Disinformation is false or misleading content that is spread with an intention to deceive or secure economic or political gain and which may cause public harm."* ▲

2. As reaffirmed by US Surgeon General Vivek Murthy, "health misinformation is a serious threat to public health. It can cause confusion, sow mistrust, harm people's health, and undermine public health efforts. Limiting the spread of health misinformation is a moral and civic imperative" https://www.nbcnews.com/tech/tech-news/misinformation-serious-threat-public-health-surgeon-general-warns-rcna1428 ▲

3. See also Avaaz report "From Election to Insurrection". ▲

4. Attacks on credibility (59%), Emotional or psychological distress (42%), Reputational damage (30%), Threats of physical or sexual violence (22%), Death threats (15%), Other** (15%), Physical attacks (2%), Death threats OR phys/sexual violence (26%). 'Other' included: Aggressive emails; doxxed and/or sent packages at home; twitter or website hacked; racist attacks; complaints to employer; fence sprayed; person turned up at home; referred to professional/regulatory body; PhD students attacked on twitter; accused of murder; coordinated harassment; media used quotes out of context. See supplementary data tables at https://www.nature.com/articles/d41586-021-02741-x. ▲

5. Ibid. ▲

6. "Our previous systems were very accurate, but they were very fragile and brittle to even very small changes. If you change a small number of pixels, we were too nervous that it was different, and so we would mark it as different and not take it down. What we did here over the last two and a half years is build a neural net-based similarity detector that allowed us to better catch a wider variety of these variants again at very high accuracy," said Facebook CTO Mike Schroepfer. https://techcrunch.com/2020/05/12/facebook-upgrades-its-ai-to-better-tackle-covid-19-misinformation-and-hate-speech/ ▲

7. Between January 1, 2020 and September 28, 2021. ▲

8. Including, but not limited to Argentina, Australia, Belgium, Benin, Bosnia and Herzegovina, Brazil, Cameroon, Canada, France, Georgia, Germany, Ghana, Guyana, Iceland, India, Indonesia, Ireland, Italy, Japan, Jersey, Macedonia, Mainland China, Mexico, Namibia, Netherlands, New Zealand, Nigeria, Oman, Philippines, Portugal, Puerto Rico, Russia, Singapore, Slovenia, Spain, Sri Lanka, Switzerland, Tanzania, Tunisia, Turkey, Ukraine, United Arab Emirates, United Kingdom, United States, Vietnam. ▲

9. English, Dutch, Portuguese, Spanish, Catalan and German. ▲

10. Data obtained through the Meltwater App. ▲

11. Avaaz's definition of disinformation: "Verifiably false or misleading information with the potential to cause public harm, for example by undermining democracy or public health or encouraging discrimination or hate speech." ▲

12. IFCN stands for The International Fact-Checking Network, which sets a code of ethics for fact-checking organisations, https://www.poynter.org/ifcn/ ▲

13. In this case a fact-check from RTBF, Belgium's public service broadcaster. ▲

14. Instagram, Twitter, Telegram, Facebook and Youtube. ▲

15. https://www.washingtonpost.com/world/2020/09/14/coronavirus-death-threats-global-health-officials/, as well as articles about threats/attacks against Anthony Fauci here and here; Christian Drosten here and here. ▲

16. See articles on Marc Van Ranst here and here. ▲

17. A quick search turns up dozens of journalistic reports as well as academic papers - a few examples here, here, here, here, here, here, here, here, here and here. ▲

18. Relevant fact-checking articles debunking false claims about Anthony Fauci's emails: Factcheck.org, Politifact, Science Feedback, USA Today, LeadStories. ▲

19. This finding is further developed in section 2 of this report. ▲

20. Short for Media Research Center TV. ▲

21. Archive link here. ▲

22. Instagram no longer allows archiving, so Avaaz is unable to provide an archive link. However, as the screenshot shows, the URL is the same pre- and post-takedown -- so this is the same post. ▲

23. Towards a Paris Agreement on Disinformation: https://www.youtube.com/watch?v=T8gEKtyKizU ▲

24. More info about Andersen's actual position, i.e. that he believes the coronavirus moved from animals to humans naturally and not through lab manipulation, can be found here: https://www.nytimes.com/2021/06/14/science/covid-lab-leak-fauci-kristian-andersen.html. The email to Anthony Fauci cited by these disinformers is from January 2020, before Andersen had fully analysed the virus. ▲

25. Repeat misinformers are pages/actors that have repeatedly shared misinformation. In previous reports, like "From Election to Insurrection", Avaaz chose the threshold of at least three misinformation claims from the relevant dataset, with two misinformation shares being at least 90 days apart. The Hodgetwins, for example, were found to be sharing several false stories ahead of the 2020 Georgia elections: https://www.nytimes.com/2020/12/22/technology/georgia-senate-runoff-misinformation.html. Recent whistleblower disclosure also showed that pages that repeat offend for misinformation are permitted to continue to spread misinformation, and that enforcing against such repeat offenders would affect hundreds of thousands of pages: "Page admins who were responsible for 2 or more misinformation posts in pages in the last 60 days are responsible for 59% of misinformation VPVs in the current week. If we only consider VPVs from US users, page admins who were responsible for 2 or more misinformation posts in the last 60 days are responsible for 78% of misinformation US VPVs in the current week." See redacted SEC filings here. ▲

26. Dangerous speech definition by the Dangerous Speech Project, referenced also in Avaaz's Assam report: "Any form of expression (e.g. speech, text, or images) that can increase the risk that its audience will condone or commit violence against members of another group." ▲

27. https://www.facebook.com/100044177901904/posts/340267500789177. For all posts documented, Avaaz re-checked measures on July 20, 2021 and noted any changes. ▲

28. Posts previously documented spreading in an exact, or slightly altered, fashion. We only included posts when we were able to document at least one occurrence that had been labelled by Facebook but we could also find "clones" or "variants" of the same example that had not been labelled. ▲

29. Avaaz's briefing 'How Facebook's AI is failing American voters ahead of Election Day' observed the same failure with regards to clones and variants: "All this is happening despite Facebook's recent claim that its AI is already "able to recognise near-duplicate matches" and "apply warning labels", regarding COVID-19 misinformation and exploitative content, noting that "for each piece of misinformation [a] fact-checker identifies, there may be thousands or millions of copies." https://secure.avaaz.org/campaign/en/facebook_fact_check_failure/ ▲

30. See redacted SEC filings here. ▲

31. Nature, Scientists Under Attack (October 13, 2021): https://www.nature.com/articles/d41586-021-02741-x ▲

32. See full list of words in Table 1 of the Annex. ▲

33. Using the https://exportcomments.com/ app. ▲

34. These posts are: Ben Shapiro's post of Meghan McCain's interview: https://www.facebook.com/100044139414360/posts/276493177165327 (45K comments at time documentation), Tucker Carlson's segment on YouTube about Anthony Fauci's emails: https://www.youtube.com/watch?v=yp6btIhS66c&ab_channel=FoxNews (21K comments at time documentation), the same Tucker Carlson segment about Anthony Fauci's emails on Facebook: https://www.facebook.com/368557930146199/posts/1502075050127809 (11K comments at time documentation). ▲

35. See full list of offensive words in Table 1 of the Annex. ▲

36. See the first 150 terms overall listed in Table 2 of the Annex - full list available upon request. ▲

37. See the first 150 terms overall listed in Table 2 of the Annex - full list available upon request. ▲

38. Avaaz's research into hate speech on social media ahead of the 2019 EU elections and in other tense hotspots like Assam in India, found pages using wedge issues or dog whistle posts and questions to bait their members into responding in the

comment threads. This led to greater engagement on their pages with members incentivised to give their views. See, for example, the Assam report here. ▲

39. Including, but not limited to Argentina, Australia, Belgium, Benin, Bosnia and Herzegovina, Brazil, Cameroon, Canada, France, Georgia, Germany, Ghana, Guyana, Iceland, India, Indonesia, Ireland, Italy, Japan, Jersey, Macedonia, Mainland China, Mexico, Namibia, Netherlands, New Zealand, Nigeria, Oman, Philippines, Portugal, Puerto Rico, Russia, Singapore, Slovenia, Spain, Sri Lanka, Switzerland, Tanzania, Tunisia, Turkey, Ukraine, United Arab Emirates, United Kingdom, United States, Vietnam. ▲

40. English, Dutch, Portuguese, Spanish, Catalan and German. ▲

41. Data obtained through the Meltwater app. ▲

42. https://archive.ph/dzG8C ▲

43. https://archive.ph/wRpwF ▲

44. https://archive.ph/Ueirh ▲

45. Facebook, Twitter, Pinterest and Reddit as provided by Buzzsumo. ▲

46. (excluding Rumble and YouTube since they are video-sharing platforms). ▲

47. See full list of Fact-Checks in Table 4 of the Annex. ▲

48. See full details about the sentiment analysis in the Technical Annex. ▲

49. Prof. Christian Drosten - Punkt.PRERADOVIC mit Dr. Walter van Rossum https://www.youtube.com/watch?v=uzQGYYUzTts. ▲

50. correctiv.org, dpa-factchecking.com, eu.usatoday.com, factcheck.afp.com, factcheck.org, factchecknederland.afp.com, factuel.afp.com, faktencheck.afp.com, fullfact.org, healthfeedback.org, leadstories.com, open.online, politifact.com, reuters.com, rtbf.be. ▲

51. A table of all the posts referenced in this brief can be found in Table 1 of the Annex. The full list is available upon request. ▲

52. Data from CrowdTangle, a public insights tool owned and operated by Facebook. ▲

53. See point 2 of the current methodology for a full list of the fact-checking ratings used in this study. ▲

54. Examples of warning labels: 1. Fact-checking articles shown as "related articles" below the post; or 2. a gray overlay titled, "False or misleading information checked by independent fact-checkers," linking to fact-checking article(s); or 3. A black box titled, "Missing context: Independent fact-checkers say this information could mislead people. See why." ▲

55. The Avaaz research team documented and monitored the presence, or lack, of warning labels on misinformation posts at the date the evidence was collected and again on July 20, 2021. ▲

56. Instagram, Twitter, Telegram, Facebook and Youtube. ▲

57. Data from CrowdTangle, a public insights tool owned and operated by Facebook. ▲

58. Data from CrowdTangle, a public insights tool owned and operated by Facebook. ▲

59. Usa Today, Factcheck.org, Healthfeedback.org, Lead Stories, Politifact. ▲

60. See previous footnote. ▲

61. See the first 150 terms list in Table 2 of the Annex - Full list available upon request. ▲

62. See the full list of term selected by the investigation team in Table 1 of this brief. ▲

63. See Table 3 of the Annex for a list of the first 100 outlets. A full list of outlets can be provided upon request. ▲

64. Counting the top articles up to a maximum of 500 results, for each scientist surname then name and surname, the original sample is of 3,000. As some article titles were showing up both in the top 500 for the scientists name and again in the results for the scientists name and surname, 2,508 is the final article count after deduplication of results. ▲

65. French, English, Dutch, German and Portuguese. ▲

66. Source: www.buzzsumo.com. ▲