

Coronavirus Conspiracy Theories: Tracing Misinformation Trajectories from the Fringes to the Mainstream

AXEL BRUNS, EDWARD HURCOMBE, AND STEPHEN HARRINGTON
DIGITAL MEDIA RESEARCH CENTRE
QUEENSLAND UNIVERSITY OF TECHNOLOGY
BRISBANE, AUSTRALIA

Introduction

The outbreak of the global COVID-19 pandemic has been accompanied by what the World Health Organisation has described as an ‘infodemic’ (Ghebreyesus, in United Nations, 2020a): the rapid and uncontrolled dissemination of mis- and disinformation¹ relating to the virus – including its origins, effects, and remedies – across online and offline social networks and media outlets. Some such stories suggest that the virus was deliberately bioengineered rather than naturally occurring; that its emergence is linked to the adoption of unrelated technologies such as 5G mobile telephony; or that infections can be prevented or treated through a variety of folk remedies or untested experimental drugs. Such claims have found their way into mainstream media reporting or have been echoed by prominent celebrities and politicians, including even the U.S. President himself. Due to such amplification and endorsement, they have reached a much larger audience and, apart from being a significant impediment to controlling the spread of the virus, led to physical and personal harm.

Focussing especially on the conspiracy theory that the coronavirus outbreak was somehow linked to the roll-out of 5G telephony technology in China and elsewhere, which has circulated since late January 2020 and culminated in arson attacks on mobile phone towers as well as violence against telecommunications technicians in the UK and other countries in early April (Osborne, 2020), this chapter traces the trajectory of mis- and disinformation relating to this conspiracy theory across social, fringe, and mainstream media. Drawing on data from the global media database GDELT and the social media platform Facebook, we discuss how early claims of a link between COVID-19 and 5G that originated with far-right and alternative health groups and outlets circulated amongst fringe networks, before finally receiving substantial amplification as celebrities and some media outlets began to share such stories. This increased circulation also forced responses from official sources and mainstream media coverage, and such engagement further emboldened fringe groups to pursue their conspiracy theories.

The chapter presents a forensic analysis that draws on large-scale quantitative and in-depth qualitative approaches, offering a detailed case study that is illustrative of the dissemination dynamics for mis- and disinformation well beyond the COVID-19/5G case itself. We collate and combine the results of two prior studies that investigated the global dissemination dynamics of this conspiracy theory on Facebook (Bruns, Harrington, & Hurcombe, 2020) and the coverage of these conspiracist claims in fringe and mainstream media (Bruns, Hurcombe, & Harrington, under review), respectively, and through this synthesis of our observations from different segments of the global mediasphere develop a considerably more detailed picture of the

¹ We use the terms ‘misinformation’ and ‘disinformation’ together in this article as they are distinguished by intentionality (Wardle & Derakhshan, 2017: 20): misinformation is false information that is shared in the mistaken belief that the information is accurate, while disinformation deliberately aims to confuse and mislead. For the purposes of our analysis in this chapter, however, this distinction is irrelevant: whether it is shared deliberately or unintentionally, in either case, the end result is that incorrect information is disseminated further.

interconnections and information flows between them. This also points to the weak links in the media ecology that are being exploited by the proponents of mis- and disinformation, and identifies key inflection points at which the spread of such misinformation may be reduced.

We focus on the COVID/5G conspiracy theory as one of the most distinct and impactful mis- and disinformation themes to have emerged during the first months of the global pandemic. While other conspiracy theories related to the coronavirus outbreak have also circulated widely, the claim that 5G technologies exacerbated or even caused COVID-19 infections emerged in January 2020, soon after the first mass outbreaks in Wuhan, China, and eventually gained enough prominence to lead anti-5G activists to attack dozens of mobile telephony towers in the UK, the Netherlands, and other countries, in April (Osborne, 2020). Eventually, the United Nations and several national governments were forced to issue official statements debunking the conspiracists' claims (e.g. United Nations, 2020b; UK Government, 2020; Australian Government, 2020).

From Information Vacuum to Infodemic

The emergence of such mis- and disinformation during times of crisis is hardly unusual. Major crisis events are experienced first in an information vacuum: during the early stages of such events, even official sources and the quality news outlets reporting on them must necessarily acknowledge that they do not yet have the full details of the situation; this gives rise to the reporting of uncertainty, speculation, rumours, and even unintended misinformation (Allport & Postman, 1946), and may also lead less scrupulous media outlets to engage in sensationalist fear-mongering and deliberate disinformation. Meanwhile, citizens unable to inform themselves sufficiently from the updates provided by official sources and mainstream news media, and concerned about the impact of the crisis event on their own lives and livelihoods, may be tempted to supplement their information diets with material from unofficial, less reliable sources – by searching more widely than they would normally be prepared to do for any news reports that claim to shed light on the unfolding event, and by seeking out alternative sources of information and speculation in their own (offline and online) social networks.

This general pattern of a broader engagement with rumours and speculation, some of which may subsequently turn out to be mis- and disinformation, is even more pronounced for large-scale, long-term, high-impact events. The coronavirus outbreak of 2020 represents an extreme case even for this category: as a global pandemic that caused two million deaths within its first twelve months and still showed no signs of abating, it has no equal amongst public health crises during the past one hundred years. Communities around the world have continued to live with uncertainty about the precise causes, dynamics, and duration of the pandemic – it is unsurprising that they have also continued to search for information that might provide some hope of an end to the crisis, or at least points to a scapegoat to blame for it. This ongoing search for answers creates an opportunity for interested actors to position their preferred targets – from specific ethnic, ideological, or religious groups to imagined cabals of conspirators and 'deep state' actors – as such scapegoats, and to inflame public antipathy towards them.

This, then, is why the coronavirus pandemic has been accompanied by a veritable infodemic: the information vacuum associated with the pandemic is so profound and persistent that it has created the perfect conditions for an exceptionally high volume of mis- and disinformation. Further, it is possible that the lockdowns and other restrictions on everyday activities enacted in many countries around the world have contributed inadvertently to this growth in the transmission of and engagement with mis- and disinformation: people confined to their homes during this time are likely to have spent a greater amount of time than usual with their digital and social media, and this would have increased the extent of their engagement with such problematic content. Although lockdowns and other restrictions were usually entirely justified from an epidemiological perspective – and resulted in the successful suppression of further viral transmission in the literal sense, as the examples of New Zealand or the Australian state of Victoria clearly demonstrate – they may have had an opposite effect on the figuratively 'viral' dissemination of COVID-19 mis- and disinformation.

This chapter does not reiterate the detailed forensic analysis of such dissemination of problematic information that we have already presented in our previous publications on this topic. Rather, we revisit the

findings of these studies – covering the situation in fringe and mainstream media and in social media, respectively – and from these extract several key observations that point to the major factors governing the dynamics of this infodemic. While our immediate analysis is limited to the specific context of COVID/5G conspiracy theories, we suggest that many of these observations apply considerably more broadly, and identify opportunities for improving the communicative response to future infodemics – by government authorities, public officials, news organisations, journalists, platform providers, and ordinary citizens. In the following sections, we first present a brief overview of the dissemination dynamics of COVID/5G conspiracy theory content, and then outline several key aspects that deserve further exploration.

From Obscure Origins to Frontpage News

Our investigation of the dissemination patterns for conspiracy theories linking COVID-19 and 5G technologies, presented in more detail in Bruns, Hurcombe, and Harrington (under review) and Bruns, Harrington, and Hurcombe (2020), drew on data from the global news database GDELT (Leetaru & Schrod, 2013), which tracks the content of mainstream and fringe news outlets around the world in close to real time, and from the social media data service CrowdTangle, which tracks the activities of public pages, public groups, and public verified profiles on Facebook (CrowdTangle, 2020); for the sake of simplicity, we will refer to these as *public spaces* on Facebook from here on. We queried both services with search terms that related clearly to the coronavirus outbreak *and* 5G technology, for the period of 1 January to 12 April 2020 (taking in the emergence of COVID-19 as a global threat at the start of the year and the wave of arson attacks in the UK and elsewhere in early April); this resulted in datasets of 1,871 news articles from mainstream and fringe sites from GDELT, and 89,664 posts from public spaces on Facebook from CrowdTangle.

We note here that our choice of search terms will have introduced some unavoidable limitations: while terms such as ‘corona’, ‘COVID’, and ‘5G’ were widely used across diverse language communities, they will have systematically excluded content in languages that transliterated these terms into local spellings (e.g. ‘koronawirus’ in Polish) or non-Latin scripts (e.g. Chinese, Japanese, Cyrillic), unless such scripts used Latin letters for key terms like ‘5G’. Further, as GDELT does not provide access to the full texts of articles, our dataset from this service is limited to news articles that contained these terms in their titles or URLs; this, however, is not unwelcome as it focusses our analysis on articles that are explicitly *about* the COVID/5G nexus rather than addressing it only in passing. Finally, our datasets are limited also by the quality of the source data: on the one hand, though explicitly a global database of news content, GDELT’s coverage may still be more comprehensive for the leading Anglophone nations than for other, smaller language communities; on the other, for ethical and privacy reasons, CrowdTangle covers only *public* spaces on the Facebook platform, and we are therefore unable to investigate the further private or semi-private circulation of conspiracist content outside of such public visibility (i.e. in private groups or individual profiles). Such limitations also mean, however, that our data focus especially on some of the most central and most influential elements of the global mediasphere.

The patterns of activity around the COVID/5G conspiracy theory that emerge from the two datasets align well with one another (fig. 1), yet also show subtle differences. In each case the bulk of activity occurs in April, as the wave of arson attacks on mobile telephony towers unfolds in the UK and elsewhere; such media coverage and social media posting may react to the first such incidents, but probably also provides inspiration for further copycat attacks. The preceding three months since the start of 2020 show somewhat different dynamics for news sites and Facebook spaces, however: low-level posting activity on Facebook occurs from the start of the year, and increases in distinct steps at the end of January, at the end of February, and in mid-March 2020, while news coverage of the conspiracy theory is largely absent until the mid-March escalation. This means that COVID/5G claims are left to circulate in public spaces on Facebook (and almost certainly shared in its more private channels, and on other social media platforms) during these first eleven weeks of the year without eliciting any significant news media response.

Facebook Posts and News Articles per Day

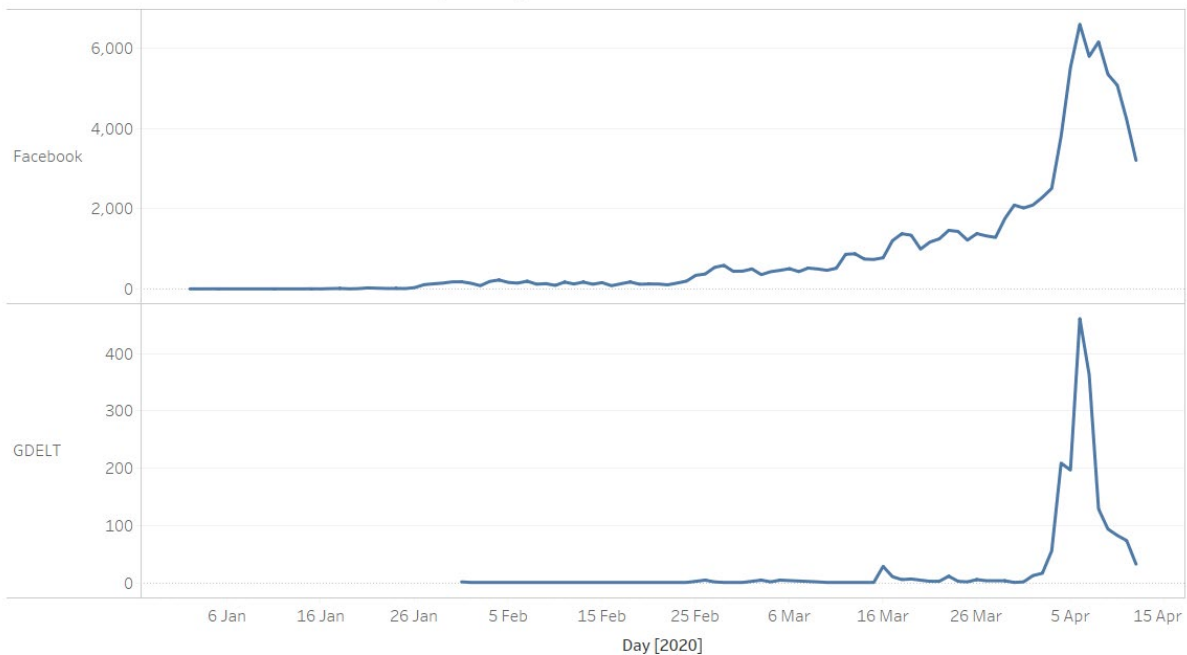


Fig. 1: Volume of Facebook posts and news articles per day, 1 Jan. to 12 Apr. 2020. (Different axis scales are used to provide greater detail.) (Data from Bruns, Harrington, and Hurcombe, 2020, and Bruns, Hurcombe, and Harrington, under review.)

This is especially notable as GDELT covers articles from both mainstream and fringe news outlets, including such hyperpartisan US sites as *InfoWars* or *Free Republic*. During this early period, these sites do cover the conspiracy theory, often approvingly – yet even they invest very little overall effort in promoting and amplifying its claims, although doing so might have aligned with their broader ideological and political positions. Only 43 of our GDELT articles were published during this initial period, and of these 28 support or at least quote the conspiracy theories and their proponents, and 15 are by US-based fringe news outlets – but this handful of articles represents only 2% of our total dataset, and would also have accounted for only a fraction of the total published output of these outlets over this period.

As the bulk of activity around the conspiracy theory during this time is taking place on Facebook (and, we assume, on other social media platforms not covered by our study), the dynamics of engagement with COVID/5G mis- and disinformation here are somewhat more distinct. We distinguish between several phases in the overall timeline; each is marked by a substantial increase in the volume and reach of conspiracist content, and driven by a different coalition of actors; we describe these in greater detail in our previous research (Bruns, Harrington, & Hurcombe, 2020).

During the earliest phase, in January 2020, Facebook sees very little public discussion of the COVID/5G conspiracy theory; only a few pre-existing conspiracist communities circulate content from obscure sources with a track record of highlighting the supposed dangers of 5G (and before that, 4G and 3G) radio emissions. Such actors have effectively retro-fitted the coronavirus outbreak (then not yet classed as a pandemic) into their existing worldview; this pattern has also been observed for other conspiracist groups, from anti-vaccination activists to those believing in a secret world government. During this phase there is very little circulation outside of such established fringe groups, however, and indeed some of this early content is in French and German and does not yet reach Anglophone participants.

This changes in a second phase of transmission, from late January to late February: new, English-language posts that mirror (and possibly directly translate) the content of earlier non-English warnings about apparent connections between COVID-19 and 5G roll-outs in Wuhan appear, and further speculation connects this theory

with other conspiracist claims: for instance, that 5G proponents are not merely ignoring its effects on human health, but are themselves part of a conspiracy to subdue or even cull the global population using COVID-19 as a 5G-activated bioweapon. In making such claims, anti-5G conspiracists are thus attempting to enrol various other communities (e.g. those with pre-existing beliefs in chemtrails, the use of vaccination for population control, or 'deep state' conspiracy theories) in their cause. During this time, content from a greater number of Anglophone conspiracist outlets (such as *Vigiliae* or *The Liberty Beacon*) is also shared on Facebook. We speculate that the growth in such claims about 5G and its wider role in various conspiracies is prompted also by the UK government's decision to allow the Chinese telecommunications company Huawei to participate in the development of the British 5G telecommunications network, against the explicit advice of the US administration (Kleinman, 2020). Made in late January 2020, this decision would have helped to energise anti-5G activists, and led them to find new and timely arguments against 5G technology in the latest conspiracy claims.

A third phase, from late February to mid-March 2020, sees the range of conspiracies connecting COVID-19 and 5G broaden even further. The various ancillary conspiracist groups now engaging with the core claim of a link between the pandemic and the telecommunications technology embellish this claim by inserting their own preferred targets of suspicion, from philanthropists like Bill Gates and George Soros through transnational organisations like the WHO or UN to imaginary enemies like the Illuminati or the Antichrist. This phase is also characterised by substantial localisation: having circulated at first in French and German, and then especially in English, content is now posted widely especially in southern and eastern European languages; this also coincides with the imposition of lockdowns in several European nations. The material is further extended by the introduction of posts and videos from a variety of conspiracist sources and activists – including diverse videos from YouTube and other platforms that present the claims of conspiracy theorists in a pseudo-scientific format.

From mid-March onwards, such conspiracy theories receive their greatest amplification (before the spate of arson attacks in April) – and now, the more distinct dynamics of the dissemination of COVID/5G mis- and disinformation on Facebook join up again with the patterns we have observed in fringe and mainstream media coverage. In this fourth phase, amplification is provided especially by various celebrities who share or comment approvingly on conspiracist claims and thereby make them visible to their often very sizeable social media audiences. The earliest prominent example, on 16 March, is US-based R&B singer Keri Hilson, whose tweets endorsing the alleged link between COVID-19 and 5G not only reach her Twitter audience, but are also recirculated widely on Facebook in the form of screenshots, and covered extensively in the US and international entertainment press, not least also in Africa and southeast Asia. Those reports (often embedding the tweets themselves or including them as screenshots) are then themselves posted across a large number of entertainment groups and pages on Facebook, with a cumulative total of tens of millions of followers. Although due to a substantial backlash against these claims Hilson herself soon deleted her tweets, the screenshots continue to circulate well beyond that point. Other celebrities – including actors Woody Harrelson and Jon Cusack, rapper Wiz Khalifa, UK reality TV personality Amanda Holden, Nigerian evangelist preacher Chris Oyakhilome, and UK boxer Amir Khan – make similar claims in subsequent days and weeks; further, the period following such celebrity amplification also sees a much increased circulation of original conspiracist content – as posts, as links to conspiracist Websites, and as videos embedded from YouTube and other platforms – on Facebook.

These celebrity interventions also change the nature of broader media coverage: while until mid-March, fringe news sites with sympathies for the COVID/5G conspiracy theory were largely on their own in covering the story, now reporting is dominated by articles focussing on celebrity views; 59% of all media articles identified by GDELT are by mainstream or entertainment news outlets, 43% of all articles report on the statements made by Hilson and others, and more than half directly quote Hilson's views or even the conspiracy theorists on whom she drew. Notably, some 31% of all articles during the second half of March also provide fact-checks, but these occur predominantly in mainstream news outlets and specialist technology, science, and business news publications, and not in the entertainment outlets that are especially active in covering the celebrities. Media coverage during this phase, then, serves mostly to transport conspiracist content to an even greater public – from its obscure, fringe origins via celebrity endorsement to mass circulation in entertainment and general news

media. The critical review of conspiracist claims by fact-checks and other considered coverage is unlikely to reach similar audiences; the ‘stenographic’ (Foser, 2009), often uncritical reporting on celebrity statements especially in the entertainment press may instead lead audiences to explore the conspiracist views endorsed by celebrities in their original form.

Finally, both public Facebook activity and media coverage peak at exponentially increased levels during early April 2020, as the wave of arson attacks on mobile telephony installations unfolds in the UK and elsewhere. There is no obvious trigger for these attacks (and even if they were planned on Facebook and other social media platforms, this would likely have taken place predominantly in non-public spaces that we cannot observe), but we do note the circulation of a lengthy anti-5G post in southern African spaces on Facebook, from 30 March, that contains the ominous line “all these technologies need to be destroyed to melt Fire destroys all.” This emerges from a highly engaged network of African conspiracist spaces that centres on controversial Nigerian preacher Chris Oyakhilome and connects with evangelist communities across Africa, as well as reaching into southeast Asia, the United States, and Britain. Also incorporating a YouTube video (now deleted) by British far-right and anti-5G activist Mark Steele, it is thus possible that this post could have influenced the British anti-5G activists who would soon attack mobile telephony towers.

During this final phase, conspiracy theory content continues to circulate widely on Facebook; several prominent posts and videos – by notorious conspiracist David Icke, by an impostor claiming to be a former Vodafone UK executive, or by Oyakhilome and other religious conspiracy theorists – each circulate across public spaces with many millions and tens of millions of followers, while media coverage of celebrity endorsements continues to be posted in public spaces with similarly-sized audiences. Media coverage, meanwhile, focusses increasingly on the arson attacks, and now predominantly reports on the facts and causes of these attacks without providing a substantial platform for the conspiracy theorists themselves. Mainstream, local, and specialist science, technology, and business news outlets now account for the vast majority of the coverage, with entertainment and related outlets contributing only 2% of the total. Given the much-increased overall volume of reporting, this entertainment content still represents nearly 200 articles, however, and such articles continue to cover their celebrity subjects in a considerably less critical fashion even when they are endorsing conspiracy theories now proven to result in physical harm to property and individuals.

Mainstream coverage, by contrast, is significantly more critical, and for the first time also substantially incorporates the voices of public officials, science and technology experts, and relevant national and international institutions. Such inclusion is unevenly distributed across countries, however, and reflects national specificities: US public officials remain largely absent from such coverage (5% of US articles), while their UK counterparts are cited in 40% of UK reports, and Nigerian public officials (64% of domestic articles) are very actively responding to Oyakhilome’s views (which appear in 15% of stories). This may reflect differing levels of trust in government sources in different nations, and more general attitudes towards experts and officials; of course, the inclusion of such authoritative voices is also possible only if authorities have chosen to actively engage with the COVID/5G conspiracy theory. In the UK, the arson attacks made it impossible for the national government to ignore conspiracist claims any longer, and the same is likely true for Nigerian authorities with respect to the views circulated in their evangelist communities; in other countries, authoritative responses appeared considerably later: the Australian government, for instance, only released its statement on “5G Misinformation and COVID-19” on 20 May 2020.

Key Observations

This brief review of these patterns in the circulation of COVID/5G conspiracy content on Facebook and in fringe and mainstream media, and of the alignment and interplay between these spaces, points to several key observations, which we outline in the following section. These observations should also inform the development of more effective strategies – by journalists and news outlets, by public officials and authorities, but also by the users and operators of social media platforms – for combatting and mitigating mis- and disinformation, and indeed for determining whether and at what point to do so. We identify six major points.

The Immediate Impact of Conspiracist Sites Is Limited

Conspiracy theories about the health effects of mobile telephony technologies are as old as these technologies themselves; they have co-evolved with these technologies, and will persist as 5G is superseded by 6G. The same holds for other conspiracy theories, from anti-vaccination activism to claims of a secret world government run by Bill Gates, the Illuminati, or the lizard people. Yet many such conspiracist views remain confined to a small fringe of supporters in communities on Facebook and other social media platforms, and supplied by a cottage industry of individuals and Websites producing mis- and disinformation in favour of the conspiracists' claims – often by drawing on genuine media and scientific content that is taken out of context and misrepresented in order to make it serve the community's needs.

Such communities are not hermetically disconnected from wider public discourse; they do not form echo chambers or filter bubbles (Bruns, 2019), and in fact many actively seek to proselytise and attract new followers to their cause – but often their claims are so outlandish and ill-presented that few others will be converted. Through social sharing by others in their networks, for example, users of social media platforms such as Facebook may have come across anti-5G views at various times, yet the generally small follower numbers of anti-5G pages and groups on the platform also show that few have been convinced to join these communities, and much less to lend them their enthusiastic support.

This pre-COVID status quo is clearly reflected in the initial phases of our analysis: even as anti-5G activists construct the disinformation that enables them to claim a link between the coronavirus outbreak in Wuhan and the supposed prior rollout of 5G telephony in the city, such claims appear only in a handful of Websites that are fringe even amongst fringe news outlets, and circulate in public spaces on Facebook that count only some tens of thousands of followers in total. Notably, even established and influential fringe outlets (such as the far-right site *InfoWars*) appear reluctant to engage with such content, and cover these claims only in passing at this stage.

In this fledgling state of the conspiracy theory, therefore, it is unnecessary for authorities and other stakeholders to engage with such claims; indeed, to do so might be more harmful than useful as it could produce a 'backfire effect' (Nyhan & Reifler, 2010) by amplifying the conspiracists' views. Such engagement, and the perception that 'the establishment' is seeking to suppress their views, would confirm the fringe community's view that there is indeed a conspiracy to hide the 'true' facts, emboldening them to continue their activities.

Celebrities Can Become Superspreaders

Indeed, the effects of amplification are clearly demonstrated by the involvement of various celebrities in the COVID/5G conspiracy theory. Following the relatively limited circulation of conspiracist content during the first months of 2020, there is a substantial increase in its visibility from mid-March, and an outbreak of such content well beyond the communities of anti-5G activists and related conspiracy theorists that initially shared and engaged with it. We have highlighted here especially the mid-March tweets by Keri Hilson, but any of the celebrities subsequently engaging with the COVID/5G conspiracy theory might just as easily have started this trend. As such celebrities post ill-considered thoughts on the 'true' causes of COVID-19, and linking to and repeating the claims of conspiracy theorists, they connect their own, often very sizeable audiences with such problematic and potentially dangerous perspectives; further, to the extent that audiences see these celebrities as admirable and trustworthy, such endorsements also confer some of these attributes on the conspiracy theorists themselves.

In this sense, and with the necessary caution about reappropriating epidemiological language for the description of communicative phenomena, these celebrities act as superspreaders for conspiracy theories. Their own social media posts, their other public statements, and finally also the mainstream and entertainment media coverage, transport these ideas from fringe spaces to a potentially global audience, and give them a veneer of legitimacy they did not have before. This is clearly documented in the present case by the coverage of Hilson's tweets in news outlets from the US, UK, Nigeria, Kenya, Indonesia, the Philippines, and many other countries around the world. As we have noted, even where such coverage is critical it nonetheless often contains Hilson's statements verbatim (and may even include links to her conspiracist sources) – and if they are included as

quotations or screenshots rather than as embedded tweets, they will persist in this form even after Hilson's tweets themselves were deleted. (The same is true for the many Facebook posts that included screenshots of those tweets.)

'Soft' Newsbeats Are Journalism's Weak Spot

The prevailing nature of such celebrity coverage also highlights that different forms of journalism engage with conspiracist content in markedly different ways. Coverage of Hilson and other celebrities engaging with COVID/5G claims was led (at least early on) especially by entertainment news outlets, and entertainment journalists within larger news organisations; their reports sometimes adopted an amused or dismissive tone (painting Hilson as the latest celebrity to make an embarrassing and controversial gaffe) but usually took few steps to seek expert input, to explicitly debunk the claims, or to protect their audiences from being exposed to such misinformation. Instead, celebrity journalism often pursues a sensationalist coverage strategy, or simply engages in basic stenography ('[celebrity] said/did [unusual thing]', reported without further analysis), that maximises the controversial aspects of a story and turns it into irresistible clickbait.

Even if the journalistic profession is generally committed to an objective and truthful style of coverage that informs its audiences (and adherence to such an ethos is clearly variable across different nations and news organisations at the best of times), that commitment appears considerably less developed within what are generally thought of as 'soft' newsbeats such as entertainment, lifestyle, and sport, as compared to 'hard news' areas like politics, crime, or financial reporting. We suggest that it is no accident that the popularisation and amplification of COVID/5G conspiracist claims occurred via entertainment reporting. Had similar claims been endorsed by serious political or business leaders – or even by a celebrity-turned-politician like Donald Trump – they would have been subjected to considerably greater scrutiny in the 'hard news' sections of news publications, rather than allowed to circulate unchallenged via the 'soft news' of entertainment sections. This, then, points to a systemic weakness in the contemporary journalism industry that might risk not only the casual dissemination of problematic content, but also an active exploitation by the organisers of disinformation campaigns. It shows us that, especially in the context of major crisis events such as the COVID-19 pandemic, *all* journalists need to be vigilant about keeping their audiences safe from harm, and that news organisations must rethink the potential impact of 'soft news' as well on public opinion. Organic Networks Are Greater Amplifiers than Inauthentic Activities

Our observation about the impacts of the amplification of conspiracist views both by celebrities themselves and by reporting about celebrities is especially important because we have found very little evidence of what Facebook now calls 'coordinated inauthentic behaviour' (Gleicher, 2018): a term that refers to the organised and orchestrated spread of such content with the help of automated bots or coordinated networks of human-run accounts, or a mixture of both. Much of the spread of conspiracy theories connecting the coronavirus pandemic and the rollout of 5G technologies that we observe here appears to unfold organically: from very small beginnings it gradually reaches larger audiences, and every phase change can be connected to the online actions of specific individuals and groups, or to events in the offline world. It is possible that the increase in the circulation of anti-5G content in southern and eastern European languages in early March was assisted by coordinated actors (this would fit the broader *modus operandi* of influence operations by the Russian 'Internet Research Agency', for instance; cf. Chen, 2015), but we have no conclusive proof for such activity.

The predominant attack vector for COVID/5G conspiracy theories is thus via organic circulation through social networks (of which we are able to observe only the public spaces on Facebook, of course; circulation in private and semi-private spaces on Facebook and other social media platforms will have provided even greater reach), and via public amplification through reporting in fringe and mainstream news media. This raises concerns on several levels. First, we have noted the need for journalists especially from 'soft' newsbeats to exercise significantly more caution in shaping their stories. Second, there is a need for further efforts to improve news, media, and especially digital media literacy amongst the general population, to increase their resistance and resilience to mis- and disinformation about this and other topics. Finally, we must explore and test the effectiveness of existing and new measures by social media platforms to combat the spread of problematic

information: for instance, are measures such as the flagging or take-down of problematic content, or the suspension and banning of the accounts that are most active in spreading it, successful in limiting the further circulation of such materials, and are there other approaches that could complement them?

Content Take-Downs Work – But Only for Some Audiences

The preceding question can be addressed at least in part also from our own observations. Our research encountered a substantial number of posts sharing videos and other content from external sources that was subsequently removed from their source platforms and therefore also no longer accessible via Facebook. Such take-downs do reduce the further circulation of the posts that contain such content, but we also observe that users combat the take-downs by reuploading such content to other sites with more permissive content policies, and share the new links in comments on the original Facebook post or in new, updated posts. Such practices have also been observed in the circulation of the notorious *Plandemic* ‘documentary’ during May 2020, which after its removal from YouTube and Vimeo was re-shared using alternative platforms that included Bitchute and even the Internet Archive (de Keulenaar et al., 2020). Take-downs may thus be useful in protecting general social media audiences from problematic content, but more committed followers of these conspiracy theories may look for workarounds and even see these take-downs as further evidence of the *depth* of the conspiracy, indicating that social media platforms are themselves nefariously trying to hide ‘the truth’. Nonetheless, such take-downs should be continued: their impact on general circulation does remain valuable even if they cannot entirely suppress such mis- and disinformation.

Again, however, we must note that the impact of take-downs is also significantly undermined by media reporting that continues to spread this content after the original materials are removed. This is the case for stories that report on the spread of conspiracy theories by citing their claims and even including excerpts from articles and videos – but as we have noted for celebrities engaging with the COVID/5G conspiracy theory, it also applies to take-downs of content by the original authors themselves. News media coverage, and especially the news media republication of these posts in formats that are more persistent than the posts themselves, undermines the success of take-downs in limiting further circulation. Although it is at times important for journalists to report about such statements from celebrities and other persons of public interest, it is also critical that they do so in ways that do not contribute to the further circulation of mis- and disinformation.

The Right Time to Respond to Mis- and Disinformation Is ... When?

Finally, similar considerations also apply to the responses to such mis- and disinformation made by official sources, and reported in the media. Our observations indicate a pronounced reluctance by public officials and other authoritative stakeholders to engage directly with the COVID/5G conspiracy theory even as it began to circulate at more substantial volume from mid-March onwards. We cannot pretend to have comprehensive advice on when officials should respond to such circulation, but we suggest that they could draw on much the same data sources and analytical approaches we have used in our study, to monitor the volume and reach of problematic information about 5G technology and other conspiracist targets. While such mis- and disinformation remains confined to existing conspiracist communities, it would be counterproductive to make a public response: this would raise the profile of the conspiracy theory well beyond its community, and merely reinforce conspiracists’ claims that official actors really are trying to suppress their views. Similarly, once there is broad public discussion of the conspiracist claims, and even physical attacks and other offline actions resulting from them, there is an obvious need for public officials to respond and take action.

Most critical, however, is the period between complete obscurity and large-scale breakout. Our retracing of the COVID/5G conspiracy theory across social and news media suggests that it would have been useful for relevant stakeholders to respond considerably more proactively to the first acts of amplification by celebrities. This may have prevented other public figures from jumping on the bandwagon and adding their own endorsements, and might thereby have reduced the breakout of these claims beyond their communities of origin. The effective transmission of such responses would also have required the cooperation of the journalists

covering the celebrity endorsements, of course – a reporting of official statements only in ‘hard news’ sections, and not in entertainment media alongside the celebrities’ own statements, would not have been particularly effective. We speculate that such proactive and timely responses from relevant authorities did not eventuate in part because it seemed inappropriate or frivolous for public officials to respond to singers, actors, or sports stars – if so, this reluctance to engage should be urgently rethought in light of the considerable impact on public debate that such influencers now marshal. We acknowledge our speculation on this point, and suggest that further research should explore these decision-making processes on public communication strategies in greater detail, especially also by conducting in-depth interviews with relevant stakeholders.

What form these responses take – to whom they would be directed, in what venues, and so on – is also an open question. Given existing levels of general distrust in authority figures, it might be useful for such messages to look less ‘official’, appear to come from ordinary community members, and debunk the relevant conspiracy using a widely-shared frame of knowledge (rather than by using abstract and complicated scientific jargon). Whether, when, and how best to dissuade people from a misinformed belief are, however, very difficult questions that we will continue to explore in future research, with easy, simple answers likely to prove elusive. Finally, we also acknowledge that it is considerably easier to critique the timing of such judgment calls with the benefit of hindsight than it is to make them in the heat of the moment, amidst the broader challenges of a global pandemic of unprecedented scale. However, it is only through the systematic, critical review of such events that we will be able to develop a better sense of the appropriate thresholds that should trigger a public response – and we hope that our observations in this chapter make a useful contribution to this broader challenge.

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