



Insights into Covid-19 related News Media Discourse and Public Health Authorities' Digital Communication

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EXECUTIVE SUMMARY

This research report is based on strategic analysis of the communications surrounding the management of the COVID-19 pandemic and originating from public health authorities in Belgium, the United States, and the United Kingdom, along with their respective media outlets. The report's intent is to help shed light

on the pandemic-related discourses made available to populations via traditional media and the Facebook pages of health authorities, as well as to provide a deeper understanding of the various user profiles found on these social media platforms.

Why focus on traditional media and social media amid a crisis?

The relevance of this study derives from a context in which authorities must handle communication challenges in a crisis to convey an effective message with which the population will be able to comply. Coherent messaging by authorities in a context of information overload is one of the elements to consider when evaluating citizens' decision-making processes in a crisis.

Indeed, traditional media and social media play a key role in individuals' decision making in terms of what behaviour to adopt in a crisis. Traditional media continue to be an important source of information in a crisis, in addition

to putting forward a particular narrative of the pandemic that helps to orient readers' perception of the topic at hand. Several studies show that populations largely turned to traditional media for news, especially at the beginning of the pandemic. Social media are becoming an increasingly important source of information for populations. Importantly, they also raise issues about the quality of information conveyed, with misinformation being especially sharply criticised in the realm of public health. Indeed, social media complicate individuals' decision-making processes, requiring them to expend greater effort to sort out truth from falsehood.

Media coverage of the pandemic

The quantitative study of media coverage discussed in this report covered nine newspapers, i.e., three per country. A total of 5,932 texts were collected through random sampling (2,393 in Belgium, 2,006 in the US, and 1,533 in the UK).

Time and place of the texts' publication

The results show that the media coverage was lower at the beginning of the first year of the pandemic and grew during the first wave (March to May 2020).

Authors, journalistic intentions, and strategies used to refer to the pandemic

Most of the published texts have been written by news professionals, although this proportion is lower in the UK than in the other two countries studied. Consequently, the primary intent of the texts has been to provide news, although other intentions were noted in varying proportions over the first year. Notably, other intentions were found to be most frequent in the UK, i.e., mostly raising awareness and appealing to or advising readers.

Place occupied by the pandemic, themes addressed, and actors highlighted

Regarding the texts' content, we can see that the economy has occupied an important place, both in terms of the main themes addressed in the texts and the actors mentioned. This trend has been more pronounced in the UK and the US than in Belgium, where several issues have garnered a similar level of attention. Although there are variations between countries, overall, themes such as the psychological consequences of the

pandemic and the science behind the virus have been addressed much less often. Finally, in addition to economic actors, the texts give a prominent place to political actors and the people physically and socially affected by COVID-19. It is also interesting to note that public health actors occupy a varying place in the newspapers. They have garnered more attention in the UK, mainly in terms of physical health experts, i.e., people not representing public health authorities.

Uses of public health agencies' Facebook pages

The three pages examined were SPF-Santé Publique in Belgium, the Centers for Disease Control in the US and the Department of Health and Social Care in the UK. We quantitatively analysed 2,555 posts (384 in Belgium, 946 in the US, and 1,225 in the UK).

Content of publications

Public health agencies have primarily used their respective Facebook pages to inform the public about health measures and resources. In some cases, posts were aimed at convincing people to adopt certain behaviours through incentive or persuasive messages. These messages made use of videos, infographics, and/or photos. In Belgium, the authorities also used the Facebook page to broadcast live press briefings.

User profile

The study of user messages reveals a variety of intentions and typical profiles. Some take a more incisive tone, whether they are by people who espouse conspiracy theories or by individuals criticising anyone making such statements. Others have used this space to find solidarity and support or to suggest solutions to the problems and issues posed by the pandemic. This form of expression is especially present on the Belgian public health page, which also contains answers and supportive messages from the page managers in response to questions asked by users.

Recommendations

At the conclusion of this research, we set forth 17 recommendations to equip NATO allies to effectively emerge from the global crisis and better prepare for future crises. Concretely speaking, the recommendations are focused on three main objectives:

- Operating more efficiently within the digital ecosystem co-created by and with the news media;
- Operating more efficiently within the ecosystem co-created by social media; and
- Better disseminating public health messages within a complex information ecosystem.

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INTRODUCTION

On 11 March 2020, the Director-General of the World Health Organization (WHO), Dr. Tedros Adhanom Ghebreyesus, stated that in light of the assessments and statistical studies available to his teams of experts, the coronavirus disease had reached the threshold of a pandemic and that drastic measures had to be taken by public health bodies and authorities across all countries to address it (WHO, 2020). In his words: 'WHO has been assessing this outbreak around the clock and we are deeply concerned both by the alarming levels of spread and severity, and by the alarming levels of inaction' (WHO, 2020). Faced with this new virus, the governments of several countries announced measures to curb the spread of the pandemic, such as masking, physical distancing, and widely shuttering schools and businesses.

In a crisis of this magnitude, communications by the authorities and the media play an important role in populations. The information put forward not only provides data on the virus and how to protect against it but also plays a role in people's understanding of the issues associated with the crisis (level of risk) and influences individuals' decision making pertaining to public health recommendations.

The purpose of this report is to document a strategic analysis of the communication

ecosystem components of three NATO allies (Belgium, the US, and the UK) during the COVID-19 pandemic. Specifically, two components were analysed:

- How news media covered the pandemic in some allied countries; and
- How the health authorities of some allied countries used Facebook during the pandemic and how users used the official pages of health authorities.

The analyses were performed in two stages. The first was a study of the media coverage of newspapers using an analysis grid developed inductively by the team and tested in previous research. The objective of this first stage was to analyse the content of the Belgian, American, and British written press within the pandemic risk and crisis communication process by evaluating elements related to the production context as well as the content communicated to populations.

The second stage consisted of examining the Facebook pages of public health agencies. These digital and social platforms are massively used by the public and, for many socioeconomic groups, they are an indispensable way of obtaining information. Thus, we conducted a targeted

analysis of posts and related comments taken from the Facebook pages of the public health authorities concerned in the three countries studied. This stage focused on grasping the strategic use of this information-sharing platform by these powerful authorities, as well as users' behaviours and emotional states during their interactions with such content.

These results allowed us to draw conclusions about the effectiveness of communication practices in each country with respect to the principles of strategic communication in a crisis context. In terms of news coverage, the proportion of texts devoted to the pandemic was found to be significant throughout the year, but higher when the number of cases went up. We can also see that the proportion of texts seeking to inform, although in the majority, has varied between countries and over the course of the pandemic. Finally, the media has covered the pandemic from different angles

in different countries. However, it should be noted that economic and political issues quickly began to occupy an important place in reporting, with texts often dealing primarily with the physical consequences of the pandemic.

Most of the public health agency Facebook pages have been used to provide the public with information on public health measures and resources. Different profiles and types of users have been identified, underscoring the importance of considering these platforms as two-way communication environments.

Finally, based on these results, we make concrete recommendations to provide governments with important elements to consider and apply in future massive crisis communication campaigns.

STRATEGIC COMMUNICATION DURING THE COVID-19 PANDEMIC

Described by the scientific community as a mega-crisis (Boin et al., 2021; Pashang, 2020), this unprecedented emerging infectious virus (SARS-CoV-2), which causes COVID-19, has significantly exacerbated many social inequalities and fuelled a rise in violent acts and discrimination against certain communities, in addition to undermining economic, environmental, political, security, societal,

and human dimensions around the world to varying degrees (OECD, 2022; Carignan et al., 2022). As we will see, this context has not been without challenges for authorities. However, as will be discussed in this section, this context has also served as a particularly fertile ground for developing knowledge in the domain of crisis and risk communication.

Challenges faced by authorities during a crisis

During the pandemic, authorities had to develop and communicate messages focused on learning about the risks associated with contracting the virus and the adoption of preventive behaviours to respond to it (WHO et al., 2020). Although ‘the rise of mega-crises in recent years has increased both the sense of urgency felt during risk and crisis events and the complexity of successfully communicating instructions during these events’ (Helsloot et al., 2012, as cited in Sellnow-Richmond et al., 2018, p. 136), policy makers and public health

authorities have taken swift action, albeit sometimes hastily and reactively, to develop communication strategies to inform and empower their citizens. As communication and information sharing are key to responding appropriately to global public health crises today, these imperatives have faced and continue to face many significant problems and challenges, which have been repeatedly indicated by national and international political, media, and institutional actors.

The challenges of multiple voices during a crisis

Any health and social crisis will involve a variety of coordinated actors with different responsibilities and resources who share the common goal of protecting the population from the risks to which it is exposed. In terms of communication, this is no small feat, as there are many factors that can adversely affect people’s reception of messages and, consequently, their buy-in to the social and health information communicated to them (MacKay et al., 2022;

Kalocsányiová et al., 2022; Dornan, 2020).

For public authorities, the overabundance of traditional, digital, and social media communication channels, as well as the complex and changing media consumption habits of populations, turn out to be factors that complicate the rigorous, consistent delivery of messages and instructions to all target audiences. In addition, many studies have

found that public health messages connected to a health crisis have often been perceived by the citizens concerned as overly complicated, inconsistent, or even contradictory (Berry et al., 2007; Fogarty et al., 2011; Gwinner, 2012).

Moreover, this multiplicity of voices is accompanied by discourses of disinformation and misinformation, sometimes from people with hidden agendas. We will discuss this further below.

Strategic functions of the traditional media: a double-edged sword

Traditional media play a considerable role in the public's cognitive and emotional processing of measures put in place by political authorities to mitigate the impacts of a crisis (Lacroix & Carignan, 2020b). Indeed, institutionalised processes of agenda setting¹ and news framing² contribute to the phenomenon of amplifying or mitigating the risks perceived by the population (Rossman et al., 2018; Reintjes et al., 2016). For example, when traditional media promote recommended social and health measures, this can significantly motivate populations to adopt them (Jiang et al., 2021; Lacroix & Carignan, 2020b). According to the Centers for Disease Control and Prevention (CDC) (2019):

Effective communication during a crisis is not an attempt at mass mental therapy, nor

is it a magic potion that solves all problems. Nonetheless, to reduce the psychological impact of a crisis, the public should feel empowered to take actions that will reduce their risk of harm. (p. 3)

While the work of traditional media certainly has a considerable effect on the potential achievement of this goal, the associated prerogatives and responsibilities can be double-edged, since it has been shown that the use of news dramatisation processes can magnify the perceived risks connected to a crisis in the minds of news consumers. This creates a context of information reception that can cause anxiety and stress, which can be detrimental to the cognitive skills of audiences, i.e., skills crucial to informed decision making in a crisis (Coombs, 2020).

The preponderant place of social media in the dissemination of information, misinformation, disinformation, and fake news

Due to their growing popularity among the general population and their instantaneity, social media influence public perceptions and decisions in times of crisis (London Jr. & Matthews, 2022; Malecki et al., 2021). New consumers' psychosocial and behavioural responses to what they perceive as significant threats and risks are significantly shaped by the rapid flow of content delivered via these communication channels (Pappas et al., 2009). However, while these platforms facilitate sustained consumption of a host of content types on COVID-19 and risk mitigation measures,

they also simplify the creation, transmission, and alarming consumption of inaccurate information and misinformation of all kinds, from conspiracy theories and misleading social and health statements and instructions to false and propagandistic opinions, attitudes, and perceptions that can breed discontent and hatred toward the authorities (Carignan et al., 2023; De Coninck et al., 2021; Généreux et al., 2021b.). Malecki et al. (2021) further argue that in times of crisis, the obligation for consumers to have to constantly weigh true versus false

information creates tension that can have harmful fallout:

Social media can create an 'echo chamber' of media attention, with individuals sharing messages and news with like-minded followers. Some consumers of social media will work to sort through the different information; however, this process increases the chances of encountering conflicting news and messages, and additional potential of finding material aiming to discredit reliable experts and news sources. Contradicting information can again increase a lack of understanding and reduce individuals' perceptions of their agency and control regarding risk and mitigation. (p. 4)

During a health and social crisis of this magnitude, consuming malicious, misleading, or contradictory information increases the individual's social vulnerability and, consequently, may encourage the adoption of ill-advised health behaviours that can be harmful to the health of the individual and the people close to them (Hansson et al., 2021; Barua et al., 2020). For example, in Canada, the societal, community, and individual consequences of misinformation about COVID-19 are estimated to have cost at least CAD 300 million (Expert Panel on the Socioeconomic Impacts of Science and Health Misinformation, 2023). As such, stakeholders in pandemic management benefit from leveraging social media to quickly, massively, and effectively reach relevant audiences with their messages (Coombs, 2020; Barua et al., 2020) while positioning themselves as highly credible sources and figures in the intellectual struggle against hate speech, conspiracy theories, and fake news related to the crisis and its management.

The need for a dialogue-based approach rooted in caring and pragmatism

There are numerous potential societal risks associated with this mass disinformation in a pandemic context, including lower trust in news and government institutions, non-compliance with health measures and increased spread of the virus, deterioration in the social climate and social unrest, online radicalisation and recruitment for extremist groups, violent acts (Kim & Tandoc Jr., 2022; Agle et al., 2021; Barua et al., 2020). In this context, political leaders, public health actors, and news professionals benefit from advocating a dialogue-based approach characterised by active listening and understanding. The participatory nature of social media is conducive to such daily responses, which is why the research team has taken an interest in the way public health authorities communicate on these platforms and dialogue with their audiences.

The ability to discern the respective needs and risk conceptions of different

audiences is imperative for implementing effective crisis-communication messages. A purely explanatory and factual approach may fail to promote social acceptability in the medium to long terms (Hornmoen & McInnes, 2018; Waymer & Heath, 2007), even if it still appears to be perceived as effective in certain circumstances. For example, crisis managers entertain perceptions based on the myth (unsubstantiated by academic research) that, in a situation of uncertainty, communicating openly with audiences by sharing honest, accurate information can induce panic in the population (Seeger & Sellnow, 2019).

Conversely, focusing on strengthening collective empowerment thanks to a carefully planned dialogue-based approach generally results in strong public trust in the actions that are proposed (MacKay et al., 2022; Khan et al., 2019; Hornmoen & McInnes, 2018). These ingredients are essential to mitigate

the impacts of any health and social crisis, but also (and especially in 2022) to counter the dangers of misinformation and a profusion of information of varying quality—two disturbing

phenomena that can undermine public adherence to responses to the crisis, and even their own health.

State of knowledge on pandemic communication

To reiterate the objectives of this research, our aim is to better understand the discourses surrounding the pandemic that have been made available to populations through traditional media and the Facebook pages of health authorities, as well as to understand the various profiles of the users of these social media platforms. Notably, very similar research was conducted during the pandemic by the team producing this report (Lacroix & Carignan, 2020a, 2020b; Généreux et al.,

2021a; Carignan et al., 2022; Champagne-Poirier et al., 2022; Carignan et al., 2023; Champagne-Poirier et al., 2023). The following section provides an overview of the findings of this previous work and explains how it led to the development of methodological protocols. The key learnings and findings of these studies significantly inspired the research protocols used in our study, which is why we present them in this section.³

Previous findings on print media coverage of COVID-19

To distil a better portrait of the journalistic coverage of the pandemic by the Canadian print media, the researchers wished to scrutinise the journalistic texts produced during the first months of the pandemic. They evaluated four aspects of these texts, which are discussed in the subsequent paragraphs: the text authors, the featured actors, the main topics addressed, and the discursive strategies used in the texts. To this end, nearly 16,000 texts were analysed over three publication periods, each three months long: between January 27 and April 27, 2020; between June 27 and September 27, 2020; and between November 27, 2020, and February 27, 2021 (inclusive for all these dates). A mixed methods approach was also chosen: ‘The qualitative analysis created the architecture to guide the item coding and the quantitative analysis. [...] This allows us to assess the extent to which the characteristics qualitatively identified are quantitatively present in the newspaper coverage.’ (Champagne-Poirier et al., 2022, R52)

Text authors. This approach uncovered several findings regarding the Canadian print media that subsequently informed the methodological approach used in this report. First, regarding the authors of the texts, news journalists contributed the most to writing the texts in the corpus, having written 52.5% to 59.9% of the texts depending on the periods under study. The second most common source was news agencies, which authored 30.2% of the texts in the first period that was analysed—a figure that dropped dramatically over the course of the pandemic to 14.5% of the selected texts in the last period.

The prominence of news agencies at the very beginning of the crisis can be explained by the fact that media authorities, faced with the sudden and complex communication context produced by the pandemic, relied on the expertise of these agencies to provide readers with uniform, objective, and ethically sound information, and lacked the staff

numbers to accomplish this task alone in the time required, especially at the beginning of the pandemic when journalists had to deal with an overabundance of information (Lacroix & Carignan, 2020a, 2020b). Importantly, the ratio of news texts to opinion pieces can be seen to have changed over time. The share of daily-newspaper opinion journalists and non-news professionals in the coverage of the pandemic rose from 11.4% to 15% and from 6.2% to 10.6%, respectively. This observation is necessarily concurrent with a (slight) decline in the presence of texts written by individuals responsible for informing readers in a neutral manner, in favour of texts putting forward the opinions of the authors and their positions on current circumstances and events. Thus, some distancing can be seen on the part of the media, which acted less as agents of the public health officials.

Actors. Second, regarding the actors highlighted in the selected press texts, we saw that 18 types of actors were involved in the coverage of the social and health crisis⁴. These have been grouped into four categories: political actors, health actors, social actors, and actors affected by the pandemic. While some of the data are highly correlated with Canadian accounts of the pandemic, there are some findings that are potentially generalisable to international media outlets. Keeping in mind that the deliberate choice to feature these actors is a concrete reflection of the facets of the pandemic that Canadian journalists paid special attention to, the players most frequently mentioned in Canadian news coverage of COVID-19, in order of importance, were, in general as follows:

- Economic actors (31.2% to 55.0%);
- People socially affected by the crisis (28.4% to 43.4%);
- People physically affected by the crisis (21.4% to 35.5%);
- The media (28.8% to 34.0%); and
- Health experts (10.4% to 18.3%).

Economic actors show a strong presence in the texts that make up the journalistic coverage of the pandemic; they include companies,

the business community, the Bank of Canada, and real estate associations, to name just a few. This subcategory also increased significantly over the three periods, from 31.2% in the first period to 55.6% in the last. One reason for this may be that, over time, economic issues such as business closures and the subsequent reopening and economic recovery overshadowed health issues, which were more of a priority during the early months of the pandemic. This is a trend that we observed in the study.

Furthermore, variations over time in the presence of socially affected individuals and physically affected individuals highlight a notable dip in their inclusion in media coverage during the second period that was analysed. More specifically, the former subcategory was present in 43.2% of the texts in the first period, 28.4% in the second, and 43.4% in the third. The same is true for the latter subcategory, which was mentioned in 35.3% of texts in the first period, 21.4% in the second, and 35.5% in the third. These minima during the second coverage period, which can also be observed on a smaller scale with front-line workers (e.g., health care workers, social workers, emergency responders) as well as populations vulnerable to the virus (e.g., older adults, immunosuppressed individuals, homeless people), may be explained by a resurgence of COVID-19 cases during this period, which called for less coverage of these subcategories of actors, in the authors' view.

However, a very important observation can be made about a duality between socially affected people and physically affected people: proportionally, socially affected individuals were on average 24.8% more present in the coverage than physically affected individuals (38.3% vs. 30.7%). Although the primary impact of contracting COVID-19 is on physical health, this finding suggests that 'when the population is concerned [with a health crisis], media coverage focuses more on the consequences of the pandemic (as a process requiring a social response)' (Champagne-Poirier et al., 2022, R58, translated freely) and not on the specific medical consequences of this virus and its impacts on vulnerable communities. This trend can be explained in

part by journalists' wish to report news that sparks reader interest thanks to the proximity between the stories and information they read, on the one hand, and their own experiences, on the other. Indeed, the more readers feel concerned by what they consume, the more they will be inclined to encourage the media and thus contribute to their financial prosperity. This observation is corroborated in the following pages.

The media were mentioned in nearly one in three texts (28.8% to 34.0% of the selected texts, depending on the time period). These statistics, in conjunction with the fact that the presence of the media steadily increased over time, can potentially be explained by the authors' propensity to make the media's role within the crisis, as well as the media's impacts on their work and that of their colleagues, more explicit in their texts (e.g., calculating the number of deaths).

As for the actors working in the health sector, it is interesting to note that, overall, the four subcategories of these actors (i.e., the heads of various public health agencies or teams, the federal and provincial ministers of health, health experts, and the WHO) figured prominently at the beginning of the crisis, a trend that gradually diminished over time. These variations reflect the importance, in the eyes of the journalists, of focusing on the transmission of key and objective social and health information in the first period, in a context where COVID-19, its symptoms, and risk mitigation measures were generally less well known and internalised by the population.

In addition, although neither public health agency directors/teams nor health experts were previously considered public figures, news coverage of the pandemic revealed that these subcategories were more present in the media space than, for example, groups that used to hold public roles, such as health ministers. Indeed, these actors were present in 9.6% to 14.1% of the texts (depending on the period), compared to 4.4% for health ministers and 3.2% for the WHO.

Finally, the near absence of pandemic conspiracy groups, such as the QAnon movement and the Citoyens au pouvoir group, is an observation worth pointing out. Although mentions of these actors in the selected texts almost doubled between the first and third periods, their presence remained below 2%. Despite the impression that conspiracy groups occupy a prominent place in the public space, this perception can be explained by the space they occupy in the digital and social media universe.

Main topics addressed. Third, the main topics addressed through the texts show strong similarity from one period to another. The proportion of texts with the pandemic as their main theme is similar between the three periods (between 68.1% and 71.1%). In addition, the analysis of Canadian newspaper coverage of the pandemic reveals the presence of 40 themes, but among these, some were more strongly emphasised by the authors of the sampled texts. Specifically, the following are the three salient themes by analysis period:

- **Period 1:** COVID-19 cases and the vaccine race (26.0%)
 - The economic downturn (17.0%)
 - The halt of the sports world (13.3%)
- **Period 2:** COVID-19 cases and the vaccine race (15.5%)
 - The resumption of sports (12.4%)
 - Economic recovery or related planning (9.4%)
- **Period 3:** COVID-19 cases and the vaccine race (14.4%)
 - The vaccination campaign (10.6%)
 - The resumption of sports (8.0%)

Although the main topics covered in the texts within this media coverage are similar across all study periods, these results reflect the change over time in the order of frequency of the topics, as well as the prominence of the different main topics within their respective periods. The figures show that the main themes are diluted by new subjects, depending on the analysis period, their defining events, and their particular considerations.

Discursive strategies. Fourth, the discursive strategies⁵ used by the text authors during the three analysis periods were identified through the texts and divided into four sub-categories, namely the use of quotations, the types of arguments used, communicative intentions, and discursive procedures, also called cognitive shortcuts (Champagne-Poirier et al., 2021).

As for the communicative intentions featuring in the texts analysed, the intention to inform (between 65.5% and 68.2%) and to present testimony (between 9.3% and 12.5%) are, all periods of media coverage combined, the two categories of communicative intentions most used, given their alignment with the ideals upheld by news journalism. However, roughly 20% of the texts in the corpus had one of the other six categories as their primary intent (in addition to the two categories mentioned above, these include the following intentions that were studied: to raise awareness, appeal to, and advise; to reassure; to condemn or criticise; to speculate; to downplay; and to instil fear or dread), and their presence can be explained in part by the context of the pandemic and its evolution over time. For example, the first months of the pandemic were marked by journalists' desire to reassure their readers amid the uncertainty (3.1%) and to speculate on explanations for phenomena that had not been officially documented by the authorities (3.1%). As more information became available, these communicative intentions decreased in favour of texts seeking to raise awareness or give advice, which increased over time (8.9% to 10.6% between period 1 and period 3) to urge readers to take action to respond to the pandemic.

In addition, the qualitative analyses showed that different discursive processes can

be used by authors, especially when they shift away from the intention to inform. This phenomenon reflects the importance of journalists using cognitive shortcuts to help readers make sense of the ideas or complex situations that are discussed, and to encourage information retention by capturing readers' attention. Given that these techniques are aimed at the 'oralisation' of journalistic discourse (Watine, 2006), the discursive processes can be considered as a lens through which news consumers must decode the information or opinions that are communicated to them.

The results also indicated a decrease over time in the use of personification (3.5% to 0.9%), analogy (13.8% to 4.9%), and comparison (6.9% to 3.0%), which may be related to the wane in the 'novelty' of the crisis. Indeed, known references were offered to readers at the very beginning of the crisis to facilitate their understanding of the virus, and also marked the collective imagination surrounding the crisis as well as its narrative in the medium and long terms.

Generally speaking, the analyses show that 'the longevity of the COVID-19 pandemic seems to have favoured a shift in texts toward opinion, emotion, oralisation and awareness' (Champagne-Poirier et al., 2022, R52, translated freely). Indeed, although from an ethics standpoint, any journalistic coverage must be irreproachably neutral and conveyed in an informative tone, today's practices have become heterogeneous. Media firms and their journalists, who are situated in a precarious socio-economic context, have had to reorient the content and editorial process of the texts associated with COVID-19 to attract more readers and develop their loyalty to keep them consuming pandemic news over the medium and long terms.

Journalistic coverage in a crisis-communication context

Given the important role of the media in risk and crisis communication, members of our team analysed the media coverage in the early months of the pandemic using the IDEA model, which is useful for evaluating the effectiveness of mainstream messages about the risks associated with a crisis. IDEA is an acronym for internalisation, distribution, explanation, and action. Figure 1 below shows the model's components.

Specifically, in the chapter *The COVID-19 pandemic in Canadian newspapers: an analysis of the journalistic articles as risk and crisis messages* (Champagne-Poirier et al., 2023), the research team examined texts published in Canada between January 27 and April 27, 2020, in relation to the four components of the IDEA model. The model was devised by American risk and crisis communication experts Timothy and Deborah Sellnow:

This model proposes to evaluate risk and crisis messaging on the basis that they should contribute to 'helping message recipients internalize the potential impact of the risk or crisis event, identifying

appropriate channels and strategies for distributing the risk or crisis event messages, offering a brief and intelligible explanation of the nature of the risk or crisis, and providing specific self-protection action steps for people to take' (Sellnow et al., 2017, p. 552).

Having broadly discussed the journalistic coverage of the first period of analysis above (see Section 1.2.1), we now turn to what these analyses tell us about the role that the Canadian print media may have played in communicating the risks associated with the COVID-19 crisis, specifically regarding the internalisation, distribution, and explanation components of the IDEA model.

Internalisation. First, an observation related to the internalisation component emerges when examining the presence of the actors featured in the journalistic coverage of COVID19. This observation is that the populations most vulnerable to contracting the virus and suffering significant and/or permanent physical harm, such as older adults and those with chronic illnesses, cancer, respiratory

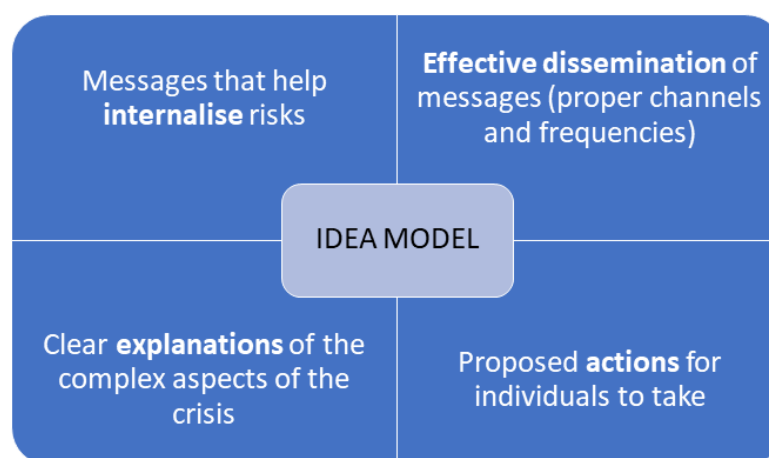


FIGURE 1. The IDEA risk communication model

disease, or diabetes, to name a few, were given much less prominence in the initial media coverage. This category of actors is found in less than 10% of the texts from the first period, far behind economic actors and cultural and sports personalities.

In this context, even if journalists explicitly indicated that this health and social crisis was of direct concern to readers, it may have been more difficult for news consumers to fully internalise the potential impacts of the virus in their daily lives and to take the necessary protective measures to defend vulnerable populations from the disease if the latter were in fact scarcely covered by journalists. In this regard, it is worth noting the context in which journalists worked during the crisis, and more specifically their limited access to information. In Quebec, for example, it was almost impossible to enter long-term care centres and hospitals, which hindered contact with actors and prevented the dissemination of key images for public awareness (Lacroix & Carignan, 2020a, 2020b).

Distribution. Moreover, the high density of texts directly or indirectly surrounding COVID-19 raises questions about the distribution component of the theoretical model. Although legitimised by the unprecedented and spectacular nature of the crisis, this dense media coverage—which can be described as a media eclipse (more than 40,000 texts in the space of three months)—may also have been a double-edged sword. Indeed, the media eclipse may have meant greater exposure to risk and crisis communication messages, but overexposure can also lead to potential desensitisation to what is being broadcast, or even a sense of overwhelm leading to distancing or desensitisation with respect to the essential content that is put forward (Lalancette & Lamy, 2020).

Explanation. Regarding the explanation component, deviations from the journalistic norm of neutrality may have had an impact on adherence to the proposed messages within a crisis context. Indeed, the discursive strategies identified through the journalistic texts likely facilitated readers' understanding of the virus and positively impacted their ability to retain the information in the consulted texts. Knowing that almost a quarter of the texts analysed (23.5%) had a communicative intention other than to inform, it is obvious that journalists distanced themselves from the professional ideals to which they were committed: this 'indicates a wish on the part of journalists to go beyond their duty to inform and try to influence readers' response' (Champagne-Poirier et al., 2023, p. 155). On this subject, Sellnow and colleagues (2017) argue that any effective risk and crisis communication message, even if it departs from journalistic principles of neutrality, must be strategically constructed 'to include appeals to affective and cognitive learning as the means to achieve desired behavioural learning outcomes' (p. 555). To bring about effective decision making in the population, media messages in the context of a social and health crisis should not always adopt a neutral and objective stance.

While these two studies looked at communication around COVID-19 from the perspective of strategic crisis communication through traditional media, other studies to which authors of this report contributed more closely examined the impacts of information during a pandemic.

Key psychosocial factors for improving communication strategies in a crisis

From the very beginning, the pandemic ushered in social and psychological effects around the world. The evolution of anxiety and depression throughout the pandemic was researched in an article by Généreux and colleagues (2021a), which sought to identify the adverse impacts of COVID-19 on the mental health of individuals in adult populations across different countries and continents, as well as the individual and national factors that play a positive or negative role in individuals' psychological response and actions during a social and health crisis. Beyond the pandemic and the social and health measures introduced in different countries, pandemic-related communication has proven to be an influential factor in the response of individuals.

Along these lines, some of the co-investigators in this report contributed to an interdisciplinary and international investigation of the psychosocial impacts of the COVID19 pandemic in approximately 9,000 adults from eight countries across four continents, as well as their associated risk and protective factors.⁶ The international survey was conducted from November 6 to 18, 2020, through an online questionnaire with 9,027 adults participating from the same countries/regions as the first-stage respondents in June of the same year (n=8,806), i.e., Canada, the

US, the UK, Switzerland, Belgium, Hong Kong, the Philippines, and New Zealand.

Regarding the evolution of anxiety and depression in the respondents, it is important to note that, irrespective of the epidemiological situation and/or sociocultural context of each participant, significant psychosocial impacts of the COVID-19 pandemic were felt across the globe, regardless of individual background. Moreover, levels of anxiety and depression slightly (but significantly) worsened after the beginning of the pandemic, especially in young adults.⁷

As for the detrimental factors contributing to mental health deterioration, the most prominent were a low sense of coherence, the presence of false beliefs related to the pandemic, low trust in authorities, and the deliberate choice to self-isolate or quarantine. Indeed, 'infodemic-related factors (including mistrust, confusion and false beliefs, overload of information, and the use of social media to become informed) were found in our study to play an equally important role, if not more important, than pandemic-related factors in explaining psychological health in times of pandemic' (Généreux et al., 2021a, p. 15). Some of these factors will be highlighted and elaborated on in the analysis by Carignan and colleagues in the next subsection.

Disinformation, conspiracy theories, and social media: developments that can compromise effective crisis management

Using the Canadian survey data presented above, Carignan and colleagues (2022) were able to assess the effects of sociodemographic traits, media consumption habits, and social attitudes on the level of public belief in fake news and conspiracy theories connected to the virus. In a key part of the online questionnaire, respondents were asked to score five

conspiracy theories and six fake news stories on a scale of 1 to 10. A score of 1 meant that the respondent did not believe the information shared with them, while a score of 10 expressed that the respondent firmly believed the information in question. The analysis found a strong association between belief in conspiracy theories and in fake news: 'Indeed, the higher a

respondent scores on the fake news index, the more likely they are to score high on the conspiracy index (and vice versa).’ (Carignan et al., 2023, p. 173)

Sociodemographic traits. The study highlights the sociodemographic characteristics that are most correlated with a belief in fake news and in conspiracy theories. While level of education and country of birth have little impact on sustained belief in conspiracy theories and fake news related to the pandemic, age stands out as the most salient characteristic. Indeed, the lower the age of the respondents, the higher their scores on the conspiracy bias index and the fake news index. According to the authors, these results suggest that the social media practices and uses of men, people under 35 years of age, and foreign-born Canadians deserve special attention to reduce ‘general belief in pandemic-related fake news and conspiracy theories’ (Carignan et al., 2023, p. 179). It should be noted, however, that psychological factors and trust/mistrust of the media seem to be more decisive than sociodemographic factors.

Media consumption habits. With respect to media consumption patterns, a respondent learning about the virus from public authority press conferences, television news, or newspapers is statistically more likely to have a lower-than-normal score on the conspiracy bias index, and vice versa. The same observation can be made for the fake news index. However, the more individuals use their interpersonal networks, social media, and the Internet to learn about the pandemic, the more

likely they are, statistically, to score higher than normal on the conspiracy index, and vice versa. The same observation also applies to the fake news index.

Social attitudes. Additionally, interesting findings on social attitudes were uncovered when assessing the effects of level of belief in pandemic-related fake news and conspiracy theories on how participants responded to the pandemic. The higher the conspiracy bias index score, the lower the adherence to social and health guidelines, and vice versa. The same dynamic can also be observed for the fake news index. A similar pattern was found regarding individuals’ tendency to refuse or hesitate to get a vaccine, but it is important to note that vaccines were not available to the public at the time of the survey.

It is also worth pointing out that lower trust in health experts, political authorities, and the media correlates with a higher score on the conspiracy index (and vice versa since these are two-way relationships). As for the fake news index, only one relationship is statistically significant: a higher score on this index is associated with less trust in health experts, and vice versa.

These observations oriented our analysis of strategic communication during the first year of the pandemic in three NATO allies. Our research has sought to better understand the information ecosystem in which information from public health authorities is presented, on the one hand within the traditional media and, on the other hand, on the Facebook pages of these authorities.

DATA COLLECTION AND ANALYSIS METHODS

Our research mandate with NATO had two components. The first was to examine communication in nine traditional media (three for each country). The second was to look at posts

on the Facebook pages of three public health agencies and their respective user comments. Below we detail the data-selection process and the criteria used to analyse the data.

Analysis of media data

The analysis of the newspaper data is based on collected texts that appeared in three media outlets for each of the countries studied (Belgium, the US, and the UK) between 1 January and 31 December 2020. The texts were discovered by searching using keywords associated with the pandemic, namely ‘covid’, ‘coronavirus’, and ‘pandémie’ (French), ‘pandemic’ (English), and ‘pandemie’ (Dutch), in the Eureka and ProQuest databases.⁸ Due to the large number of texts meeting these criteria, we then selected the texts to be analysed using a random sampling process (retaining one tenth of the texts). Table 1 shows the number of relevant texts available for each of the newspapers studied

as well as the number of texts selected for analysis at the end of the sampling process.

Following previous studies on media coverage of the pandemic, we quantitatively analysed the texts. The variables that guided our analysis were divided into three categories: identification variables, journalistic variables, and content variables (see Appendix 1 for the detailed grid).

The identification variables focused on characteristics specific to the context of the text’s dissemination, such as the newspaper and the month of publication. The journalistic variables helped identify author categories,

Country	Newspaper	Total number of texts meeting search criteria	Texts selected (random sampling process)	Total texts analysed by country
Belgium	<i>Le Soir</i>	7,396	740	2,393
	<i>Libre Belgique</i>	7,451	745	
	<i>Het Nieuwsblad</i>	9,089	908	
US	<i>The Wall Street Journal</i>	8,850	885	2,006
	<i>The New York Times</i>	8,449	845	
	<i>USA Today</i>	2,762	276	
UK	<i>Daily Mail</i>	8,951	895	1,533
	<i>Daily Mirror</i>	3,242	324	
	<i>Daily Express</i>	3,140	314	
Total		59,330	5,932	

TABLE 1. Corpus of newspapers and texts selected for analysis

communicative intentions (the main objective of the text), as well as the discursive procedures used. These procedures tinted authors' writing in their coverage of the COVID-19 pandemic and had varying effects on reader perceptions of the virus and what was portrayed in the news. Finally, the content variables contributed to highlighting tangible elements related to the content of the journalistic text. The aim of these variables is to identify whether the main theme of the text was the pandemic, as well as the main themes addressed in relation to the pandemic

and the actors mentioned. This portion of the study reveals what information was communicated to the population through the media filter.

The second portion of the study has two objectives: first, to document public health communication strategies targeting the population through social media, and, second, to better understand the population's uses of the comments as a communicative space.

Analysis of Facebook data

The second stage of our methodological process of data collection and analysis consisted of selecting, reviewing, and analysing Facebook posts on the social media accounts of the public health authorities in the three countries under study, as well as their user comments. All posts dealing with the coronavirus disease in 2019, published between 1 January 1 and 31 December 2020, inclusive, on the *SPF Santé Publique* page (Belgium), the *Centers for Disease Control and Prevention* page (USA), and the *Department of Health and Social Care* (DHSC) page (UK), were counted, as were their associated comments.

First, all pandemic-related posts from SPF and CDC were analysed. However, given

the large number of posts for DHSC, a selection of publications was chosen for analysis. Next, all comments posted online in response to SPF publications were analysed. However, due to the large number of comments for the CDC and DHSC pages, a random selection process was used for the posts, to arrive at a comment count approaching 100,000. Table 2 shows the number of posts collected and analysed for each of the pages studied, as well as the total number of comments on each and the number of comments selected for analysis, if applicable.

During the quantitative analysis of Facebook posts, each post was evaluated in terms of variables related to its content and

Facebook page	Total number of posts	Number of posts analysed	Total number of comments	Number of comments analysed ⁹
<i>SPF Santé publique (Belgium)</i>	384	384	97,148	97,148
<i>Centers for Disease Control and Prevention (USA)</i>	946	946	1,033,821	103,584
<i>Department of Health and Social Care (UK)</i>	1,627	1,225	637,486	108,766
Total	2,957	2,555	1,768,455	309,498

TABLE 2. Corpus of Facebook posts and comments selected for analysis

variables related to its reach (see Appendix 2 for the detailed grid).

The content variables consisted of the type of posts favoured, the primary and secondary tone (if any) employed, and the main topic addressed. The reach variables referred to user interaction metrics, such as the number of comments or views.

Following the quantitative analysis of the Facebook posts, a qualitative analysis of the comments on these posts was conducted to observe followers' uses of the public health

messages they received via social media. Having a clearer idea of their communicative intentions in this context, as well as the predominant character trait of the analysed interaction, were also two underlying goals of this analysis segment. To this end, two variables were used: (1) user intent, which identified the communicative purpose behind the comment (e.g., criticise or suggest); (2) the type of user, which aimed to identify the emotion conveyed by that user (e.g., angry, fatalistic, or supportive). The detailed grid is provided in Appendix 3.

JOURNALISTIC COVERAGE OF THE PANDEMIC

In this section, we divide our results for the press analysis by country. Specifically, for each country, we first present the statistics for each variable analysed (see Appendix 1) to paint an overall picture of the media coverage for each country. Then we analyse the evolution of the pandemic during the year to

determine whether events or periods led to a particular coverage of the pandemic at certain times. Finally, we pool and compare the results between the three countries to identify general trends and to highlight the specificities of each country, according to its context.

Media coverage of the pandemic in Belgium

The Belgian newspapers were the ones for which the greatest number of texts were collected. This substantial coverage was present both in the two targeted French-language newspapers (*Le Soir* and *Libre Belgique*) and

in the Dutch newspaper (*Het Nieuwsblad*). The first section below presents the media coverage of these newspapers during the year, while the second analyses the data according to the month in which the texts were published.

Portrait of the first year of media coverage in Belgium

Timing of the analysed texts' publication

Earlier in this report (see Section *Analysis of media data*), we discussed the number of texts collected and selected for analysis for each newspaper. To provide a more complete picture, we also tracked the number of texts published each month during the first year of the pandemic (2020). The percentage of texts devoted to the pandemic that were analysed, by month of publication, is presented in Table 3.

The proportion of texts devoted to the pandemic varied over time. It was at its lowest in January and February and peaked in March and April. The proportion decreased over the following months. Moreover, we can observe another rise in the number of publications per month in the fall, especially in October. From this dynamic, we can see that the density of news coverage followed the first two waves of cases.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.7%	2.4%	15.1%	13.6%	9.3%	4.6%	7.9%	7.8%	8.4%	11.5%	9.6%	9.2%

TABLE 3. Monthly distribution of Belgian texts analysed (n=2,393)

Authors, journalistic intentions, and strategies used to refer to the pandemic

Our analyses also found that news reporters played a key role in the coverage of the pandemic (see Figure 2).

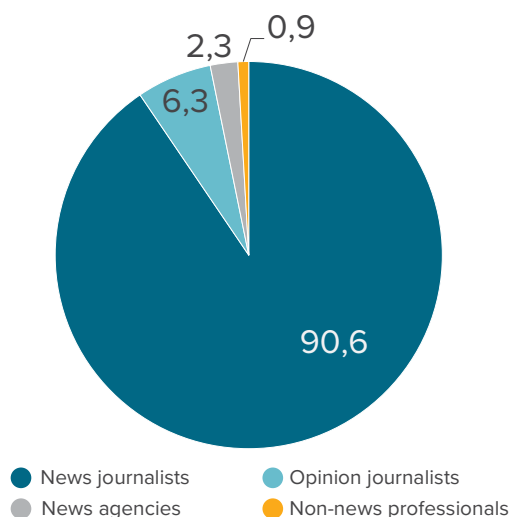


FIGURE 2. Belgian text distribution by type of author (n=2,393)

Almost all of the texts analysed from Belgian newspapers were written by news professionals. In fact, fewer than 1% of the texts were written by authors other than professional journalists, i.e., citizens or people in the health care sector who were publishing an opinion letter, for example. News professionals writing in a news context made up the vast majority of authors, and people giving their opinion, for example in a column or

editorial, were associated with just over 5% of the corpus. Finally, less than 1% of texts were written by news agencies.

Considering the current standards of good journalistic practice (which aim for information, neutrality, and objectivity), we wondered what the main journalistic intention of the authors of these texts was. Table 4 shows the results of this analysis.

Our results show that the most common primary intention of the texts was to inform. In terms of frequency, this is followed by the intention to present testimony, and then by the intention to raise awareness or appeal to or advise populations. The intention to inform may, for example, be encountered in a text aiming to count the number of infected people in a hospital and their status: ‘In Dendermondse Sint-Blasius’s hospital, 62 patients are infected with corona. Eight of them are in the intensive care unit. Three deaths occurred at Sint-Blasius between Wednesday and Thursday morning. Five people with symptoms also remain at the hospital who are still waiting to see if their COVID-19 test is positive.’ (‘Drie coronapatiënte overladen’, 2020)^{10, 11}

The second most common intention was to present testimony. An example would be a text about an exchange student’s experience of being unable to leave China: ‘Ines

Main journalistic intention	% of texts
To inform	87.6
To present testimony	9.2
To raise awareness or appeal to or advise populations	1.2
To reassure	0.9
To condemn or criticise	0.7
To speculate	0.2
To instil fear or dread	0.1

TABLE 4. Belgian text distribution by main journalistic intention (n=2,393)

Scheldeman (22) was only supposed to take the plane back home tomorrow. “But I already flew back last weekend. I was especially afraid that our city was also going to experience a lockdown and that I would not be able to leave China.” (Ines Scheldeman: “Ik had meer schrik van de lockdown dan van het virus zelf”, 2020)¹²

Finally, in the analysed texts, the third most common intention was to raise awareness or appeal to or advise populations. This might consist in making an example of someone not following health measures and talking about the risks of spreading the virus: ‘[...] if he cares so little about COVID-19 that he disregards widely publicised precautionary advice and prophylactic measures, he does (potentially) put other men’s lives at risk—for example, by being a healthy carrier but a vector of the disease’ (Bourton, 2020).¹³

In terms of writing style, our analysis allowed us to determine in what proportions discursive strategies were used by the authors or cited individuals to refer to the pandemic or the virus. These data are important in that they provide insight into journalists’ propensity to lump together the pandemic with other systems of meaning.

The data show personification (10.2%) to be the most frequently used strategy, manifesting, among other things, in virus actions that are generally attributed to humans. The virus might be presented as having the power to cancel plans or as being able to make a decision: “‘The coronavirus will decide which direction we go,” he said.’ (‘Drukke pistewinter behoort tot de mogelijkheden’, 2020)¹⁴ The second most common discursive strategy was metaphor (4.4%). In the texts analysed, this appears, among other things, in analogies with combat or war situations. The virus might be described as a major enemy, for example: ‘We do feel that we are fighting a strong opponent’ (Lescrauwaet, 2020).¹⁵ Of the three strategies that were analysed, comparison was the least used (2.6% of the texts). It might be used by the authors to differentiate the severity of the COVID-19 pandemic situation from that of the seasonal flu: ‘But as soon as Belgium went into lockdown, we realised it was more than just a flu.’ (Dewagenaere, 2020)¹⁶

Place occupied by the pandemic, themes addressed, and actors highlighted

Regarding the content of the texts, we begin with the results pertaining to the actors mentioned in the analysed texts, in order of frequency (Table 5).

For the sake of brevity, we focus our explanations on the five most frequently mentioned actors. In this regard, the group most often mentioned in the Belgian data is economic actors. In particular, these actors take the form of business owners who demonstrate the difficulty encountered by independent businesses during lockdowns: “During the first lockdown, we saw white flags everywhere for the people in care and I have full respect for these people,” Soraya says. “But

this lockdown is a very black and heavy period for the self-employed. We are in mourning. That’s why I hung a black flag on my store. And I call on all self-employed people to do the same”.’ (Van Overstraeten, 2020)¹⁷

The second most mentioned group in the texts is individuals physically affected by COVID-19. Members of this group might be presented in a tally of the number of people who have died from the virus, sometimes by comparing with data from elsewhere in the world: ‘In China, where the outbreak began in late December, the virus has killed 2,791 people. In the rest of the world, 67 people died.’ (Agence France-Presse, 2020)¹⁸ Mentions of individuals

Actors	% of texts
Economic actors	22.8
Individuals physically affected by COVID-19	21.1
National politicians (excluding elected health officials)	20.9
Sports actors	14.8
Essential workers	14.6
Individuals socially affected by COVID-19	14.2
International politicians	13.6
Cultural actors	11.7
Vulnerable individuals or populations	9.7
Physical health experts	9.4
Educational actors	8.7
Media actors	7.6
Public health actors	3.8
Police forces	2.7
World Health Organization (WHO)	2.6
Elected health officials	2.0
Social science experts	1.8
Conspiracy groups or individuals	1.1
Army	0.5
NATO	0.3

TABLE 5. Belgian text distribution by mention of groups of actors (n=2,393)

physically affected by the virus are also found in texts tallying the number of people admitted to hospitals after showing symptoms of COVID-19.

The third most frequently mentioned group is national politicians. These actors are mentioned in various situations such as announcements concerning the introduction or lifting of health measures. At other times, these actors are mentioned when criticising decisions. In one excerpt, the author refers to Belgian citizens' opinion of their prime minister: 'We expected a huge breakthrough, the title of Prime Minister being important and the coronavirus crisis having brought her to prominence on all our screens and newspapers: Sophie Wilmès is the most popular personality in our Grand Barometer.' (Leurquin, 2020)¹⁹

The fourth most prominent actors mentioned are stakeholders in the sports community. Cancellations and postponements of sports matches due to athletes being infected with the virus are one of the subjects of the analysed texts in which these actors feature prominently: 'Tonight's home game against

Kangaroos Mechelen has been postponed to a date yet to be determined due to three positive corona cases at Ostend. After Haris Bratanovic and Servaas Buysschaert, Pierre-Antoine Gillet has now also been infected.' ('BASKETBAL FILOU OOSTENDE De thuiswedstrijd van', 2020)²⁰

Essential workers make up the fifth most frequent category. When it comes to daycare closures, essential workers are regularly mentioned as they cannot stay home to watch their own children. In addition, because they are more frequently exposed to the virus and are at greater risk of infection, they are also named in texts that discuss which groups should be prioritised for distribution of vaccines or drugs against the virus: 'We are considering testing it in the current phase on our nurses and doctors because they do still have a relative risk of becoming infected.' (Vancaeneghem, 2020)²¹

Next, we examined the place occupied by the pandemic itself and the COVID-19 disease in the texts. From this analysis, we can see that the primary purpose of almost

Main theme related to the pandemic	% of texts
The pandemic and its impact on public leisure	17.3
The virus and its physical consequences	15.8
The pandemic's economic consequences	15.5
Measures to curb the transmission of the virus	14.0
The pandemic and the adaptation of daily life	7.0
The virus and its consequences on the components of our social systems	6.8
Political, diplomatic, and governance considerations related to the pandemic	6.3
The virus and science	4.8
The pandemic and its impact on people's psychological well-being	4.8
The lifting of measures to curb the virus	3.6
The pandemic and social polarisation	3.1
Not applicable (N/A)	1.1

TABLE 6. Belgian distribution of main themes discussed in relation to the pandemic (n=2,393)

three-quarters of the texts is coping with the pandemic (73.2%). Thus, only 26.8% of the analysed texts deal with the pandemic in a secondary manner. For all texts, we identified the main pandemic-related theme that was addressed. They are presented in order of importance in Table 6.

As with our explanations concerning the place of the actors in the texts, we focus here on the five most discussed themes. The impact of the pandemic on public leisure is the most prominent theme in Belgian newspaper texts. The theme manifests in various ways, including descriptions of pandemic impacts on the world of sports. For example, one text in our corpus was about a professional soccer player who had to self-isolate for a few days after testing positive for the virus: 'Hübers, who was reportedly infected at an event in Hildesheim on Saturday, is under quarantine at his home and has had no contact with his teammates since then' (United Kingdom News Agency, 2020b).²²

The second most frequently discussed theme is the virus and its physical consequences. This theme appears, among other things, in texts listing the symptoms of infected people, or case counts, as in the following excerpt that gives the number of patients and employees infected with the virus in a seniors' residence: 'Na een algemene testing blijken 37 bewoners en personeelsleden van woonzorgcentrum Andante in Menen besmet met corona.' ('37 coronabesmettingen in woonzorgcentrum Andante', 2020)²³

The third most prominent theme is the pandemic's economic consequences. One of the topics associated with this theme is companies' critical situation and their risks of permanently shuttering if they do not receive financial support from the government: 'Of the 60,875 companies with headquarters in Antwerp City, one in six risk not surviving the economic consequences of the corona crisis without additional support.' ('Een op de zes Antwerpse bedrijven overleeft corona niet', 2020)²⁴

The fourth pandemic-related theme is measures to curb the transmission of the virus. This regularly shows up in announcements of new health measures, including those seeking to limit the spread of the virus by restricting contact between individuals from different households: 'Italian Prime Minister Giuseppe Conte on Monday night called on all Italians to "avoid travel" on national territory to contain the coronavirus epidemic, and ordered a "ban on gatherings".' ('Lits disponibles', 2020)²⁵

The fifth most prominent theme is the pandemic and the adaptation of daily life. Among other things, one of the topics mentioned in the texts is the redistribution of domestic tasks due to changing work schedules with the advent of the virus: "Normally, I organise my whole life around my children. In this case, it's [my husband] who organised his work around mine." Virginie Blocteur is a nurse at the CHR de Verviers. Previously on day shifts, she was assigned to the Covid unit' (Blogie, 2020).²⁶

Evolution of coverage in Belgium in the first year

Authors, journalistic intentions, and strategies used to refer to the pandemic

The primary journalistic intention of informing is the main theme for each month of the year 2020 in proportions ranging from 80.7% (February) to 95.5% (June) in the texts produced during the month. Although covered in smaller proportions, other journalistic intentions evolved during the first year of the pandemic, and we felt it important to paint a picture of these as well. Table 7 provides

an overview of the three other most common journalistic intentions each month, after the intention to inform.

As Table 7 illustrates, the intention most frequently found for each month, after informing, is presenting testimony. In January and June, no intentions other than to inform and present testimony can be found. The

		% of texts
Global rise of COVID-19	January	To present testimony (5.9)
		To present testimony (10.5)
	February	To reassure (5.3)
		To speculate AND instil fear/worry (1.8)
First wave of COVID-19	March	To present testimony (10.5)
		To raise awareness, appeal to, or advise (2.2)
	April	To condemn or criticise (1.1)
		To present testimony (11.7)
	May	To reassure (1.5)
		To raise awareness, appeal to, or advise (1.5)
Period of calm and easing of social and health measures	June	To present testimony (14.4)
		To reassure (2.7)
	July	To present testimony (4.5)
		To present testimony (4.8)
	August	To raise awareness, appeal to, or advise (1.1)
		To condemn or criticise (1.1)
Second wave of COVID-19	September	To present testimony (5.4)
		To raise awareness, appeal to, or advise (1.1)
	October	To condemn or criticise (1.1)
		To present testimony (9.1)
	November	To raise awareness, appeal to, or advise (2.2)
		To condemn or criticise (1.1)
	December	To present testimony (12.2)
		To raise awareness, appeal to, or advise (0.4)
		To condemn or criticise AND reassure (0.4)
		To present testimony (7.7)
		To reassure (0.9)

TABLE 7. Belgian monthly distribution of journalistic intentions other than to inform in 2020 (%)

third leading intention varies during the other months of the year. The most frequent is to reassure. The intention to raise awareness, appeal to, or advise appears as the third main intention in the months of March, May, July, August, and October. Moreover, the intentions to downplay or dramatise are never among the most common intentions in any of the months.

Regarding the different discursive strategies used to refer to the virus or the management of the pandemic, over the year we can see a negative correlation in the use of personification (weak strength association [$r=-0.188$, $p<0.05$]) and a positive correlation in the use of comparison (weak strength association

[$r=0.066$, $p<0.05$]). Thus, while references to the virus as an entity with human characteristics tend to decrease over time, comparisons of the pandemic with other viruses or other stages of the pandemic tend to increase over time. We also observe a correlation between the use of personification and metaphor strategies (moderate strength of association [$r=0.333$, $p<0.05$]), as well as a positive correlation between the use of comparison and metaphor (weak strength of association [$r=0.155$, $p<0.05$]), which means that these discursive strategies tend to be used simultaneously in the texts.

Place occupied by the pandemic, themes addressed, and actors highlighted

Texts with the pandemic as their main theme were more numerous at the beginning of the year 2020 than at the end (weak strength of association [$r=0.217$, $p<0.05$]). The main themes addressed in relation to the pandemic in the texts also tend to vary. In Table 8, we illustrate the three main themes during each month.

We can see that the themes that come up most often from month to month are measures to slow the transmission of the virus, the virus and its physical consequences, the virus and its consequences on public leisure, and the pandemic's economic consequences. Some themes are addressed in greater proportions at certain times. This is the case, among others, for the theme of measures to slow the transmission of the virus, which is the most frequently discussed subject of the texts published in January, as well as for the theme of the virus and its physical consequences, which is the main theme of nearly a quarter of the texts published in January and February. It is also worth noting that the theme of the pandemic's economic consequences received more attention during the month of February than at any other time of the year. Finally, it is worth noting that the theme of the virus and science did not appear much throughout the year except in January and December.

As we have found in previous studies of pandemic media coverage, our analyses demonstrate that media coverage of the pandemic has highlighted different types of actors at different times during the pandemic (see Table 5). We have grouped the results of the different social groups discussed in the newspapers that were analysed into five categories:

- Political actors, which include national and international politicians;
- Health actors, including public health stakeholders, elected health officials, the WHO, and physical health experts;
- Social actors, i.e., the sports, cultural, economic, media, and educational communities, and social science experts;
- Actors 'created' by the pandemic, which include people physically or socially affected by COVID-19, people vulnerable to the virus, essential workers, as well as groups that promote conspiracy theories; and
- Law enforcement actors, i.e., NATO, police forces, and armed forces.

		% of texts
Global rise of COVID-19	January	Measures to slow the transmission of the virus (41.2)
		The virus and its physical consequences (23.5)
		The virus and science (23.5)
	February	The pandemic's economic consequences (29.8)
		The virus and its physical consequences (24.6)
		The pandemic and its impact on public leisure (14.0)
First wave of COVID-19	March	Measures to slow the transmission of the virus (18.0)
		The pandemic's economic consequences (13.3)
		The virus and its physical consequences (12.7)
	April	The pandemic's economic consequences (18.1)
		The virus and its physical consequences (16.9)
		The pandemic and its impact on public leisure AND measures to slow the transmission of the virus (11.3)
	May	Measures to slow the transmission of the virus (14.4)
		The virus and its physical consequences (14.4)
		The pandemic's economic consequences (14.4)
Period of calm and easing of social and health measures	June	The pandemic's economic consequences (18.0)
		The pandemic and its impact on public leisure (13.5)
		Measures to slow the transmission of the virus (11.7)
	July	Measures to slow the transmission of the virus (20.1)
		The pandemic's economic consequences (16.4)
		The virus and its physical consequences (14.3)
	August	The pandemic and its impact on public leisure (21.0)
		The pandemic's economic consequences (18.3)
		Measures to slow the transmission of the virus (14.5)
Second wave of COVID-19	September	The pandemic and its impact on public leisure (23.0)
		The virus and its physical consequences (17.5)
		The pandemic's economic consequences (14.5)
	October	The pandemic and its impact on public leisure (21.2)
		The virus and its physical consequences (21.2)
		Measures to slow the transmission of the virus (14.2)
	November	The pandemic and its impact on public leisure (17.9)
		The virus and its physical consequences (17.9)
		The pandemic's economic consequences (16.6)
December	The pandemic and its impact on public leisure (17.0)	
	The virus and its physical consequences (14.5)	
		The economic consequences of the pandemic AND the virus and science (14.1)

TABLE 8. Belgian monthly distribution of main themes in 2020 (%)

Below we present the frequency with which these different groups are depicted in newspapers from month to month during the first year of the pandemic.

Political actors include people in the national and international political spheres. These actors occupied an important place in Belgian newspapers throughout the year, but the proportion in which they are mentioned in the texts analysed varies over the year (see Figure 3).

Figure 3 illustrates, international politicians are more prominent in the news in January, February, and June. Given the low presence of this form of coronavirus disease in Belgium during the months of January and February, and the fact that it was not yet declared a pandemic, media texts drew on information from the countries more affected by the virus, namely China, and, eventually, Italy. After a decrease, a June increase can be explained by the slowdown in the spread of the disease and the reopening of the borders in Europe as well as free movement between all countries of the EU. Conversely, in general, when the presence of international political actors declines, national politicians are more featured in the media coverage of

COVID-19, a tendency that can be explained by national public authorities' wish to ensure stable updates, social and health instructions, and the implementation of risk mitigation measures.

Health care actors were necessarily mobilised because of the patient care required in the context of a pandemic. However, these actors were hardly mentioned in the Belgian newspapers, except in the month of January. Figure 4 presents the frequency with which the various health actors were identified in the texts analysed over the course of the year.

We can see that all health actors (and the WHO in particular) were mentioned more in January than in any other month of the year. This seems to confirm the idea that during a period of health uncertainty (which is especially acute at the beginning of a crisis), turning to health experts is a preferred practice of journalists. In addition, throughout the year, physical health experts (e.g., doctors, epidemiologists, health science professors) were the actors featured most often in the texts, especially during the months with the highest numbers of affected individuals in Belgium, i.e., between March and May, and between October and December (H., 2020;

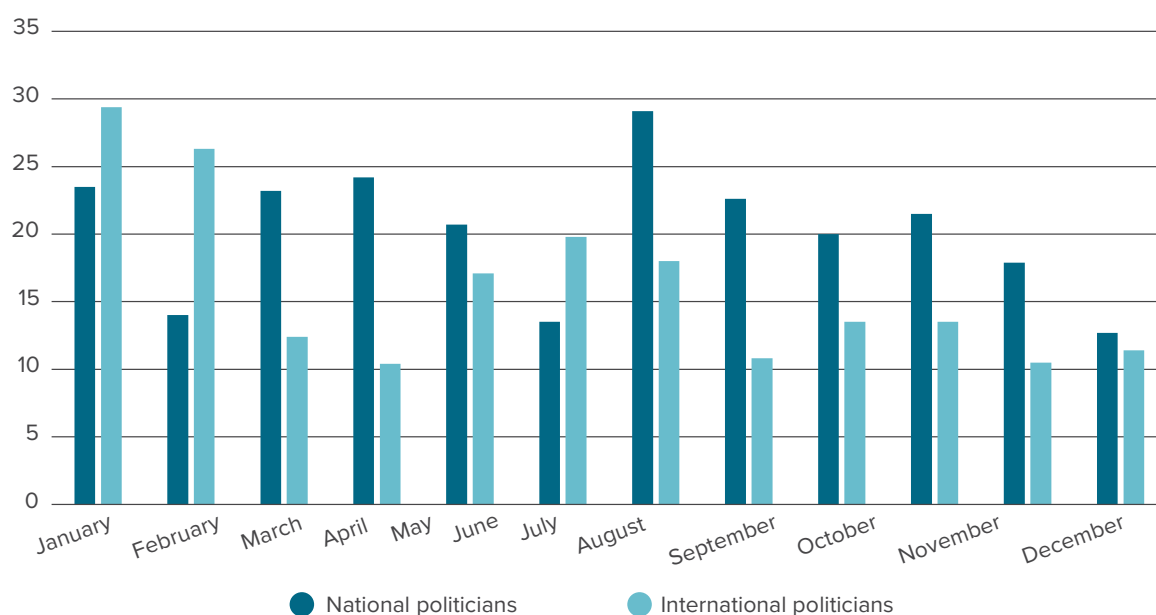


FIGURE 3. Belgian monthly distribution of political actors in 2020 (%)

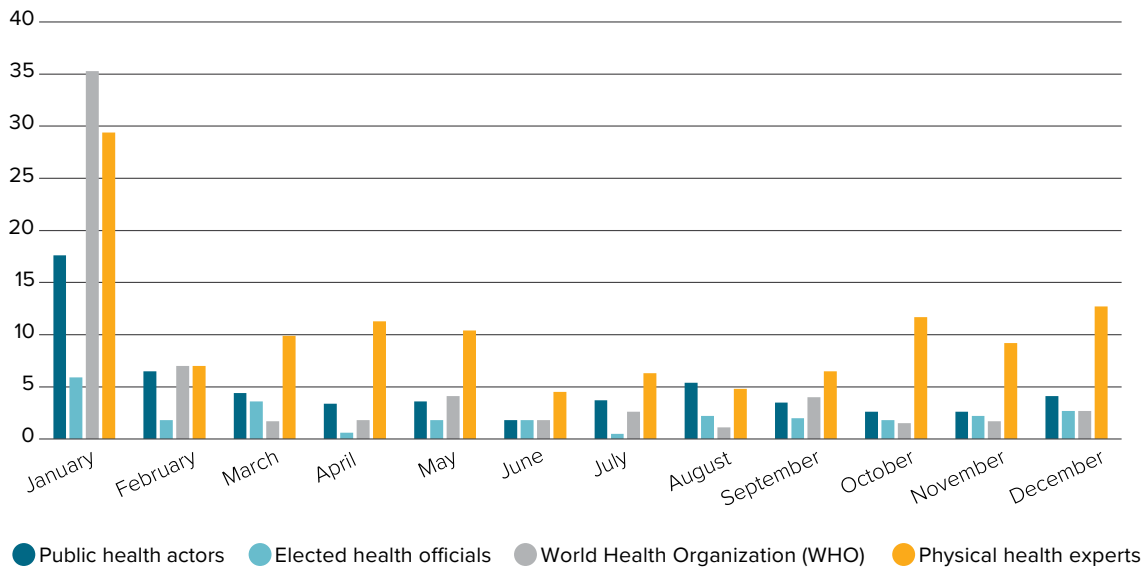


FIGURE 4. Belgian monthly distribution of health care actors in 2020 (%)

‘L’Europe met Noël en veille pour éviter la troisième vague’).

different social actors during the first year of the pandemic in Belgium.

The pandemic and its various associated measures have had an impact on a variety of social groups. While we illustrated earlier that the Belgian newspapers more extensively discussed the economic actors, it is interesting to see at which times of the year this group, as well as the other social groups, garnered more media coverage. Figure 5 illustrates the frequency with which newspapers dealt with

As Figure 5 shows, January is the month in which social actors were the least mentioned in Belgium. This result can be explained in large part by the fact that the virus was not yet very present in Belgium and that the first public social and health measures were announced in March. As mentioned earlier, economic actors are the most frequently highlighted actors in journalistic accounts, for all months of the year.

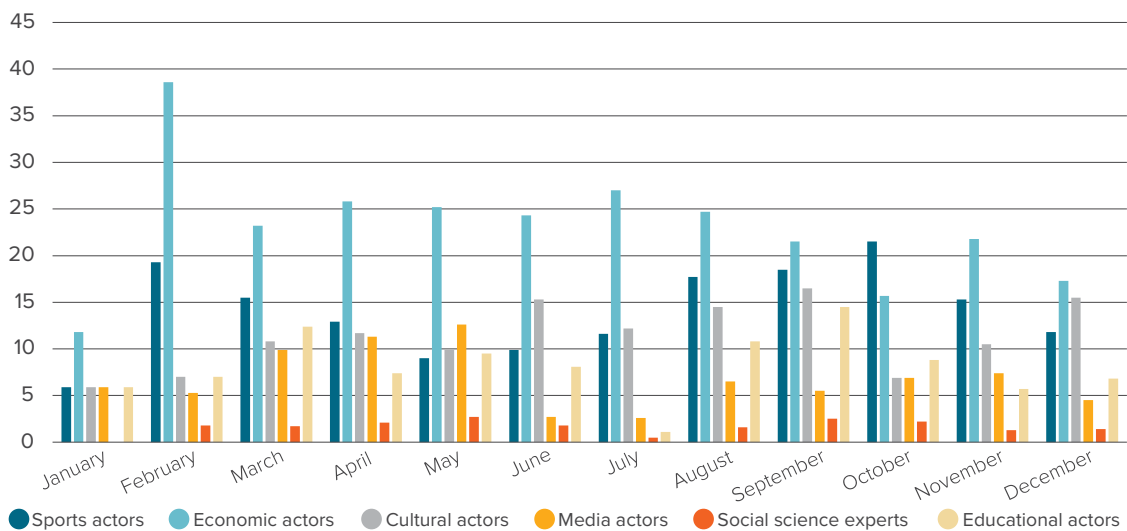


FIGURE 5. Belgian monthly distribution of social actors in 2020 (%)

Our analysis of the data over the year shows that they have the highest presence every month, except in October when sports actors are mentioned more.

The second and third most mentioned groups of social actors are respectively those from the world of sports and from the world of arts and culture. Indeed, apart from the fact that the sports world came to a halt at the beginning of the year, which justifies its media popularity during this period, these groups' prominence in the analysed media coverage fluctuates according to the level of abatement in the spread of the virus. For example, the summer of 2020 was marked by a significant slowdown in cases and, as a result, the resumption of tourism and sports activities. Moreover, an interesting fact to note here is the significant absence of social science experts, who always appear, for each month analysed, in fewer than 5% of the selected texts. As for the media, their presence is more marked during the months of March to May, a particularly trying period since they had to process a massive amount of information at a frantic pace.

Essential and frontline workers, populations considered vulnerable to the virus, groups promoting pandemic conspiracy theories, and

citizens socially or physically affected by the pandemic are five social groups whose very existence is inherent to the arrival of COVID19. As Figure 6 shows, the variation in their presence over time strongly hinges on the evolution of the pandemic and the speed of its spread.

It is interesting to note that mentions of physically affected people are higher in January, when no cases had yet been recorded in Belgium. This might be explained by the interest shown in the evolution of the number of cases in China, where the epidemic was first recorded. Also worth pointing out are the categories of actors scarcely mentioned in the media coverage, namely conspiracy theory groups—almost absent from the media coverage—and populations vulnerable to the virus, a group for which a large proportion of social and health measures have been implemented, but the second least mentioned group in this category. Even if it might at first appear that conspiracy adherents occupy a preponderant place in the public space, they are never mentioned in more than 5% of the texts (monthly). This impression of ubiquity may hypothetically be linked to the real and important space they take up on social media. Moreover, populations considered vulnerable to the virus have a significantly lower presence than individuals affected

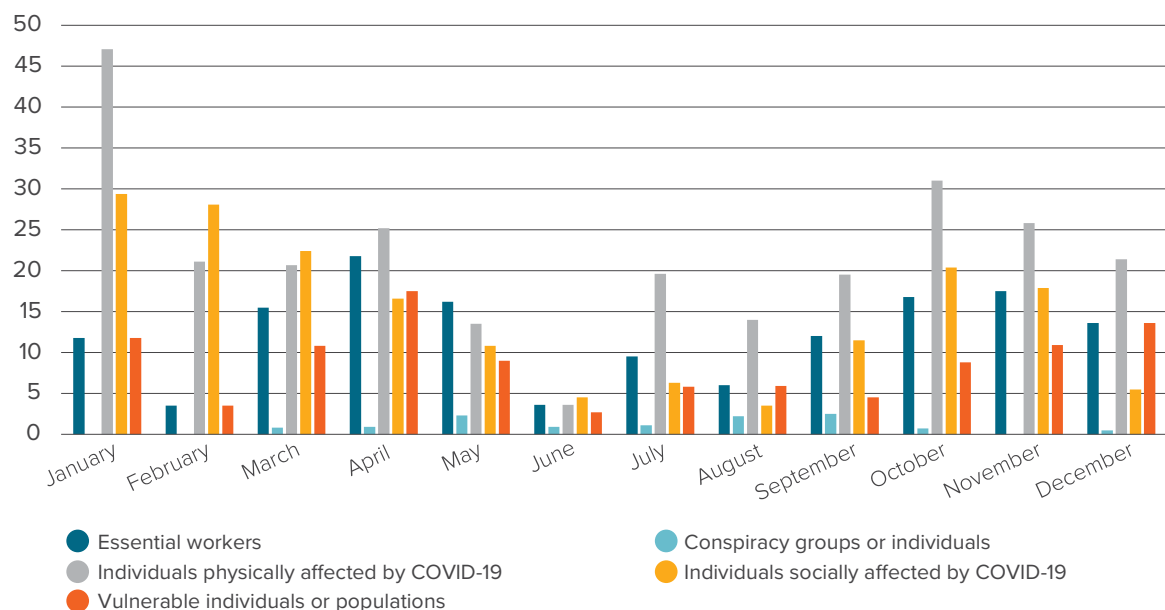


FIGURE 6. Belgian monthly distribution of actors 'created by the pandemic' in 2020 (%)

socially and physically by the pandemic, except during the months of April and December, i.e., periods of family gatherings characterised by greater efforts to raise awareness.

Law enforcement actors, who played a key role in helping the population in times of high infection, hospitalisation, and death rates, were very present in the media coverage during this social and health crisis. As Figure 7 shows, the times when they were most present in the corpus of texts analysed coincide with the implementation of new

mitigation measures to address increases in COVID-19 cases.

The introduction of strict lockdown measures and curfews, from mid-March to mid-May and from late October until the end of the year, was concurrent with a stronger presence of police forces, who enforced these rules throughout Belgium. The army was also called in a few times during the year, in particular to relieve hospitals and seniors residences, which were suffering from high rates of absenteeism due to illness.

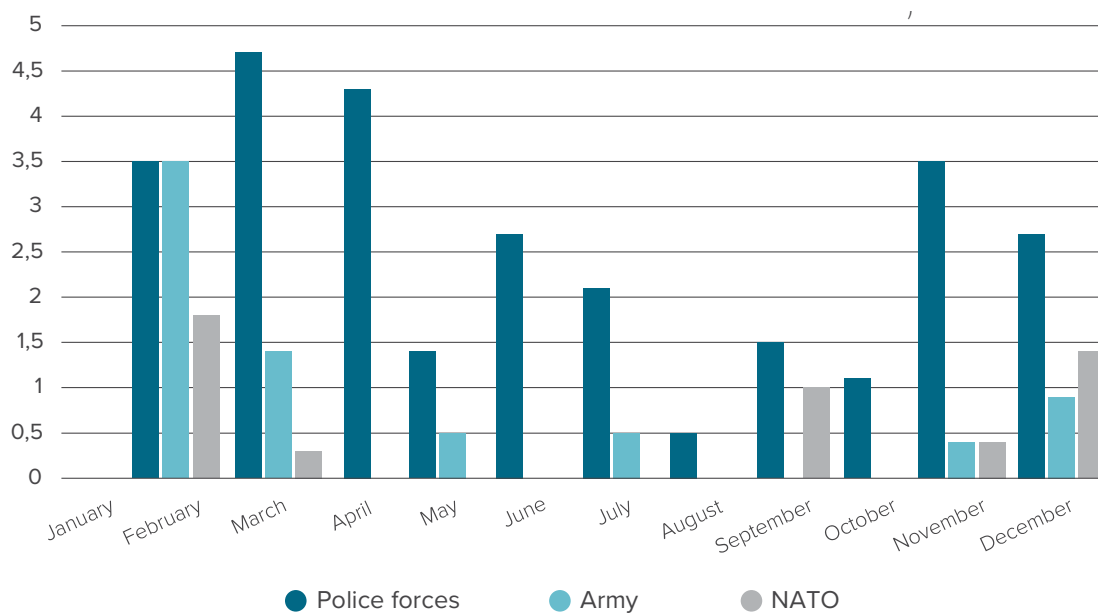


FIGURE 7. Belgian monthly distribution of law enforcement actors in 2020 (%)

Media coverage of the pandemic in the United States

The newspapers that were targeted for analysis placed varying emphasis on coverage of the pandemic. Whereas *The Wall Street Journal* and *The New York Times* both published more than 8,000 texts on the topic over the course of 2020, *USA Today* ran only 2,762

texts during the same period. The section below devoted to these newspapers is divided into two parts: a presentation of the overall results for each of the variables studied, followed by a look at how these same variables fluctuated during the first year of the pandemic.

Portrait of the first year of media coverage in the US

Timing of the analysed texts' publication

Data on the number of texts collected and randomly selected for analysis for each newspaper were presented earlier in this report (see *Section Analysis of media data*). We also assessed whether the passage of time influenced the distribution of these texts over the first year of the pandemic (2020). To do so, we counted the number of texts published each month. Table 9 shows the percentage distribution of texts devoted to the pandemic

that were analysed according to their month of publication.

In Table 9, we can see a variation over time in the number of published texts devoted to COVID-19. The first two months of the year show the lowest proportions of texts devoted to the pandemic, while the following months—March, April, and May—show the highest.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.4%	3.8%	10.8%	11.9%	10.5%	9.4%	9.9%	8.7%	7.8%	9.4%	8.2%	9.2%

TABLE 9. Monthly distribution of US texts analysed (n=2,006)

Authors, journalistic intentions, and strategies used to refer to the pandemic

We also recorded information on the people who authored the texts, their journalistic intent, and the discursive strategies they used. Figure 8 illustrates the proportion of texts produced by each category of author during the first year of the pandemic.

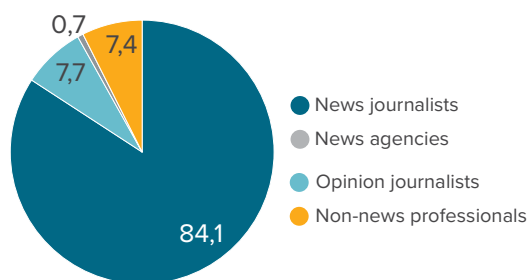


FIGURE 8. US texts distribution by type of author (n=2,006)

According to our analysis and the information listed in Figure 8, the authors of these texts were mostly news professionals. Indeed, 84.1% of the texts in our corpus were written by journalists in a news context, and a smaller proportion was written by journalists giving their opinion (7.7%), for example in a column or an editorial. Non-news professional authors, such as citizens or people in the health care community publishing an opinion letter, were identified as authors in 7.4% of the pieces. Finally, very few texts (0.7%) produced by a news agency were identified.

The intention of the authors of these texts was also analysed. Table 10 shows the

distribution of the texts according to their main journalistic intention.

The vast majority of the texts were written with the journalistic intention to inform. The second most common intention was to present testimony, followed closely by the intention to condemn or criticise. The following excerpts illustrate each of these three categories.

The intention to inform may show up in an announcement, such as government funding for vaccine development: ‘Moderna Inc. said it reached an agreement to receive as much as \$483 million in funding from a federal agency to accelerate the development and production of its closely watched experimental vaccine against the new coronavirus. The federal funding will cover advancing the vaccine through a series of studies to potential approval by the Food and Drug Administration.’ (Loftus, 2020)

In recounting the events and symptoms experienced by individuals, authors might demonstrate the intent to present testimony: ‘Long dissatisfied with the doctor treating his diabetes, Reginald Relf decided to fight through whatever was causing his nagging cough. But then his temperature spiked and his breathing became so labored that he reluctantly took his sister’s advice to visit a doctor.’ (Eligon & Burch, 2020)

Authors writing with the intention to condemn or criticise sometimes sought

Main journalistic intention	% of texts
To inform	85.8
To present testimony	4.8
To condemn or criticise	4.1
To raise awareness, appeal to, or advise	3.5
To speculate	1.0
To reassure	0.7
To instil fear or dread	0.1

TABLE 10. US text distribution by main journalistic intention (n=2,006)

to challenge certain decisions made by an authority figure: 'A great paradox of this pandemic is that while Covid-19 is overwhelming the health care system, health care spending is down a whopping 18 percent. This is because discretionary surgical procedures and the use of other health care services have plunged. Hospitals and doctors are suffering financially while Americans are suffering physically.' (Navathe & Emanuel, 2020)

When coding the texts, we also distinguished three discursive strategies that the authors or quoted individuals used when referring to the pandemic or the virus. Some texts in our corpus showed the use of strategies of personifying the virus or the pandemic, comparing the virus to other viruses or other stages of a pandemic, as well as using metaphors to designate the virus or people involved in caring for the sick. Our analyses found personification to be the most frequently used strategy, at 10.1%. This might take the form, among other things, of attributing to the virus actions that are generally characteristic of humans. For example, the virus might be portrayed as having the ability to destroy the cultural industry: 'Since March,

COVID-19 has hammered the movie business, shuttering theaters and shifting film releases to later in the year or 2021.' (Truitt, 2020)

The second most common discursive strategy is comparison (5.6%), which, among other things, manifests in parallels between COVID-19 and the Spanish flu pandemic because of the high number of deaths in both. We also found comparisons between the health measures and protective equipment used during other pandemics, including H1N1 in 2009, and during COVID-19: 'During the H1N1 flu outbreak, it made C.D.C. rules enforceable, requiring the use of face masks and other measures to slow transmission. It has failed to act so far this time, however.' ('U.S. Workers Deserve Better Protection', 2020)

The least used strategy is metaphor (5.0%). Among other things, the authors used metaphor in the form of wartime discourse casting the virus as an enemy to be combatted: 'President Trump had been touting an anti-malaria drug, hydroxychloroquine, as a possible "game changer" in the fight against the coronavirus.' (Benner et al., 2020)

Place occupied by the pandemic, themes addressed, and actors highlighted

We were interested in the texts' content, and more specifically the actors mentioned, the place they occupied in the text (main theme), as well as the pandemic-related issues they addressed, to examine the media treatment of the pandemic. Roughly 20 types of actors can be identified among the analysed texts. They are classified in order of prominence in Table 11.

To reiterate, for the sake of brevity, we focus our explanations on the five most frequently mentioned groups of actors. As we have noted in Table 11, national politicians are the most frequently mentioned actor group in the data. These actors are especially mentioned when presenting decisions

made regarding the economic support to be granted to companies. National politicians' statements about predictions on the course of the pandemic are also quoted in certain texts: 'Nonetheless, the White House remains resolutely upbeat. "Honestly, if you look at the trends today, I think by Memorial Day weekend we will largely have this coronavirus epidemic behind us," Vice President Mike Pence predicted on Thursday on Geraldo Rivera's Cleveland radio show.' (Milestone, 2020)

Economic actors for their part constitute the second most mentioned group. Some of the issues addressed in these texts are business closures and temporary layoffs: 'Pomeroy's restaurant and accompanying bar, Expatriate,

Actors	% of texts
National politicians (excluding elected health officials)	53.7
Economic actors	47.5
Individuals physically affected by COVID-19	37.2
Individuals socially affected by COVID-19	30.6
Media actors	26.5
Social science experts	22.0
International politicians	18.3
Physical health experts	18.1
Public health actors	16.3
Educational actors	9.0
Essential workers	8.5
Sports actors	6.6
Cultural actors	5.8
Vulnerable individuals or populations	5.5
Police forces	5.5
Elected health officials	4.0
World Health Organization (WHO)	3.9
Army	3.5
Conspiracy adherents (groups or individuals)	1.7
NATO	0.4

TABLE 11. US text distribution by mention of groups of actors (n=2,006)

closed March 15—temporarily, they hope. All 30 employees are on furlough as the nation waits out the coronavirus outbreak’ (Garrison, 2020). These actors also appear in the context of business owners’ testimony of their economic situation due to store closures or the impacts of the government financial assistance programme offered to businesses.

The third most prominent category is individuals physically affected by COVID-19. These people were mentioned in the analysed texts in the context of reports on the number of people infected with or who died from the virus: ‘New York officials have identified 110 cases of children and young adults afflicted by an inflammatory syndrome that has killed three and is believed to be linked to Covid-19. The three who died were aged 5, 7 and 18 years old, Gov. Andrew Cuomo said Thursday. The ages of those affected range from less than 1 to 21 years old.’ (King, 2020)

The individuals socially affected by COVID-19 constitute the fourth most mentioned group in the texts. They are mentioned in particular when discussing the bereavement of the families of individuals who died from the virus or the challenges that health measures raise for social interactions: ‘Before the new coronavirus pandemic, the two spent multiple hours together each week—running errands, going to dialysis appointments or just watching movies.

Today, their relationship is restricted to phone calls, but they remain close.’ (Raphael, 2020)

The fifth most mentioned group in the texts is media actors. Among other things, these actors are mentioned when a newspaper describes its action as an organisation to document the impacts of the pandemic on the ground: ‘In the absence of comprehensive data from some states and the federal government, the Times has been assembling its own database of coronavirus cases and deaths at long-term care facilities for older adults. These include nursing homes, assisted-living facilities, memory care facilities, retirement and senior communities, and rehabilitation facilities.’ (Yourish et al., 2020)

As for the place of the pandemic itself and the COVID-19 virus in the texts, the results of our analysis show that most of the texts that used the selected keywords were written with the primary purpose of addressing the pandemic (66.3%). Indeed, only 676 texts dealt with the pandemic secondarily, which comes to 33.7% of the texts. Moreover, the main pandemic-related theme that was addressed was identified for all texts in our analysis. Table 12 presents the results of this analysis.

As with our discussion of the place of the actors in the texts, we focus here on the five

Main theme related to the pandemic	% of texts
The pandemic’s economic consequences	25.1
Political, diplomatic, and governance considerations related to the pandemic	18.7
The pandemic and the adaptation of daily life	11.3
The virus and its physical consequences	9.5
The pandemic and its impact on public leisure	8.3
Measures to slow the transmission of the virus	8.0
The virus and science	7.3
The virus and its consequences on the components of our social systems	6.0
The pandemic and social polarisation	2.8
The easing of measures to curb the virus	1.5
The pandemic and its impact on people’s psychological well-being	0.8
Not applicable (N/A)	0.5

TABLE 12. US distribution of main themes discussed in relation to the pandemic (n=2,006)

most discussed themes. The most discussed theme is the pandemic's economic consequences. This can be seen in references to the pandemic's impacts on workers, including temporary wage cuts and job losses, and in references to economic market assessments: 'The S&P 500 is now off just 8.5% for the year after rallying 3.2% last week and 32% from its late March low. The industrials, energy and financial sectors of the index all remain down 22% or more for the year.' (McCabe, 2020)

The second most covered theme is the political, diplomatic, and governance considerations related to the pandemic. In addition to the issues inherent in presidential elections in a pandemic context and international relations issues with China, we can also particularly see criticism of the administration. This is the case notable in the following excerpt: 'Dr. Rick Bright, the whistle-blower who was ousted as the director of a federal agency involved in developing a coronavirus vaccine, told a House subcommittee on Thursday that the Trump administration was slow to prepare for the pandemic and to warn how bad it would be. The administration had lagged, he said, "by not telling America the truth or being totally transparent."' (Barron, 2020)

The third most prominent theme is the pandemic and the adaptation of daily life. This can range from the impact of distance learning on university students' housing to the growth of

the residential meal delivery market: 'The talks for Grubhub have heated up as food delivery has become more popular in the coronavirus pandemic. People have turned more toward services such as Grubhub, DoorDash and Uber Eats as restaurants shut down in-room dining during the early phases of the outbreak.' (Conger & Santariano, 2020)

The fourth most discussed theme is the virus and its physical consequences. This theme mainly shows up in the counts of people infected with COVID-19, both domestically and worldwide. The following quote is an example: 'New York state accounts for nearly a third of the nation's 722,761 cases as of Sunday afternoon, according to Johns Hopkins University, which has been tracking the virus. The state has reported 232,436 positive cases and 12,913 deaths.' (Li, 2020)

Finally, the fifth most prevalent theme is the pandemic and its consequences on public leisure. For example, we found texts mentioning the cancellation of sports or artistic events, such as concerts: 'Tesla was scheduled to perform at Rockefeller University in Manhattan on March 6, and was wrapping up several weeks of rehearsals of Tchaikovsky's First Quartet, when one of the violinists, Michelle Lie, opened her email. The university was canceling its next three recitals—starting with Tesla's, the following day.' (Stewart, 2020)

Evolution of coverage in the US in the first year

Authors, journalistic intentions, and strategies used to refer to the pandemic

As mentioned earlier, the primary journalistic intention is to inform in 85.8% of all the texts analysed in the selected newspapers from the US during the first year of the pandemic. This is the most common journalistic intention for each month of the year, with proportions ranging from 100% (January) to 81.4% (September). It is also important to look at

how other journalistic intentions were evoked during the first year of the pandemic. Table 13 gives an overview of the next three most common journalistic intentions each month, after the intention to inform.

As Table 13 illustrates, the second most prominent journalistic intention, to present

		% of texts
Global rise of COVID-19	January	No other journalistic intention
	February	To present testimony (6.6) To condemn or criticise (3.9)
First wave of COVID-19	March	To condemn or criticise (5.5) To raise awareness, appeal to, or advise (5.1)
		To present testimony (4.1) To present testimony (4.6)
	April	To raise awareness, appeal to, or advise (4.2) To condemn or criticise (4.2)
		To raise awareness, appeal to, or advise (5.7) To condemn or criticise (4.7)
May	To present testimony (4.3) To present testimony (5.3)	
	June	To raise awareness, appeal to, or advise (5.3) To condemn or criticise (7.6)
Period of calm and easing of social and health measures		July
	To raise awareness, appeal to, or advise (2.5) To present testimony (4.6)	
	August	To raise awareness, appeal to, or advise (4.0) To condemn or criticise (3.4)
September		To present testimony (7.7) To condemn or criticise (5.8)
	Second wave of COVID-19	October
To raise awareness, appeal to, or advise (2.6) To condemn or criticise (2.6)		
November		To condemn or criticise (4.2) To raise awareness, appeal to, or advise (2.4)
	December	To present testimony (1.2) To present testimony (5.9)

TABLE 13. US monthly distribution of journalistic intentions other than to inform in 2020 (%)

testimony, is the same every month except for November. The third most prominent theme varies from month to month, although raising awareness, appealing to, or advising is the most common, ranging from 2.2% to 5.7%. Condemnation and criticism are also among the most common intentions in the texts during several months of the year. They are preponderant in 2.2% to 5.5% of the texts between February and November. September was characterised by a greater use of speculation than the other months (3.2% of the texts analysed). We can also see that the intentions to downplay, to create fear, or to dramatise are never among the main journalistic intentions.

Place occupied by the pandemic, themes addressed, and actors highlighted

Texts with the pandemic as their main theme were more numerous at the beginning of the year than at the end (weak strength association [$r=0.142$, $p<0.05$]). The main themes addressed in relation to the pandemic in the analysed texts also tend to vary. In Table 14, we present the three main themes appearing each month.

At first glance, we can see that the theme of the economic consequences of the pandemic is often one of the main themes of the texts analysed, and this is true for all months except February. This theme appears to have been most prominent in January (37.5%). This trend may be explained by the impacts that occurred while the virus was raging in China and economic forecasts were being made about the impacts of the virus on the US economy (e.g., supply chain and stock market impacts). We can also note that the topic of political, diplomatic, and governance considerations related to the pandemic was frequently addressed throughout the year, specifically between the months of March and December when the impact of the biggest steps in addressing the pandemic was being felt in the US.

The other main themes vary throughout the year. The theme of the pandemic and the adaptation of daily life comes up sporadically

As for the discursive strategies that the authors of the texts or the people quoted used to refer to the virus or the pandemic, a positive correlation can be seen in the use of personification (weak strength association [$r=0.061$, $p<0.05$]), which means that it was used more over time. However, negative correlations can be seen in the use of metaphor (weak strength association [$r=-0.084$, $p<0.05$]) and comparison (weak strength association [$r=-0.089$, $p<0.05$]). Moreover, no significant data were noted regarding the simultaneous use of two discursive strategies.

in February, and again between April and June, as well as in August and December, in proportions ranging from 9.2% (February) to 14.2% (December). Measures to slow the transmission of the virus were more commonly discussed in the first quarter of 2020, ranging from 37.5% (January) to 13.8% (March). The virus and its physical consequences were discussed more in February, then in October and November. Finally, the pandemic and its impact on public leisure was one of the most discussed topics in January, July, and September.

Through their texts, the journalists raise the different points of view of a host of actors and stakeholders involved in the management of the COVID-19 pandemic. Documenting the distribution of their presence across the journalistic texts helps to reveal the frequency with which these different actors and social groups appeared in the newspapers from one month to the next, and, by the same token, to indicate which issues the written media considered important during the coverage of the health and social crisis. Just as we did for Belgium in Section *Media coverage of the pandemic in Belgium*, we have grouped these actors into the following five categories and discuss their monthly distribution in the subsequent paragraphs:

- Political actors;
- Health care actors;
- Social actors;
- Actors ‘created by the pandemic’;
and
- Law enforcement actors.

Political leaders on the national and international scene play a fundamental role in the mitigation and resolution of any crisis of this magnitude. Figure 9 supports the idea that they are regarded in pandemic times as key players since they figure prominently in

		% of texts
Global rise of COVID-19	January	Measures to slow the transmission of the virus (37.5)
		The pandemic’s economic consequences (37.5)
		The pandemic and its impact on public leisure AND the virus and its impact on the components of our social systems (12.5)
	February	Measures to slow the transmission of the virus (15.8)
		The virus and its physical consequences (13.2)
		The pandemic and the adaptation of daily life (9.2)
First wave of COVID-19	March	The pandemic’s economic consequences (24.9)
		Political, diplomatic, and governance considerations related to the pandemic (19.8)
		Measures to slow the transmission of the virus (13.8)
	April	The pandemic’s economic consequences (29.4)
		Political, diplomatic, and governance considerations related to the pandemic (17.2)
		The pandemic and the adaptation of daily life (12.2)
May	The pandemic’s economic consequences (30.8)	
	Political, diplomatic, and governance considerations related to the pandemic (14.7)	
	The pandemic and the adaptation of daily life (11.8)	
Period of calm and easing of social and health measures	June	The pandemic’s economic consequences (24.9)
		Political, diplomatic, and governance considerations related to the pandemic (19.6)
		The pandemic and the adaptation of daily life (11.6)
	July	The pandemic’s economic consequences (26.8)
		Political, diplomatic, and governance considerations related to the pandemic (21.7)
		The pandemic and its impact on public leisure (10.6)
August	Political, diplomatic, and governance considerations related to the pandemic (24.7)	
	The pandemic’s economic consequences (19.5)	
	The pandemic and the adaptation of daily life (12.6)	
Second wave of COVID-19	September	The pandemic’s economic consequences (26.3)
		Political, diplomatic, and governance considerations related to the pandemic (20.5)
		The pandemic and its impact on public leisure (10.9)
	October	Political, diplomatic, and governance considerations related to the pandemic (22.8)
		The pandemic’s economic consequences (18.5)
		The virus and its physical consequences (16.4)
November	The pandemic’s economic consequences (24.2)	
	Political, diplomatic, and governance considerations related to the pandemic (18.8)	
	The virus and its physical consequences (13.9)	
December	The pandemic’s economic consequences (20.5)	
	The virus and science (20.0)	
		The pandemic and the adaptation of daily life (14.1)

TABLE 14. US monthly distribution of main themes in 2020 (%)

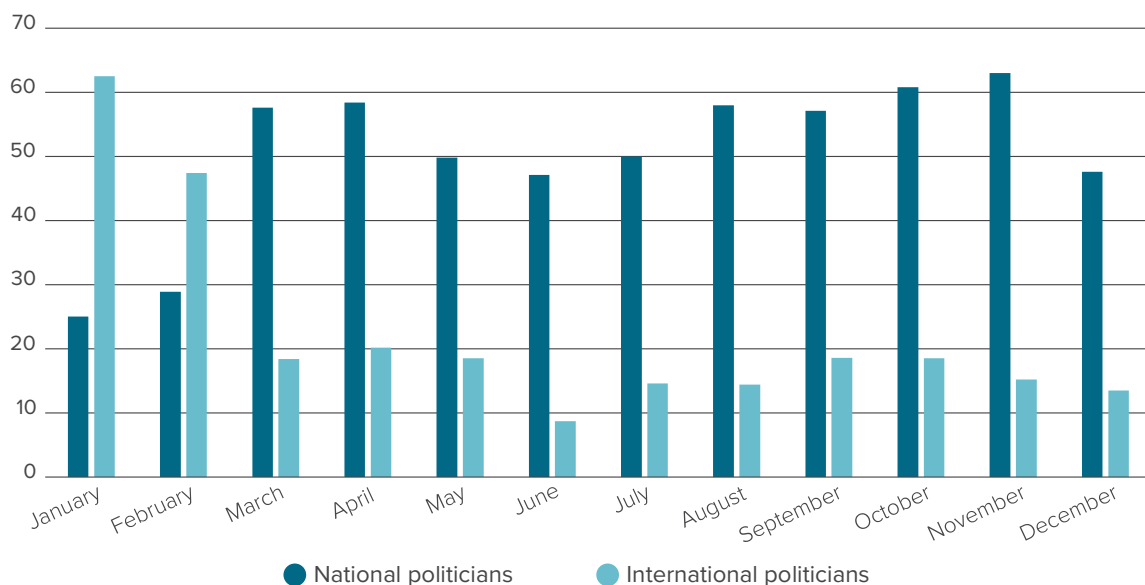


FIGURE 9. US monthly distribution of political actors in 2020 (%)

American news coverage, especially politicians in the national sphere.

The months of January and February were marked by heightened media focus on the actors on the international political scene since, up until then, the virus was minimally detected in US territory, but was already present elsewhere, particularly in China, and then in Europe. As a result, the leaders of these countries were mentioned more in the

newspapers with respect to their management of the pandemic. The trend was reversed when cases of COVID-19 appeared on US soil in March. Thus, international political actors saw a drastic decline in their presence in US news coverage, from a high of 62.5% in January to 13.5% in December (with a minimum of 8.7% in June), making way for domestic political actors, mentioned in 47.1% to 63.0% of texts from March to December.

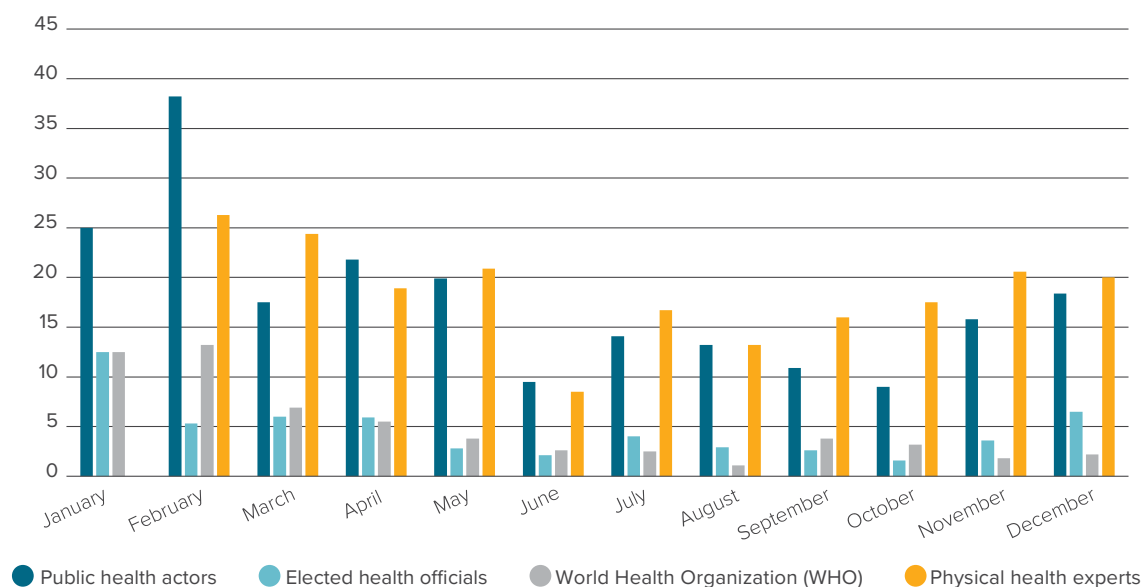


FIGURE 10. US monthly distribution of health care actors in 2020 (%)

The pandemic necessarily involved the mobilisation of a myriad of health care actors, in both the medical and public health sectors. However, in the analysed texts, we see a low presence of actors linked to the WHO as well as elected health officials and ministers, except before the rise of COVID-19 cases in the US (see Figure 10).

Moreover, the curve of media attention devoted to public health actors and physical health experts generally evolves in step with the curve of new cases reported daily. Public health actors were significantly highlighted during the months of January (25%) and February (38.2%), a finding that may be partly supported by the media's concern to reassure the population by featuring actors already heavily involved in risk mitigation strategies, such as the CDC.

Different social spheres were affected by COVID-19 and its aftermath, and thus occupied a certain space in the media coverage of the pandemic. Figure 11 shows the extent to which the media themselves, social science experts, as well as economic, educational, sports, and arts and culture actors, appeared in the journalistic texts.

The US media that was analysed gave prominence to economic actors throughout the year: aside from January, where they appeared in more than one-third of the texts, economic actors were mentioned in 44.2% (September and November) to 55.5% of the texts for each month, from February to December, inclusive. This was followed by the media, and then social science experts, the latter of whom appeared in a relatively stable manner throughout the first year of the pandemic, after January, to offer objective explanations for many featured phenomena. Conversely, sports and cultural actors struggled to reach 10% of mentions, and only managed to do so in three months (12.5% of sports actors in January; 10.3% and 11.9% of cultural actors in September and December).

Coronavirus disease as we know it today has evolved in such a way that the print media have resorted to creating particular groups of actors to describe their realities during the pandemic. Therefore, it was essential to document these actors' presence in the journalistic coverage of COVID-19, since, without the pandemic, these new groups would likely not have formed or appeared in journalistic texts. Figure 12 shows the distribution of these new actors in the analysed texts that compose the journalistic coverage of the pandemic.

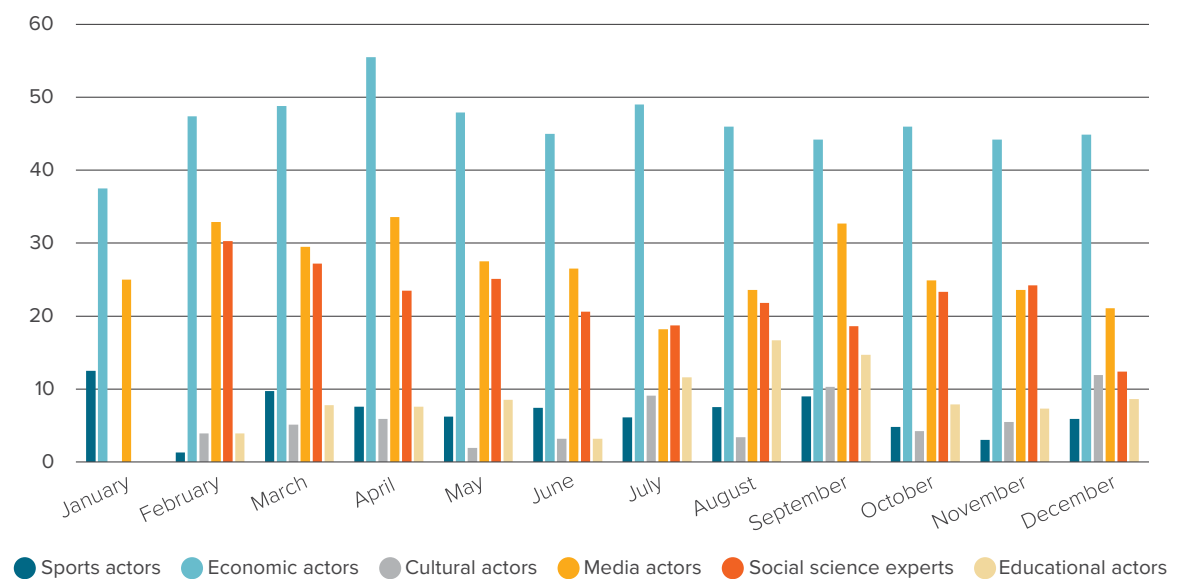


FIGURE 11. US monthly distribution of social actors in 2020 (%)

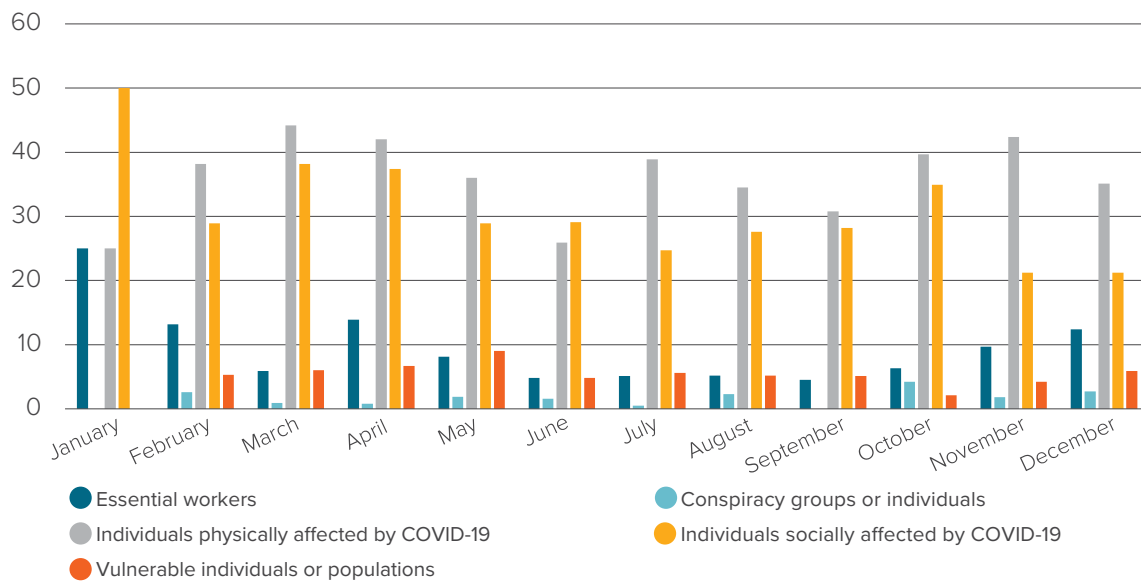


FIGURE 12. US monthly distribution of actors 'created by the pandemic' in 2020 (%)

Although the individuals socially and physically affected by the pandemic still occupy an important place in written media coverage, the strong presence of the actors socially affected by the crisis during the first six months tends to gradually wane over the course of the year in favour of a greater prominence of actors physically affected by the virus. In addition, while essential workers were more present in newspaper texts in January (25.0%), they were significantly less so thereafter (average of 8.1% for the rest of the year). Vulnerable populations, for the month of May alone, show a presence

approaching 10% of the texts for that month. Like conspiracy groups, they are rarely mentioned in the press coverage of the pandemic.

Maintaining and enforcing the legal measures put into place to limit the spread of the virus—such as bans on gatherings, curfews, and masking in various circumstances—required the involvement of law enforcement agencies in efforts to mitigate the health crisis. Unsurprisingly, these responsibilities maximised the chances that these actors would feature in press coverage of

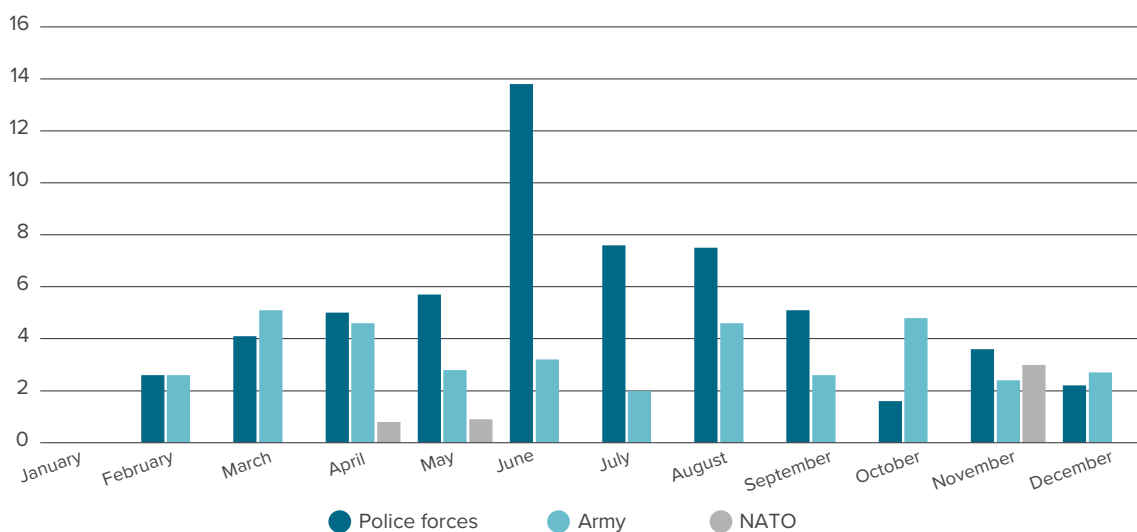


FIGURE 13. US monthly distribution of law enforcement actors in 2020 (%)

the COVID-19 pandemic. However, Figure 13 shows that, despite a low media presence throughout the year, certain events during the summer of 2020 had the effect of increasing the media attention given to law enforcement.

Many of the demonstrations and riots in the summer of 2020, on US soil and around the world, were organised under the political and social movement Black Lives Matter, to speak out against racial profiling as well as

discrimination and violence by police forces against African American citizens. The movement gained high visibility when it took to the streets to condemn the murder of George Floyd on May 25, 2020, with demonstrators calling for cuts to police funding to support marginalised communities instead. However, mass demonstrations across the US worried public health officials, who argued that they could lead to a nationwide reduction in social distancing behaviours.

Media coverage of the pandemic in the United Kingdom

Of the three countries analysed, the UK was the country for which the fewest journalistic texts were collected. While the *Daily Mail* provided extensive coverage, the *Daily Mail* and the *Daily Express* both published around 3,000 texts during the period under review (a much lower proportion than other Belgian and

US newspapers). We now turn to the results of an analysis of media coverage of the pandemic in the UK, in two stages. First, we detail the results for each of the variables studied. Second, we look at how media coverage varied over the first year of the pandemic for these variables.

Portrait of the first year of media coverage in the UK

Timing of the analysed texts' publication

In addition to having gathered data on the number of texts collected and selected for analysis for each newspaper (see Section *Analysis of Facebook data*), we also tracked the number of texts published each month during the first year of the pandemic (2020). Table 15 shows the percentage distribution of texts devoted to the pandemic that

were analysed, according to their month of publication.

As Table 15 shows, the proportion of texts devoted to the pandemic varied over time in the UK. It was at its lowest in January and February, and peaked with the first wave of cases, in March, April, and May.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.1%	4.1%	13.8%	11.2%	11.3%	8.7%	9.7%	7.4%	8.2%	7.8%	7.2%	9.5%

TABLE 15. Monthly distribution of UK texts analysed (n=1,533)

Authors, journalistic intentions, and strategies used to refer to the pandemic

Information on the people who wrote the texts, their journalistic intentions, and the discursive strategies they used was also recorded and counted. Figure 14 illustrates the proportion of texts produced by each category of author.

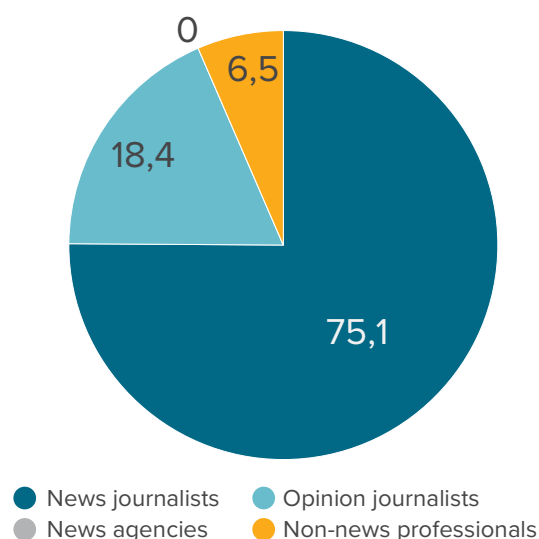


FIGURE 14. UK text distribution by type of author (n=1,533)

The authors of these texts are mostly news professionals writing in a news context, and to a lesser extent, professionals giving their opinion, for example in a column or editorial. Only a small proportion of the texts were written by authors other than professional journalists, i.e., citizens or people in the health care

sector publishing an opinion letter, for example. Finally, no texts were found to have been produced by a press agency. In other words, if the media used these texts, they modified them in part or in whole and identified a journalist from their team as the author.

We examined the intentions of the authors of these texts. Table 16 shows the distribution of the texts according to their main journalistic intention.

During the first year of the pandemic in the UK, the most common journalistic intention found in the analysed texts is to inform, followed by the intention to raise awareness, appeal to, or advise, and then by the intention to condemn or criticise. The examples below illustrate excerpts from texts in each of these three categories.

The intention to inform generally appeared in texts aiming to present facts. For example, this might involve counting cases of a new variant of the virus: ‘Nine cases of a new strain of coronavirus have been found in Scotland, Nicola Sturgeon said yesterday’ (Blackley, 2020).

Analysed texts with the intention to raise awareness, appeal to, or advise might take the form of warnings or recommendations for activities that are safer during a pandemic

Main journalistic intention	% of texts
To inform	65.3
To raise awareness, appeal to, or advise	14.2
To condemn or criticise	7.2
To present testimony	5.6
To reassure	4.9
To speculate	1.0
To instil fear or dread	0.7
To dramatise	0.6
To downplay	0.4

TABLE 16. UK text distribution by main journalistic intention (n=1,533)

and do not require travelling to other regions: 'GPS-Routes (gps-routes.co.uk) looks rather amateurish at first but offers a superb range of more than 3,000 UK walks, from all the big National Trails to strolls along the nearest canal towpath' ('App-solutely fabulous walks', 2020).

The intention to condemn or criticise featured especially prominently in opinion texts and might, among other things, have contributed to questioning the decisions of national politicians: 'The mismanagement, the incompetence, the reckless waste—all of this is shocking. But worse, perhaps, is the brazen cronyism involved. The National Audit Office report on Personal Protective Equipment procurement is a searing indictment of this Government's incompetence' (Rose, 2020).

We also scrutinised the writing style and, more specifically, the discursive strategies that the authors or cited individuals used to refer to the pandemic or the virus. Three discursive strategies were identified: personification of the virus or the pandemic, strategies of comparison with other viruses or other stages of the pandemic, and metaphors used to refer to the virus or the people who were involved in caring for the sick.

The most frequently used strategy appears to be comparison (34.8%), in the form of historical comparison to other pandemics, as illustrated in the following excerpt: 'The outbreak is only the fifth declared a public health

emergency by the WHO in its seven-decade history, after Ebola, swine flu, polio and zika' (Bagot, 2020). This strategy can also take the form of a comparison with an earlier stage of the COVID-19 crisis: 'Hospitalisations are increasing, though as yet are way off the 20,000 a week they hit at the height of the epidemic' (O'Flynn, 2020).

The second most frequent strategy is personification (8.2%), which shows up in portraying the virus as having the human capability to strike, e.g., 'Months ago, when the pandemic first hit, there were apocalyptic predictions of a total market meltdown' (Sandbrook, 2020) or to deal a final blow, e.g., 'Macclesfield Town, for example, was heading towards oblivion before Covid-19 applied the final shove' (Dunn, 2020).

Metaphor turns out to be the least-used strategy (5.3%). Of its various applications, it is used to designate permitted health measures: 'Some grandparents will be able to hug their grandchildren for the first time in months this weekend as new rules allow households to create "support bubbles"' (Smith, 2020). Metaphor might also be used to refer to the pandemic as a war: '[...] Jonathan Van-Tam suggested that the first wave of vaccinations could eliminate "99 per cent of hospitalisations and deaths" if everybody takes it. So, with the caveat that we are not yet out of the darkness, perhaps it's time to ask ourselves what happens next. How will we rebuild once the war is over?' (Sandbrook, 2020).

Place occupied by the pandemic, themes addressed, and actors highlighted

Regarding the content of the texts, we focused on the actors mentioned and the media treatment of the pandemic, i.e., the place occupied by the pandemic in the text (main theme) and the pandemic-related issues addressed. Table 17 classifies these by their prominence.

As with the results for the Belgian and US media, we focus our discussion on the five most frequently mentioned actors. We can see that national politicians are the most frequently mentioned actor group in the data. These individuals are mentioned in particular when presenting new health measures to slow the spread of the virus: ‘First Minister Nicola Sturgeon announces a new package of Covid-19 restrictions’ (‘Timeline to a tumultuous week’, 2020). National politicians are also cited in the context of awareness-raising messages addressed to

the public: ‘UK Prime Minister Boris Johnson’s spokesman said: “It’s important everybody in society sets an example by following the rules – including celebrities.”’ (Powell, 2020).

Actors from the business community (i.e., economic actors) make up the second most frequently mentioned group in the analysed texts. For example, they are cited to show their concern about job losses: ‘David Chapman, of industry body UK Hospitality, said that he could see “a lot of business going to the wall” in Wales unless sufficient financial support was offered. “We could lose up to 40,000 jobs which will be a massive impact in many rural and coastal communities.”’ (Ellicott, 2020)

Media actors are the third most cited group. They are mentioned in a variety of

Actors	% of texts
National politicians (excluding elected health officials)	70.3
Economic actors	47.3
Media actors	35.6
Individuals physically affected by COVID-19	29.2
Public health actors	28.5
Individuals socially affected by COVID-19	23.3
Essential workers	20.1
International politicians	19.4
Educational actors	19.1
Physical health experts	17.4
Elected health officials	13.7
Cultural actors	12.3
Vulnerable individuals or populations	11.6
Sports actors	9.7
Police forces	6.1
Social science experts	5.7
World Health Organization (WHO)	4.9
Army	4.8
Conspiracy adherents (groups or individuals)	0.8
NATO	0.3

TABLE 17. UK text distribution by mention of groups of actors (n=1,533)

situations. Among other things, they may appear in a reference to a social media post: '[...] former care worker Louise Hampton posted a link to a report about Mrs Keenan to her 18,000 Facebook followers with the comment: "Shame on Margaret's Family for allowing this!!!! Using Granny as a guinea pig! Maggie's jab is merely a MARKETING PLOY!"' (Kelly et al., 2020) In other cases, they may feature in a quote from a different media platform than the newspaper in which the excerpt is published: 'Prof Deeks told BBC Radio 4's Today programme: "The worst thing is the proposal that students—in a class where one child has Covid—they stay in school and are tested with this test until they go positive."' ('Priti's fudge on when schools will open again', 2020)

The fourth most mentioned group in the texts is individuals physically affected by COVID19. These individuals may be presented in terms of numbers of cases or deaths, as in the following excerpt: 'There has now been a total of 2,074 Covid-19 related deaths in Ireland and 73,066 confirmed cases.' (Hughes, 2020) In other instances, an individual physically affected by the virus will be mentioned by name and in a more personal way: 'She had just lost her beloved husband of 48 years, John, to Covid-19.' (Hardman, 2020)

Public health actors make up the fifth most mentioned group. These individuals are mentioned, for example, when new health

measures are announced, including lockdowns: 'In Liverpool, public health officials hope to deal with an increase in cases in the Princes Park area without additional lockdown measures.' (Byrne & Milne, 2020) They also appear in connection with decision making on vaccination priorities: 'The National Public Health Emergency Team will meet today to discuss the sequencing of vaccine eligibility.' (Hughes, 2020)

As for the place of the pandemic itself and COVID-19 in the analysed texts, most of the texts were written with the primary purpose of addressing the pandemic (82.8%), while only 264 texts dealt with the pandemic in a secondary manner (17.2%). For all of the analysed texts, we identified the main pandemic-related theme that was addressed (see Table 18).

As we did when presenting the results for the Belgian and US media, as well as our explanations concerning the place of the actors in the texts, we focus here on the five most frequently discussed themes. The most common theme is the pandemic's economic consequences. For example, some texts mention the pandemic's impacts on the national debt: 'Britain's national debt is at its highest level for 60 years after surging by more than £1billion a day during the Covid-19 crisis.' (Salmon, 2020) Several of the analysed texts also deal with job loss, particularly in the catering or entertainment industries: '[...] Cineworld staff now face

Main theme related to the pandemic	% of texts
The pandemic's economic consequences	32.1
Measures to slow the transmission of the virus	13.6
Political, diplomatic, and governance considerations related to the pandemic	9.7
The virus and its physical consequences	7.7
The pandemic and its impact on public leisure	7.6
The virus and science	7.1
The virus and its consequences on the components of our social systems	6.7
The pandemic and the adaptation of daily life	3.7
The easing of measures to slow the virus	4.8
The pandemic and its impact on psychological well-being	2.0
The pandemic and social polarisation	1.9
Not applicable (N/A)	3.2

TABLE 18. UK distribution of main themes discussed in relation to the pandemic (n=1,533)

a bleak Christmas as the chain looks to shut down all its UK sites.’ (Hiscott, 2020)

The second most common pandemic-related theme is measures to slow the transmission of the virus. This theme may appear when announcing the arrival of a new measure: ‘[...] a “circuit break” countrywide lockdown could be announced within days, with plans to close pubs and restaurants being considered.’ (Glaze, 2020) It may also be found in a text explaining a new measure, such as in this excerpt concerning regional lockdowns: ‘Those under local lockdowns are not allowed to enter or leave the areas without a reasonable excuse.’ (Martin, 2020)

The third most discussed theme is political, diplomatic, and governance considerations related to the pandemic. In particular, these analysed texts questioned the Health Secretary’s decision not to call off a sporting event despite the high risk of propagating the virus: ‘Matt Hancock is under renewed pressure over why Cheltenham Festival was allowed to go ahead this year, as the Mirror reveals his links to the horse-racing industry.’ (Sommerlad, 2020)

The fourth most discussed theme is the virus and its physical consequences. This theme regularly appears in announcements of the number of new people infected by the virus over a given period: ‘[...] there have been 879 new cases of the virus in Ireland over the last 14 days which led to the increase in the incidence rate’ (Smyth, 2020). However, the physical consequences of the virus also appear in texts on the history of an individual or a family: ‘Kate Garraway has revealed her husband Derek Draper has lost eight stone as he battles to recover from coronavirus.’ (Bryant, 2020)

Finally, the fifth most common theme is the pandemic and its consequences on public leisure. The analysed texts focusing on this theme deal with negative impacts on leisure or recreation, such as the delay in the production and release of a highly anticipated film, in this case *Batman*: ‘Filming in the UK has resumed after a long pause as a precaution against Covid—Pattinson is reported to have tested positive for the virus—and the release date has been put back to 2022.’ (Sharples, 2020) Texts may also demonstrate how the pandemic has given rise to new leisure activities: ‘With the whist drive suspended during the pandemic, Daniel has taken to playing bridge online, using a pseudonym.’ (Crawford, 2020)

Evolution of coverage in the UK in the first year

Authors, journalistic intentions, and strategies used to refer to the pandemic

Having a primary journalistic intent to inform is the main intention for each month of the year in proportions ranging from 58.8% (January) to 85.7% (February) in the analysed texts produced during the month. Although they are covered in smaller proportions, other journalistic intentions evolved during the first year of the pandemic, and we felt it important to paint a picture of these as well. Table 19 gives an overview of the three other most common journalistic intentions each month, after the intention to inform.

As Table 19 illustrates, the second most prominent journalistic intention is the same across all months, namely, to raise awareness, appeal to, or advise. The third most prominent theme varies from month to month, although condemning or criticising appears most often. Other variations over time are also worth noting. In May, June, November, and December, the intention to present testimony

is more prevalent. Moreover, in January, the journalistic intention of speculating is most frequent for the year—for example, taking the form of rumours about the origins and initial spread of the virus, which may in turn have an effect on the rise of conspiracies. July, for its part, is marked by a higher proportion of texts aiming to reassure than at any other time of the year. We can also see that the intention to instil fear or to downplay rarely appears, and that the intention to dramatise is never among the main journalistic intentions.

Regarding the discourse strategies used to designate the virus or pandemic, a positive correlation can be observed between the use of personification and metaphor strategies (weak strength association [$r=0.093$, $p<0.05$]). Indeed, they tend to be used together within the same text. Also apparent is a negative correlation in the use of personification. The presence of this intention tends to decline over time.

		% of texts
Global rise of COVID-19	January	To raise awareness, appeal to, or advise (17.6)
		To speculate (11.8)
		To condemn or criticise AND present testimony (5.9)
	February	To raise awareness, appeal to, or advise (9.5)
		To condemn or criticise AND downplay (1.6)
		To instil fear/worry (1.6)
First wave of COVID-19	March	To raise awareness, appeal to, or advise (11.3)
		To condemn or criticise (5.7)
		To reassure (4.7)
	April	To raise awareness, appeal to, or advise (12.3)
		To condemn or criticise (8.8)
		To present testimony (7.0)
	May	To raise awareness, appeal to, or advise (17.3)
		To present testimony (8.1)
		To condemn or criticise (7.5)
Period of calm and easing of social and health measures	June	To raise awareness, appeal to, or advise (11.2)
		To present testimony (9.0)
		To condemn or criticise (7.5)
	July	To raise awareness, appeal to, or advise (19.5)
		To reassure (8.7)
		To condemn or criticise (6.0)
	August	To raise awareness, appeal to, or advise (15.9)
		To condemn or criticise (8.0)
		To reassure (5.3)
Second wave of COVID-19	September	To raise awareness, appeal to, or advise (13.5)
		To condemn or criticise (10.3)
		To reassure (4.0)
	October	To raise awareness, appeal to, or advise (12.6)
		To condemn or criticise (9.2)
		To reassure (6.7)
	November	To raise awareness, appeal to, or advise (14.5)
		To condemn or criticise (7.3)
		To present testimony (7.3)
December	To raise awareness, appeal to, or advise (16.6)	
	To present testimony (6.9)	
	To condemn or criticise AND reassure (5.5)	

TABLE 19. UK monthly distribution of journalistic intentions other than to inform in 2020 (%)

Place occupied by the pandemic, themes addressed, and actors highlighted

Texts having the pandemic as their main theme were more numerous at the beginning of the year than at the end (weak strength association [$r=0.168$, $p<0.05$]). The main themes addressed in relation to the pandemic in the analysed texts also tend to vary. In Table 20, we present the three main themes found for each month.

We can see that the main theme, the pandemic's economic consequences, is less common in the January and February texts, and more frequent toward the end of the year. October, November, and December are the months with the highest proportion of texts mainly on the theme of economic issues. The beginning of the year shows more frequent references to the physical consequences of the virus, as well as to measures to slow its transmission, which is often among the three most common themes.

The theme of political, diplomatic, and governance considerations related to the pandemic is more often addressed in the spring and fall, two periods that coincide with a rise in case numbers and, as a corollary, measures to limit the spread of the virus. Lastly, the theme of the virus and science, which was little addressed during the first ten months of the pandemic, features among the three most frequent themes in November and December, coinciding with the administration of the first vaccines.

Through their writing, journalists reflect many facets and issues of the pandemic, amplifying and diminishing some while featuring the different actors affected, connected to, or involved with them. By the same token, it is worth noting the evolution in their presence within the media coverage of the pandemic during the first year. Just as we did for results from Belgium and the US, we have grouped the actors into five categories:

- Political actors;
- Health actors;
- Social actors;

- Actors 'created by the pandemic'; and
- Law enforcement actors.

Figure 15 shows the frequency with which actors from the national and international political sphere are mentioned in English-language newspapers from January through December 2020. Statespersons feature prominently in the analysed journalistic texts across all months: they are mentioned in at least half of the texts published each month. Conversely, actors from the international political sphere mainly figure at the start of the health and social crisis.

International politicians feature more prominently in the analysed texts from January and February, when cases of COVID-19 infection in the UK were minimal, even seemingly insignificant. For their part, municipal and national elected officials and politicians appeared in a relatively stable manner starting from the point when the number of cases began to climb. Except for a steep decline in the month of February (50.8%), actors in this category were mentioned in 65.5% to 78.5% of the journalistic texts from March to December.

Due to the nature of the crisis and the virulence of the infectious disease, health actors were inevitably highly involved in the management of the pandemic and, as a result, featured prominently in the analysed journalistic texts pertaining to this media coverage. Although these actors are generally more frequently mentioned during the first four months of the pandemic, some of the variations revealed by analysis of these data are worth noting (see Figure 16).

The National Health Service and its employees deployed to address COVID-19 were the health actors most frequently mentioned in the analysed print media throughout the year. They garnered more journalistic attention than physical health experts or elected health officials.

		% of texts
Global rise of COVID-19	January	Measures to slow the transmission of the virus (35.3)
		The virus and its physical consequences (23.5)
		The pandemic's economic consequences (17.6)
	February	Measures to slow the transmission of the virus (34.9)
		The virus and its physical consequences (33.3)
		The pandemic's economic consequences (19.0)
First wave of COVID-19	March	The pandemic's economic consequences (29.2)
		Measures to slow the transmission of the virus (20.8)
		The pandemic and its impact on public leisure (12.7)
	April	The pandemic's economic consequences (28.1)
		Political, diplomatic, and governance considerations related to the pandemic (17.0)
		The virus and its consequences on the components of our social systems (15.2)
May	The pandemic's economic consequences (30.6)	
	The easing of measures to slow the virus (16.2)	
	Political, diplomatic, and governance considerations related to the pandemic (13.3)	
Period of calm and easing of social and health measures	June	The pandemic's economic consequences (29.1)
		The easing of measures to slow the virus (11.2)
		The pandemic and social polarisation (11.2)
	July	The pandemic's economic consequences (34.2)
		The pandemic and the adaptation of daily life (12.1)
		Measures to slow the transmission of the virus (12.1)
August	The pandemic's economic consequences (31.0)	
	Measures to slow the transmission of the virus (18.6)	
	The pandemic and its physical consequences AND the pandemic and its impact on public leisure (8.0)	
Second wave of COVID-19	September	The pandemic's economic consequences (31.0)
		Measures to slow the transmission of the virus (15.9)
		Political, diplomatic, and governance considerations related to the pandemic (11.1)
	October	The pandemic's economic consequences (44.5)
		Political, diplomatic, and governance considerations related to the pandemic (15.1)
		Measures to slow the transmission of the virus AND the pandemic and its consequences on public leisure (10.1)
November	The pandemic's economic consequences (40.0)	
	The virus and science (18.2)	
	Measures to slow the transmission of the virus AND the pandemic and its consequences on public leisure AND the political, diplomatic, and governance considerations related to the pandemic (7.3)	
December	The pandemic's economic consequences (36.6)	
	Measures to slow the transmission of the virus (14.5)	
		The virus and science (12.4)

TABLE 20. UK monthly distribution of main themes in 2020 (%)

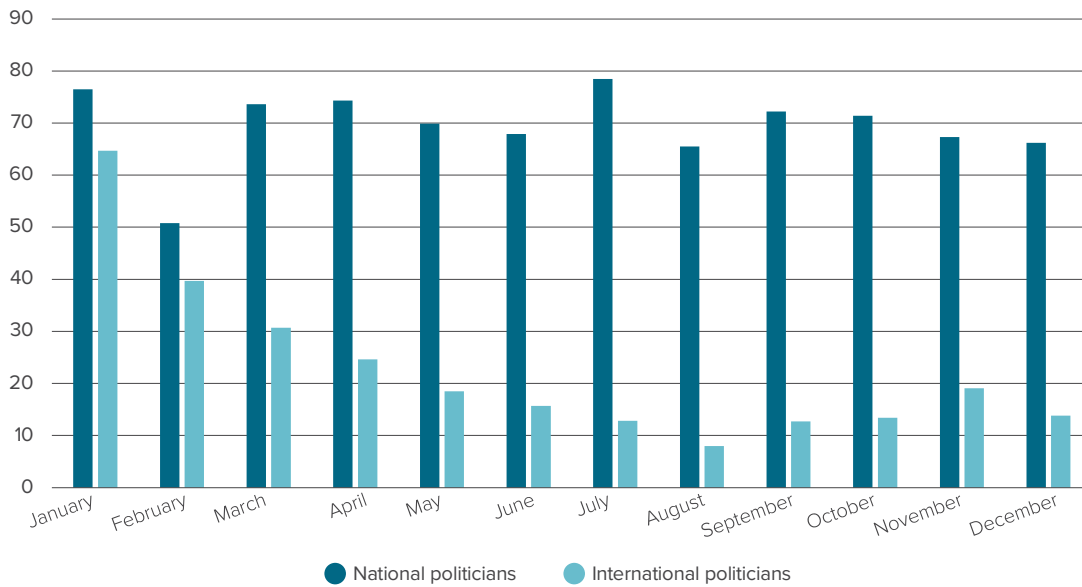


FIGURE 15. UK monthly distribution of political actors in 2020 (%)

The WHO is the actor with the greatest decrease in the number of texts in which it is mentioned. It appears in 29.4% and 22.2% of texts in January and February, respectively, and remains below 10% thereafter. This trend is in line with the fact that international organisations such as the UN and WHO were important sources of information about the virus and its dangerousness, at a time when it was unknown to the global population.

The health and social crisis and the restrictive measures introduced to contain cases of infection had varying degrees of impact on the population at large. Figure 17 illustrates the frequency with which the analysed English-language print media addressed various social groups during the first 12 months of the pandemic. A major gap can be seen between the strong and sustained presence of economic players and the media, and that of the four other social groups, namely social

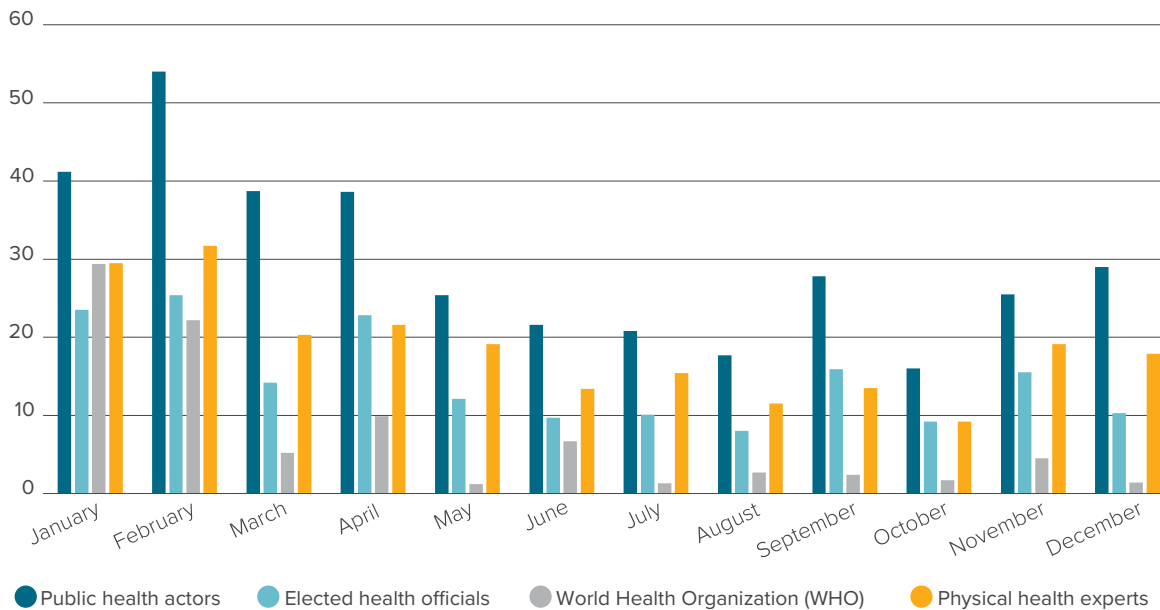


FIGURE 16. UK monthly distribution of health actors in 2020 (%)

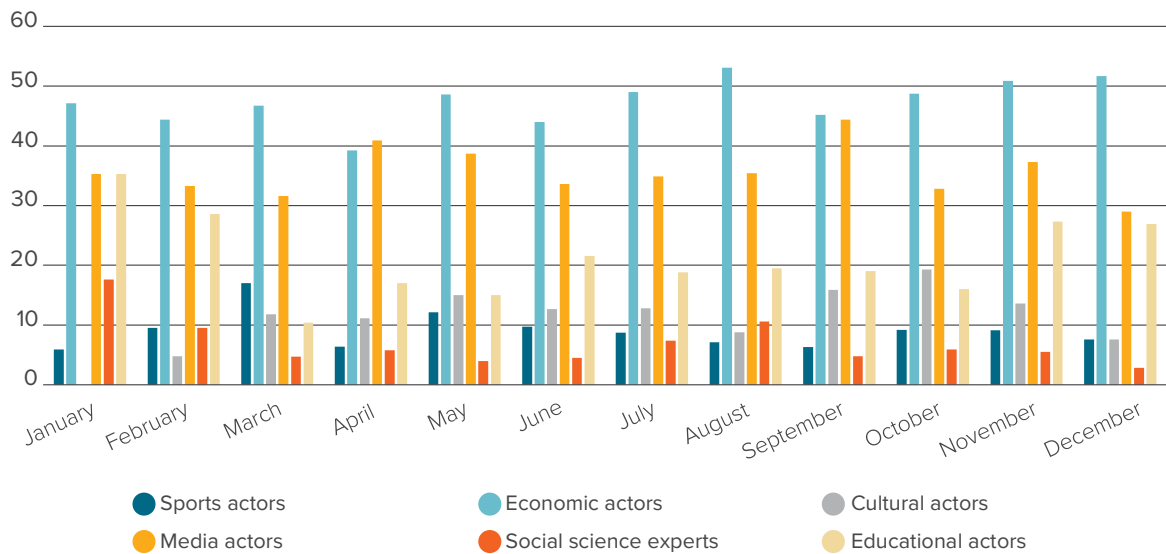


FIGURE 17. UK monthly distribution of social actors in 2020 (%)

science experts and actors from the worlds of sport, culture, and education.

The most striking variations are in educational actors, which appear much more often at the very beginning of the pandemic. Between February and March, a marked drop can be observed in their presence in the media, with a significant comeback in November and December. This particular fluctuation can be interpreted as resulting from journalists' keen interest in the many impacts of school

closures—which began in February in the UK—in anticipation of major lockdowns and closures of essential services in March and December.

The presence of certain groups of social actors is contingent on the presence of the coronavirus disease and its virulence. Without the pandemic, these groups of actors likely would not have been consolidated, nor would they have appeared in the media coverage that was analysed. Thus, their media popularity is significantly associated with the novelty of the

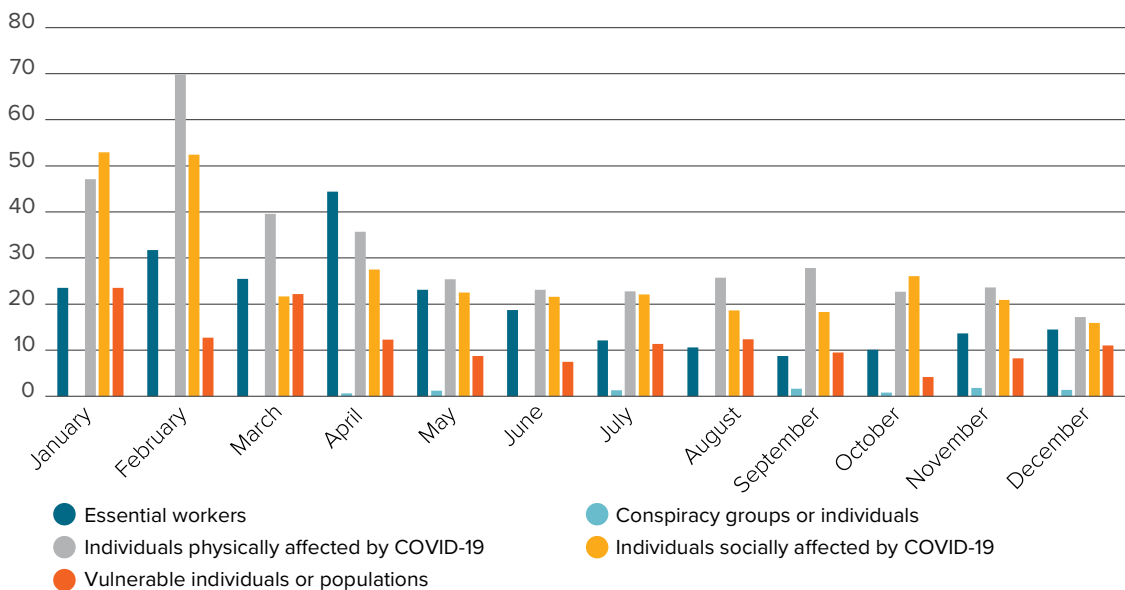


FIGURE 18. UK monthly distribution of actors 'created by the pandemic' in 2020 (%)

crisis and its evolution through the first four-month period (see Figure 18).

Although they generally follow each other by a few percentage points throughout the year, the number of individuals affected socially and physically rises in January and February, when references are already made to the consequences and potential measures in the event of a major spread of the virus. The people physically affected by the virus generally seem to be mentioned only slightly more throughout the press coverage, except for the months of February and March, where the gap is wider. The people socially affected by the virus feature in half of the analysed text corpus in January and February, while their proportion falls by half from March until the end of the year. Once again, groups espousing conspiracy theories receive little media coverage, and sometimes none at all.

Law enforcement actors, being essential in maintaining order and services to the public in times of profound uncertainty, helped protect vulnerable people and aided front-line services, which were also greatly affected by the pandemic on many levels. Figure 19 highlights the times when these actors received the most media attention during the first year of the COVID-19 pandemic.

The uptick in armed forces mentions in March and April coincides with the creation of the COVID Support Force to deal with the impacts of the pandemic. Announced by the Ministry of Defence, the Support Force consisted of thousands of military personnel and reservists deployed to support public services and screening efforts, to identify and break transmission chains.

As for the police, they are discussed at various points in view of their role in enforcing health measures, as well as in the reorganisation of social services, including police services, in preparation for the arrival of the virus. Decisions on limiting tasks to reduce the spread of the virus were one of the issues addressed at the start of the year, and were gradually replaced by texts addressing their role in ensuring compliance with health measures, including the limitation of gatherings. Their greater presence in the June texts can, as in the US, be explained by their presence and their involvement during demonstrations by the Black Lives Matter movement, which took place against a backdrop of health restrictions and fears about the spread of the virus during gatherings.

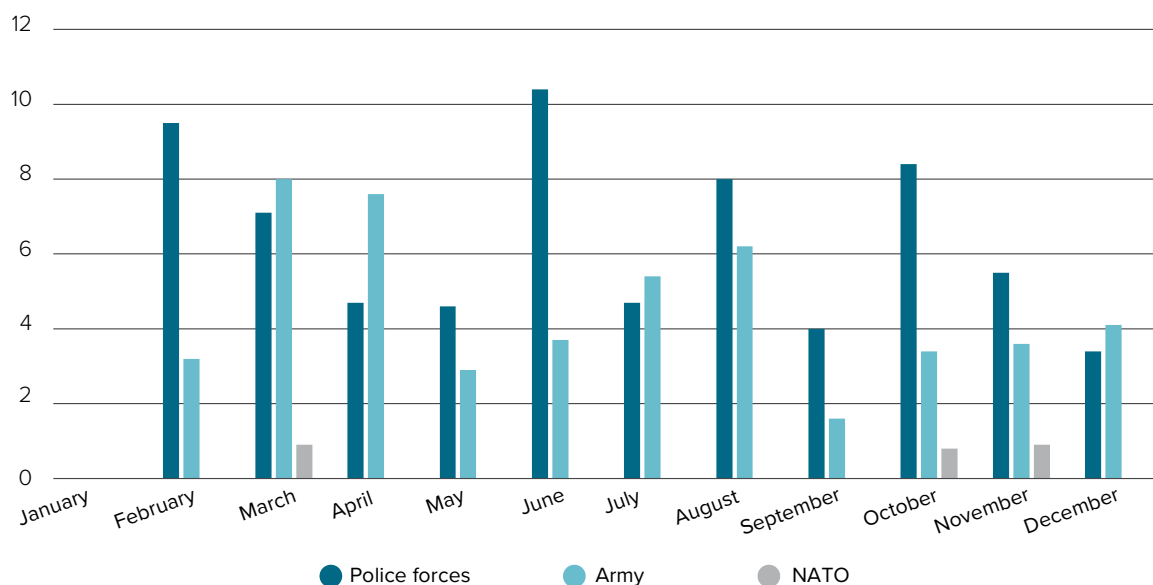


FIGURE 19. UK monthly distribution of law enforcement actors in 2020 (%)

Comparative analysis: Belgium, the United States, and the United Kingdom

Having presented a portrait of each country through our analysis, we now move on to a comparison of the findings for each country. This enables us to highlight both

common and country-specific elements, based on the analysed texts' time of publication, conditions of journalistic production, and content.

Key findings

- Media coverage follows the peak periods of the crisis: it is higher when the first cases appear, and then during the different waves of the pandemic.
- The proportions of informative and opinion texts vary between allied countries, and evolve over time.
- Newspapers are quick to focus their coverage on economic considerations rather than on information about the physical consequences of the virus or scientific knowledge about it.
- The place occupied by protective measures in the reporting varies greatly from country to country, and throughout the first year of the pandemic.

Timing of the texts' publication

Generally speaking, media coverage of the pandemic increased in early 2020, reaching its peak in March and April, when COVID-19 appeared in these countries, and the authorities announced the first waves of measures to combat the virus. Thereafter, media interest

in the pandemic waned slightly, particularly during the summer period, before rising again in the fall, a period associated with a resurgence of cases and the introduction of new health measures.

Authors, journalistic intentions, and strategies used to refer to the pandemic

Types of authors, main journalistic intentions, and discursive strategies provide insight into the type of pandemic-related information relayed by newspapers. Is this information mainly neutral and objective or more opinionated?

Authors. First, we can note that the authors of the texts are mostly news journalists, whose work is subject to the ethical principles of neutrality and objectivity. The same applies to texts produced by press agencies. Although the texts written by press agencies are few and far between (and sometimes absent) in the UK, the journalists who write them are subject to the same ethical rules. However, there are

	% of texts	
	News journalists	Press agencies
Belgium	90.6	2.3
US	84.1	0.7
UK	75.1	0.0

TABLE 21. Distribution of texts written by news journalists and news agencies, by country

significant differences between the three countries (see Table 21).

We can see that Belgium is the place where newspapers produce the most texts written by these two categories of authors, while the US shows lower figures for these authors and the UK, the lowest. Indeed, the UK has the highest proportion of texts produced by opinion journalists and by non-news professionals (see Table 22).

written by members of the public who hold no such expertise but rather share their personal views on pandemic impacts and the choices that need to be made to better manage it.

Journalistic intentions. The main intention of the texts is to present neutral and objective information. The two most frequently found intentions in two of the three countries (Belgium and the US) are to inform and to present testimony (see Table 23).

	% of texts	
	Opinion journalists	Non-news professionals
Belgium	6.3	0.9
US	7.7	7.4
UK	18.4	6.5

TABLE 22. Distribution of texts written by opinion journalists and non-news professionals, by country

It should be noted that opinion journalists are also news professionals who must abide by certain ethical standards, such as truthfulness, but they are not bound by objectivity. Moreover, the designation of texts produced by non-news professionals does not necessarily mean that they do not provide information relevant to the pandemic, as evidenced by opinion letters written by experts in the health or social sciences who offer perspective on the virus or the management of the pandemic in light of scientific knowledge in their field. However, this category also includes letters

While the intention to provide information is aimed at providing an overview of the situation from a variety of angles and standpoints, the intention to present testimony primarily seeks to give a voice to people on the ground, helping to illustrate the real consequences of the virus and of health measures in different settings, especially hospitals, and in different spheres of life, especially the economic sector. Once again, this combined proportion is highest in Belgium (96.8%), followed by the US (90.6%) and the UK (70.9%). There are therefore significant variations between

	% of texts	
	To inform	To present testimony
Belgium	87.6	9.2
US	85.8	4.8
UK	65.3	5.6

TABLE 23. Distribution of texts whose main intention is to provide information or to present testimony, by country

newspapers across different countries, with UK newspapers differing more from the other two in the types of texts published.

What happens when texts are not aimed at achieving neutrality? In the UK, newspapers mainly publish texts to guide readers through this period of social change and the arrival of a new virus, either to raise awareness, appeal to, or advise readers (14.2%). A certain proportion of texts also seeks to condemn or criticise, particularly in relation to the authorities' management of the pandemic. US newspapers also feature this intention in their texts, albeit to a lesser extent. The UK authors also seek to reassure readers about the current and future impacts of the pandemic. Lastly, we observe little tendency to speculate, dramatise, trivialise, or instil fear.

It is also interesting to note that the sum of texts with the intention of informing or presenting testimony is lower than the proportion of texts written by news journalists or news agencies. In other words, these authors are also involved in writing texts whose main intention is not necessarily neutral.

Discursive strategies. Finally, our study of discourse strategies found that metaphor was used in a similar way in all three countries, but that the other two strategies (personification and comparison) were used in different proportions between countries. In Belgium and the US, the

strategies used to tell the story of the pandemic mainly involved attributing human characteristics to the COVID-19 virus (around 10% of texts in both countries). This led to cases where the virus was presented as being directly responsible for the consequences of the pandemic, such as the impact on the country's economy, or the shuttering of businesses or schools.

Comparison was used more often in the UK, in more than one out of three texts, while personification was used in proportions close to those of the other two countries under study (8%). In telling the story of the pandemic, authors in large part made links with other viruses or earlier periods of the pandemic. These strategies, which contribute to telling the story of the pandemic, are employed to a greater extent when newspapers and the texts that they publish deviate from standards of journalistic neutrality and objectivity. They can thus reflect both a desire to capture the public's attention and a desire to shape public perception of the pandemic.

We can thus see that the information in the analysed texts is mostly neutral and objective. Most of the texts are produced by news journalists (between 75.1% and 90.6%, depending on the country), with the primary intention of informing or presenting testimony, although UK newspapers have the lowest proportion of news journalism texts.

Place occupied by the pandemic, themes addressed, and actors highlighted

The variables relating to the texts' content—the place occupied by the pandemic, the main theme, and the actors mentioned therein—allow us to delve deeper into the media's account of the pandemic.

Place occupied by the pandemic. While the number of analysed texts with the pandemic as their main theme is higher everywhere in our corpus, the proportions vary from country to country. While the UK has the

highest proportion of texts with the pandemic and its impact on different facets of society as their main theme, the US has the lowest. This can be explained by important events not directly connected to the pandemic, but on which health measures had an impact. This is particularly true of the Black Lives Matter protests, where the management of police presence and the spread of the virus in these gatherings were partly addressed in the texts dealing with the demonstrations. The same

applies to the November presidential elections in the US, where the electoral process in a context of health restrictions and issues surrounding mail voting featured among the secondary concerns in the coverage of this nationwide event. Finally, for all three countries, texts with the pandemic as their main theme are more numerous at the beginning of the year than at the end, which is consistent with a certain form of integration of the virus into various facets of life.

Main themes addressed. The theme of the economy occupied an important place in the texts. It features as the top theme in the UK (32.1%) and the US (25.1%), and is among the top three in Belgium (15.5%). While some of the economic texts focus on issues that may seem closer to people's realities, such as business closures and job losses, a significant proportion deal with national or international fiscal issues, such as stock markets and the impact of other countries' health and social measures on global supply chains.

While the other themes that were addressed differ from country to country, many of the topics likely to touch on the day-to-day realities of the public or the social issues linked to the pandemic are scarcely addressed. This is the case for themes such as the psychological impact of the pandemic (less than 5% of cases) and its impact on the components of social systems (less than 7% of the texts). The theme of the pandemic and the adaptation of daily life forms the main narrative framework of 11.3% of texts in the US—which, as suggested earlier, can be explained by the impact of these transformations on the economy and business sales—while the consequences of the pandemic on public leisure is the main theme addressed in Belgium (these themes are often addressed in much lower proportions in the other countries).

In the UK, the second most prominent theme is measures to slow transmission of the virus (13.6%), while all other themes are covered in proportions below 8%. In Belgium, media attention is divided in similar proportions (between 17.3% and 14.0%) between the

top four themes, listed in order of decreasing representation: the impact on public leisure, the physical consequences of the virus, measures to slow its transmission, and economic consequences. In this country, a pandemic narrative can be partly identified, focusing on the impact of the pandemic in terms of the number of people infected or killed by COVID19, and the strategies applied to try to limit its spread. Finally, in the US, political, diplomatic, and governance considerations come second (18.7%). As mentioned above, this result is consistent with the importance of the electoral issue and its unfolding in the context of a pandemic. For example, this theme was absent from Belgian newspapers, while in the UK it was mainly concentrated around the spring and autumn resurgence periods.

It is also important to note that the proportion of texts devoted to providing information on the new virus or on scientific developments concerning the virus and its treatments is, overall, low. However, scientific advances to better understand the different facets of the virus (how it spreads, how to treat people suffering from it) and to develop a vaccine prominently feature in the scientific community in the first year. Similarly, social polarisation is also little addressed, which leads us to believe that the scale of this phenomenon and its social impacts were either not part of the pandemic narrative in the first year, or were not addressed as a priority to avoid divisiveness.

Actors. Analysis of the actors mentioned in the analysed texts provides deeper insight into the players involved in the pandemic narrative. In terms of the proportions of actors mentioned throughout the year, we can observe that a greater number of players are mentioned in texts in the UK and the US. This means that newspapers in these countries have more texts on the pandemic and its impact on different spheres of society. In Belgium, where few actors are mentioned overall, the texts are more focused on covering a more targeted number of groups and issues relating to the pandemic. In addition, economic and political actors are among the most frequently highlighted in the texts for all three countries

studied. It should be pointed out, however, that although the economy was the main theme in the UK and US papers, and these actors were addressed in almost half of the texts, they come in behind national politicians, who are addressed in 70.3% and 53.7% of these countries' texts, respectively. This can be explained, for example, by the fact that coverage of economic issues is sometimes centred on fiscal data, such as GDP and the stock market. This does not necessarily entail mentions of actors in this field, such as banks or companies.

It also seems worthwhile to take a closer look at the frequency with which the various groups of actors are mentioned throughout the year.

In Belgium, although national politicians and economic actors are among the most talked about, they are only discussed in around 20% of cases. Regarding political actors, we can see that international politicians are more present during the months of January and February, before being overtaken by national politicians when the pandemic becomes more strongly present in their respective countries, i.e., in March. In Belgium, however, international politicians received more attention in June, when certain health measures in Belgium were lifted and borders reopened.

The health actors are mentioned in different proportions in different countries. While they are more present in the UK, they are least frequent in Belgium. Apart from the UK, physical health experts are the most frequently mentioned, ranking second only to public health actors. This can be explained by the media's growing tendency to give a voice to individuals able to offer analysis of the news items under discussion. In all cases, we note

that WHO actors are less present than national health actors, who are more often at the heart of the various risk mitigation strategies for different public health issues.

Regarding social actors, we can see that after economic actors, the groups that are most discussed vary from one country to the next. While actors from the sports and cultural communities occupy a more prominent place in Belgium, particularly when health restrictions are less severe, it is the media that come second in the US and the UK. In general, these newspapers tend to relay information published on social media, including government announcements. In the case of the US, this observation can also be explained by the important role that the media played in tracking cases associated with the virus, as the media took the initiative in drawing up a death toll, whereas such data tended to be recorded locally by state public health authorities.

The actors whose role was 'created by the pandemic' also featured prominently in the newspapers. Those affected physically, in terms of the number of people with the virus or the number of deaths, were the main focus of attention, followed closely by those affected socially. This result is consistent with the numerous health and social measures and their economic consequences, which often extended to the entire population. In any case, it is worth noting that groups embracing conspiracy theories do not feature much in the analysed media coverage, as their presence appears—during this period of time—to have been more concentrated on social media.

HEALTH AUTHORITY FACEBOOK PAGES

In the second part of this study, we analysed the Facebook pages of public health agencies in Belgium, the US, and the UK. Facebook remains the most widely used platform in these countries, providing a means of directly reaching a large swath of the population. As this medium stands out for its

interactivity, we thought it would be interesting to first analyse the content of posts by public health authorities, and then to look at users' comments to understand how they interact with each other and to public health messages.

Presentation of the public health pages analysed

SPF Facebook page—Santé publique—Belgium

The service public fédéral (SPF) Santé publique, Sécurité de la Chaîne alimentaire et Environnement (federal public service for public health, food chain safety, and the

environment) is responsible for 'preparing and implementing public health strategy' as well as 'safeguarding public health and the environment (Service Public Fédéral Belge, 2022, translated freely). Its mission is to 'protect and improve the health of citizens' and to promote the principle of 'One World, One Health' (SPF Santé publique, 2022). To do so, this public service must 'place health and all its components at the core of its concerns and missions, including human health, the health of the planet, animal and plant health, and food' (SPF Santé publique, 2022, translated freely).



FIGURE 20. Screenshot of the SPF Santé publique Facebook page header

Its Facebook page has 160,000 followers, and its first (still visible) posts date back to fall 2011.

CDC Facebook page—US

The Centers for Disease Control and Prevention (CDC) is one of the largest components of the US Department of Health and Human Services. The CDC's mandate is to save lives and 'to protect America from health, safety and security threats, both foreign and in the U.S.' (CDC, 2021). They 'fight disease and support communities and citizens to do the same' (CDC, 2021). In addition to conducting critical research, the organisation provides health information and 'fights disease and support communities to do the same' (CDC, 2021).

Created in May 2009, the CDC Facebook page currently has around 4.2 million followers.



FIGURE 21. Screenshot of the CDC Facebook page header

DHSC Facebook page—UK

The role of the Department of Health & Social Care (DHSC) is to support ministers and help them lead the UK's health and social care. It also strives 'to help people live more independent, healthier lives for longer' (DHSC, nd). One of its duties is also to 'improve, protect and level up the nation's health, including through reducing health disparities' (DHSC, nd).

Its Facebook page has 453,000 followers, and its oldest and most visible current post dates to April 2019.



FIGURE 22. Screenshot of DHSC Facebook page header

Content of the Facebook posts

During the selected period, from 1 January to 31 December 2020, the governmental public health organisations studied were very active on Facebook. With 1,627 posts during this period, corresponding to an average 3.33 posts per day, the UK DHSC page was the most active in terms of number of posts. The US CDC page comes in second (946 posts), followed by the Belgian SPF Santé publique (384 posts). For comparison,

their averages were 2.59 and 1.05 posts per day respectively.

Our analysis of the content of these three agencies' posts during the pandemic focused on the posts' reach and type, the primary tone used, as well as the topics covered. The specifics of our analytical grid for the content of the Facebook posts are provided in Appendix 2.

Reach of the posts

Analysis of the reach of the three public health agencies' Facebook posts was based on counting the number of reactions (likes, dislikes), comments, views (videos), and shares for each post.

We began by calculating the average of the different types of user interactions on the public health Facebook account posts for the three countries under study. Table 24 illustrates that the posts on the pages with the highest number of followers had greater reach.

We note that the posts' reach varies substantially, up to several orders of magnitude, according to the type of interaction. Reach is highest when examining data on video views, which requires little effort or engagement on the part of users. Next come reactions, then comments and, finally, shares. The CDC page deviates from this assessment, particularly regarding the high number of shares. These results are consistent with the level of engagement required of users for each form of interaction. Indeed, the forms of interaction that require greater effort and visibility are used less than those that require little engagement.

Type of interaction	SPF (Belgium)	CDC (US)	DHSC (UK)
Reactions	1,355.2	5,113.5	1,165.0
Comments	254.1	1,092.6	521.0
Views (videos)	23,581.3	470,337.2	80,872.0
Shares	360.9	624,000.0	380.0

TABLE 24. Average number of user interactions with posts

Post content results

Post types

The public health organisations we examined put a great deal of emphasis on multimedia content in various forms, such as videos, photos, and infographics. In some cases, the same post may contain more than one element (e.g., text and a URL link). When this was the case, we classified posts according to the predominant element. The results show that the specific type of multimedia content favoured on each page varied greatly from one organisation to another, as shown in Table 25.

In Belgium, the administrators of SPF Santé publique opted for posts featuring infographics (34.2%), live video (28.6%), followed by other videos (11.5%). Below are a few examples of these types of posts. The infographics mainly highlighted health rules and advice (Figure 23). Most of the live videos were based on press briefing broadcasts from government actors (Figure 24). The other types of videos highlight items such as advice or steps to follow, for example how to mask up correctly.

In the case of the CDC in the US, photos (46.4%), infographics (29.4%), and videos (18.0%) were the most common types of posts. Page administrators added photos or infographics to their posts particularly to share information about the situation (Figure 25) or on health and

social measures, as well as about resources or advice for the public (Figure 26) developed by their organisation. The videos mainly focused on health tips and measures.



FIGURE 23. Example 1 of an SPF Santé publique infographic post

Source: <https://www.facebook.com/santebelgique/posts/pfbid0wVV3ctKxXC9z9UZaijzp-jFJQfqcXGH5eDBHU6HgrPTxD2FVXmYZt-jbyLruPghksjl>

Post type	% of posts		
	Belgium (n=384)	US (n=946)	UK (n=1,627)
Infographic	34.2	29.4	18.1
URL link	12.0	1.3	9.6
Other	0.8	3.6	0.7
Photo	1.3	46.4	17.0
Share	10.4	1.2	8.6
Text	1.3	0.2	0.0
Video	11.5	18.0	46.1
Live video	28.6	0.0	0.0

TABLE 25. Types of posts on the three public health Facebook pages under study

SPF Santé publique, Sécurité de la Chaîne alimentaire et Environnement était en direct.
30 décembre 2020 · 🌐

Les orateurs:

- Antoine Iseux (FR) - Centre de Crise National
- Steven van Gucht (NL) - interfederaal woordvoerder
- Yves Van Laethem (FR) - porte-parole interfedéral
- Yves Stevens (NL) - Centre de crise National

Updates précédents: <https://news.belgium.be/fr/corona>



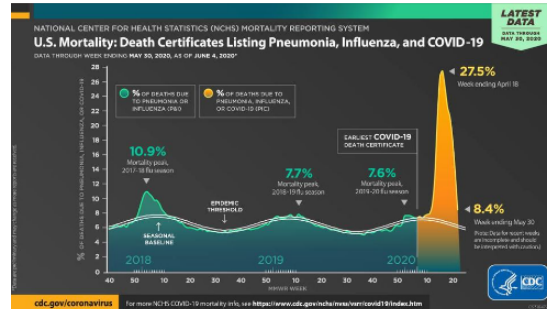
270 233 commentaires 62 partages

FIGURE 24. Example of a live video post from SPF Santé publique

Source: <https://www.facebook.com/santebelgique/videos/142074597716369/>

CDC
9 juin 2020 · 🌐

The latest CDC COVIDView report shows that the proportion of death certificates coded as being related to COVID-19 decreased for the sixth week from 13.7% for the week ending May 23 to 8.4% for the week ending May 30. While this percentage is still above the epidemic threshold, it is now similar to what has been observed at the peak of some flu seasons. Learn more: <https://bit.ly/2ViFfiZ>.



2,4 k 780 commentaires 1,1 k partages

FIGURE 25. Example of a CDC infographic post

Source: <https://www.facebook.com/cdc/photos/a.184668026025/10158036222076026/>

CDC
8 septembre 2020 · 🌐

It's important to take care of your mental health and stay connected to friends and family during a pandemic like COVID-19. Learn about the things you can do to manage your stress: <https://bit.ly/340pBQa>.



925 598 commentaires 354 partages

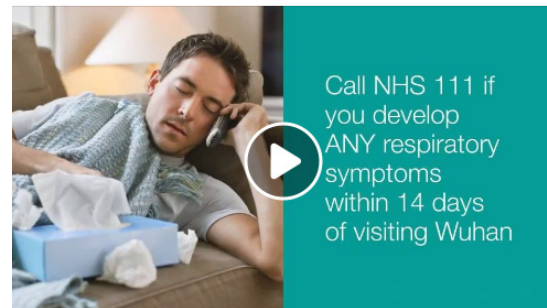
FIGURE 26. Example of a CDC photo post

Source: <https://www.facebook.com/cdc/photos/a.184668026025/10158361779166026/>

Department of Health and Social Care - DHSC
25 janvier 2020 · 🌐

Latest info on coronavirus <https://www.gov.uk/coronavirus>

If you have travelled to the affected area, make sure you know what to do if you experience symptoms



4 1 commentaire 6 partages

FIGURE 27. Example of a DHSC video post

Source: <https://www.facebook.com/DHSCgovuk/videos/50114263739582/>

In the UK, by far, videos (46.1%) stand as the most common type of post used by DHSC page administrators (Figure 27). Infographics (18.1%) and photos (17.0%) rank respectively as the second and third most frequently found content type. These three types of posts are

also among the top three used by CDC page administrators, but in different proportions. We can therefore see how important it is for the administrators of these pages to produce their own content and enhance it with visual aids.

Main tone used in the posts

We also examined the tone used by the page administrators in the messages they put out (see Table 26).

For the three Facebook pages studied, the most frequently used tones showed several similarities, as well as slight variations depending on the country. For all three public health organisations, the main tone was informing, which entails a degree of neutrality.

In the case of the Belgian Facebook page, posts with an informing tone (68.0%) were mainly addressed to a general audience, but some were aimed at a more targeted audience such as healthcare professionals (Example 1). These posts cover a wide range of topics, including facts about health measures and the current situation, as well as resources for the public.

Example 1. Main tone of informing (SPF)

With the spread of the COVID-19 coronavirus, many healthcare professionals sought to put their experience to good use by helping facilities in need of additional health support. They were now able to go through Cocom and Cocof to join a

“reserve” in order to provide care in the Brussels-Capital region.

<http://www.iriscare.brussels/.../coronavirus-appel-en.../> (SPF-102)²⁷

The imperative tone (15.6%) is the next most frequently used tone on the SPF page. This type of post essentially sets out guidelines pertaining to social and health measures. They often have a more negative connotation and are intended to encourage all members of the public, even the most reluctant, to comply with the measures in place.

Finally, the appealing tone (6.8% of SPF page posts) appeals to people to take action, whether in the form of compliance with health and social measures or various ways of pitching in to collective efforts at this particular time (Example 2). This type of post can reveal community spirit, and the tone is usually more positive.

Example 2. Main tone of appealing (SPF)

Coronavirus (Covid19): Masks to give away?

Do you have surgical masks, FFP2, FFP3? You can help our caregivers by

Main tone	% of posts		
	SPF (n=384)	CDC (n=947)	DHSC (n=1,627)
Caring	4.2	3.1	9.7
Imperative	15.6	5.3	19.1
Appealing	6.8	0.0	0.0
Informing	68.0	76.6	52.4
Persuading	5.2	8.2	6.4
Suggesting	0.3	6.6	12.1
Reassuring	0.0	0.1	0.0

TABLE 26. Main tone used in posts on the three public health Facebook pages under study

bringing them to your local hospital.

👉 Would you like to make your own?
We're working on an instruction manual to help you get started. We'll be sharing it with you as soon as possible.
#ensemblecontrecorona (SPF-62)²⁸

For the CDC in the US, an informing tone is used in most of the posts (76.6). These posts generally have to do with health and social measures, or with the situation in the US (Example 3).

Example 3. Main tone of informing (CDC)

While there is not yet an authorized or approved vaccine to prevent COVID-19 in the United States, CDC is focused on vaccine planning and working closely with health departments and partners to get ready when a vaccine is available.

Learn more about CDC's plans and how we are working with federal, state, and local partners: <https://bit.ly/3ppRU4H>. (CDC-777)

Couched in especially simple, clear language, the second and third most frequent tones observed in CDC posts are persuading (8.2%) and suggesting (6.6%), respectively. Persuading messages seek to convince users to adopt certain behaviours to act as 'good citizens', and use action verbs (Example 4).

Example 4. Main tone of persuading (CDC)

We can all help slow the spread of COVID-19. Practice social distancing by keeping at least six feet of physical distance between yourself and others and wearing a cloth face covering when out for essential trips.

Learn more about staying healthy and protecting your community at www.cdc.gov/coronavirus. (CDC-301)

As one would expect, unlike the informing tone, the suggesting tone appears less neutral and shows an intention to guide users toward actions or decisions that would be beneficial for public health, such as prescriptions limiting the spread of the virus.

On the DHSC Facebook page in the UK, informational posts (52.4%) cover a variety of topics. Some present public health measures or resources, while others deal directly with myths that may be circulating.

Second in prominence on the DHSC page is the imperative tone (19.1% of posts), which focuses on concrete actions that the public health organisation wishes for the public to adopt. These posts often have to do with social and health measures, such as wearing a mask and disposing of it in an environmentally friendly way (Example 5).

Example 5. Imperative main tone (DHSC)

Don't create litter with face coverings or gloves. Share text: You now need to wear a face covering on public transport. Wear a re-usable face covering if you can, but if you do wear disposable face coverings or gloves, always put them in the bin to protect yourself, others and our environment.

Don't create litter when going outdoors.
#StayAlert #Coronavirus (DHSC-397)

The third most prominent tone in DHSC posts is suggesting (12.1%). Most of these posts focus on advice or guidance, for example to help people take care of their physical or mental health. In Example 6, the administrators of the DHSC page normalise the anxiety people feel and the importance of taking care of mental health, while sharing a link to a page containing tips.

Example 6. Main tone of suggesting (DHSC)

Life changes due to the Coronavirus outbreak may cause you to feel anxious and stressed.
Visit #EveryMindMatters for advice on looking after your mental health during this time. <http://nhs.uk/.../ever.../coronavirus-covid-19-anxiety-tips/> (DHSC-214)

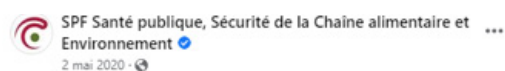
In addition to documenting the visual presentation functions and the main tone of the posts, we also looked at their content.

Main topic addressed in the posts

An examination of the main topics of the posts uncovers what these public health organisations wished to emphasise to the public. As with the main types of posts and the tone adopted, the main topics favoured by each public health organisation are similar in terms of the main topic addressed, and differ to varying degrees in other topics addressed (see Table 27).

The three Facebook pages that we studied extensively address social and health measures, making these the most frequently covered topic, in proportions ranging from 41.4% to 50.7%. While press briefings figure next most prominently in Belgian public health posts, resources for the general public are the second most common in the UK. In the US, a few themes are given similar prominence after the most popular theme, including the current situation, health, and scientific questions. In what follows, we delve more deeply into how each public health agency dealt with the main issues addressed.

A broad proportion of SPF public health posts deal with social and health measures (41.4%), making this the most covered main topic on the Belgian Facebook page. Themes include reminders of good hygiene practices (such as hand washing, wearing a mask) as well



Pour ralentir la propagation du Covid-19 et ainsi prévenir une nouvelle vague, il est important de savoir avec qui les personnes contaminées ont eu des contacts.

👉 Ce suivi des contacts, déjà utilisé pour limiter la propagation d'autres maladies comme la rougeole ou la méningite, est mis en place pour cette nouvelle phase de lutte contre le Covid-19.

Comment cela fonctionne-t-il ? Que dois-je faire si j'ai été en contact avec une personne malade ou si j'ai des symptômes ? Mes données personnelles sont-elles protégées ?

👉 Plus d'information ici : <https://www.info-coronavirus.be/fr/suividescontacts/>

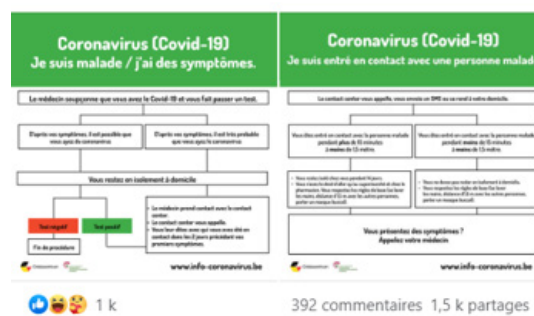


FIGURE 28. Example of a health and social measures topic type (SPF)

Source: <https://www.facebook.com/santebelgique/posts/pfbid0gSToq7NbXsWYSqNdbG-CvmrQo4TvU9g6f4DoqoDFUGQxiCuER9Ug-DrXKdZxhjsuBGI>

as screening and following up with contacts in case of infection (Figure 28).

Main topic	% of posts		
	SPF (n=384)	CDC (n=946)	DHSC (n=1,627)
Current situation	9.1	9.1	2.0
Citizen involvement	2.1	3.5	4.6
Social and health measures	41.4	50.7	49.4
Healthcare staff	0.3	2.4	2.1
Press briefing	29.7	1.0	5.0
Resources for the public	6.8	8.6	21.3
Health	8.6	11.8	9.3
Science behind the pandemic and the virus	2.1	10.4	4.8
Detecting the first cases	0.0	0.6	0.0
Social polarisation	0.0	1.9	1.5

TABLE 27. Main topic addressed in posts on the three public health Facebook pages under study



FIGURE 29. Example of a press briefing topic (SPF)

Source: <https://www.facebook.com/santebelgique/videos/291808268487879/>

A particular aspect of Belgium's health organisations is that press briefings from the authorities broadcast live on the SPF public health Facebook page account for 29.7% of posts (Figure 29). The Facebook pages examined in the UK and US show little or no such content.

The Belgian Facebook page administrators also often created posts dealing with the current situation, as illustrated in Figure 30.

As for the CDC page in the US, 50.7% of their posts deal with social and health measures, making it the most covered topic. Some of the topics covered in these posts include protective recommendations such as social distancing and hand-washing; vaccine information; and instructions on screening and case follow-up.

The second most covered topic on the CDC Facebook page is health, at 11.8% of the posts. These posts mainly give advice or information related to physical or mental health, including advice for specific groups such as parents, pregnant or breastfeeding women (Figure 31), and older people.

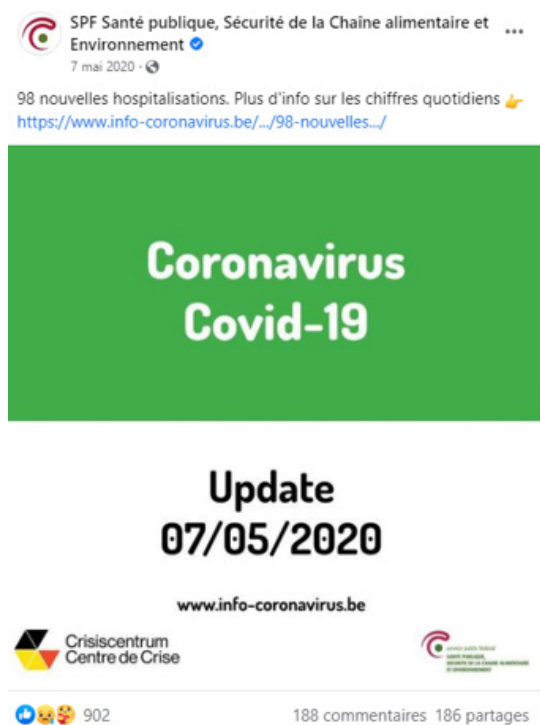


FIGURE 30. Example of a current situation topic (SPF)

Source: <https://www.facebook.com/santebelgique/posts/pfbid09Ly5dVK-WH1J1ytSqb1omC1TgBg4cKoQX3DvkWe-9MiK1VfWbjcQLwaZwVvPMXB3WnI>



FIGURE 31. Example of a health topic (CDC) (CDC-632).



FIGURE 32. Example of a science behind the pandemic and the virus topic (CDC) (CDC-351).

Posts with the main topic of the science behind the pandemic and the virus rank third in terms of frequency, making up 10.4% of all the CDC posts studied. Specifically, they provide information on the spread of the virus (Figure 32), the main symptoms of COVID-19, and the state of research on the subject.

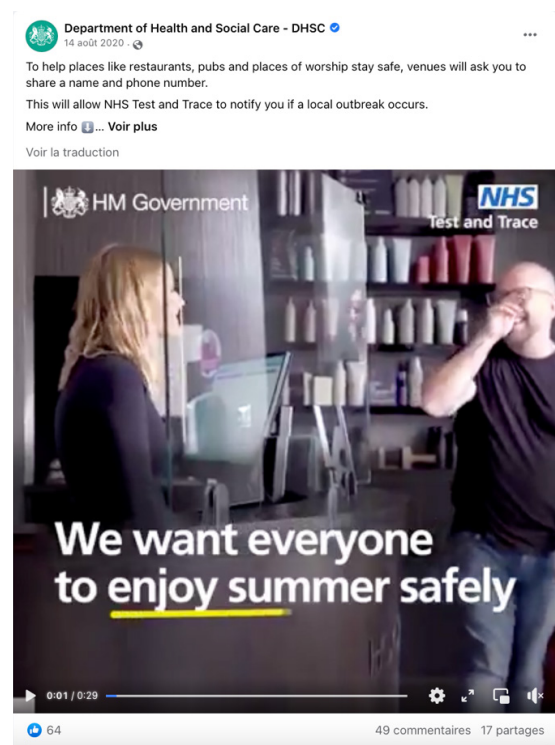


FIGURE 33. Example of a social and health measures topic (DHSC) (DHSC-668)

As in the case of the public health organisations studied in Belgium and US, DHSC posts were primarily concerned with social and health measures (49.4). These posts include hygiene measures to be followed, as well as information on screening and tracing. Figure 33 illustrates a message encouraging the general public to take part in potential efforts to follow up with contacts.

Administrators of the DHSC Facebook page also frequently published posts that they had created and that fell under the resources for the public topic type (21.3%). These resources include online tools, specific apps, and government assistance in the form of new test centres or even boxes of food (Figure 34).

Health-related posts also play an important role for DHSC, accounting for 9.3% of all of their posts. Many of these are intended to be empathetic and to remind users of the importance of taking care of themselves and their loved ones in a difficult time. Some are aimed at the general public, offering physical and mental health advice to help people better get through the pandemic. Others target a very specific audience, such as people with cancer.



FIGURE 34. Example of a Resources for the public topic (DHSC) (DHSC-564).

User comments on the Facebook posts

In addition to studying the posts, we analysed comments made by users of the Facebook pages of the SPF, CDC, and DHSC public health agencies. Our aim was to paint a picture of the different ways in which this communication space has been used by users during the pandemic. Indeed, as Facebook is a communications medium, Facebook pages provide a forum not only for public health agencies, but also for the people who consult them, i.e., users, who can express themselves by sharing information and opinions, or by interacting with other users in the comment

sections. To better understand the strategic communication challenges on social media sites, we also looked at the comments posted by users, who contribute to the content of public health agency pages. First, we sought to identify the communicative intentions of these comment authors. Second, we focused on the different ways in which these messages were delivered, based on categories of user types. The analytical grid for the Facebook comments reviewed is provided in Appendix 3.

Analysis of users' communicative intentions

User comments on posts appearing on public health pages show different intentions. We identified a total of nine communicative intentions, which are detailed below. Since the data were analysed quantitatively to provide a portrait of user comments, we present the results globally rather than by country. These nine communicative intentions consist of the following:

- To criticise;
- To debate;
- To reframe;
- To explain;
- To encourage;
- To propose a solution;
- To support;
- To confide in users; and
- To search and ask

To criticise

Critical comments are frequent on the three public health pages studied. The intention to criticise may be directed at health authorities, political authorities, other users, or health care workers.

Criticism of the public health authorities focuses as much on health measures as on the information provided to the public. In particular, public health organisations are accused of withholding information or taking insufficient action to slow the spread of the virus. Other comments go further, including one from the UK that attacks the competence of the public health organisation, suggesting that the measures they put in place had a hidden agenda of

curtailing rights and freedoms, as in the microchips example (Example 7).

Example 7. Are these tests still 80% inaccurate? Let's all skip the bs & get us all microchipped now eh. (DHSC-186)

Comments critical of the political authorities can be either about the lack of government action to limit the spread of the virus, or about the actual effectiveness of the measures taken. Some users describe the rules as 'ridiculous' and as 'making no sense to anyone', and use statistics to try to lend more weight to their argument (Example 8).

Example 8. The virus is so smart it knows when, where and who to infect so government can have ridiculous rules and mandates that makes sense to no one and then try to push that on to the 99.97% of the population if they would get it to survive. (CDC-829)

In other cases, the attacks are more personal and target the political class in general, or public figures in particular, who are accused of taking insufficient action to counter the spread of the virus. This is the case of Donald Trump, who is accused of being corrupt and responsible for the deaths of COVID-19 sufferers, and of Belgium's Minister of Public Health at the start of the pandemic, Maggie de Block, who is criticised for not caring enough about the elderly, who are more vulnerable (Example 9).

Example 9. Let's not forget MAGGI and her inconsistencies When this dear minister with her exceptional empathy says that this epidemic is only fatal for old people 😊 just let it play out and the minister will be rid of the old dead weight 😞 It's absolutely despicable 😞 (SPF-031)²⁹

Users also criticise certain behaviours of people who do not seem to care enough about COVID-19. Some of them encourage reporting naysayers to the authorities, while others interact with other people who have commented on a post previously (Example 10).

Example 10. Catherine Bresoux de Smeytere when you think of all the doctors and nurses who take risks caring for the sick, what a lack of respect!!!! (SPF-056)³⁰

Some criticism of these workers is aimed at decisions to defer or postpone certain

medical operations. In the US, we also found excerpts where healthcare workers' integrity was challenged. In the example below, workers are accused of inflating death tolls due to the virus, while criticism is levelled at the way the healthcare network is funded (Example 11).

Example 11. You do realize death certificates are federal....right??? So doctor's, nurses, hospital staff are all fudging legal documentation, as in labs, test results, notes to make the hospitals more money and risking their licence and credentials. Stupidity in its finest form. (CDC-783)

Criticism of the media is present, although it varies in intensity from country to country. While some users on all three Facebook pages condemn media coverage as being exaggerated, more virulent criticism can be noted in the UK and the US, where the media are accused of lying when criticising the lack of government action, or of propaganda, acting 'against the people' and creating fear (Example 12).

Example 12. Stupidity. This is being used against the American people. It's a hoax. The media is not giving us truth. They massively inflate the numbers and use it against us. I trust my immune system. I will NOT live in your fear. (CDC-829)

Some of the comments analysed target a particular group, and are often emotionally charged. Particularly in the US and the U.K., some comments are harsher, suggesting a dichotomous 'us versus them' view of society. This kind of vision can also be observed in comments aimed at debate, presented in the next subsection.

To debate

Some users address comments directly to other users, to the healthcare system, or to page managers, with the intention of debating a topic. Many of them use abusive language. Once again, some of these comments, particularly in the US and the UK, reveal a perception that the authorities are engaged in propaganda, or that anyone who thinks differently from them is 'against them'.

Some users argue with the healthcare system without hesitating to use insults. Certain comments contain abusive language and are aimed at the healthcare network and authorities in general. Anger is often the dominant emotion. Among the main criticisms expressed in these debates are inaction (Example 13), overblown action and 'inflated' figures (Example 31), the creation of 'unnecessary fear and panic', and a misunderstanding of the science.

Example 13. I work in a department store, do I really need to put my health at risk so that people can wipe their asses and eat their pasta until June at least? You take NO measures for people who work in department stores, we can just keel over and die, have some balls and do things like in Italy, one small group at a time and time limits... (SPF-056)³¹

We also found a comment aimed at debating public health experts and spokespersons, in this case Belgian virologist and COVID-19 intergovernmental spokesman Steven Van Gucht (Example 14).

Example 14. [...] To date, a total of 1,143 people have died as a result of COVID-19, all of them infected by someone else; if that someone else had worn a mask, how many lives would have been saved? Dare to answer the question, thank you. (SPF024)³²

Users sometimes argue their case at length, at times blaming the other person for doing something wrong or 'lacking knowledge'.

These reproaches can take the form of insults, lectures, or messages that are hammered on again and again. They are often caustic, with the occasional personal attack. Other types of comments adopt a less accusatory tone, more akin to a discussion between users than a form of attack (Example 15).

Example 15. Erika Medene if you do your breathing exercises and stay indoors you may not need a test. A test will only tell you you've got it and then what? The advice for people with the symptoms is to stay indoors and self isolate. So I'm not sure what good it would do to have a test unless you are a frontline worker? (DHSC-062)

On the SPF Santé publique page in Belgium, page managers respond particularly frequently to user questions and comments. While many of these exchanges are cordial and respectful, certain users question the answers they receive (Example 16).

Example 16. SPF Santé publique, Sécurité de la Chaîne alimentaire et Environnement I don't understand where you see controversy. I simply expressed the wish that the public might have access to sufficient information. Unanswered questions are exactly what cause panic. I gather that 'you don't have time.' Best regards. (SPF-021)³³

The tone of the comments, often aggressive or exasperated, varies from one user to another. They put forward disparate opinions. Several people appeared to want to debate a bit of everything, and to sling a few arrows at the political and public health authorities by the same token. Other comments focused more on an individual and a specific subject. The different opinions and beliefs found in the public also appear in the form of comments seeking to reframe situations or problems encountered.

To reframe

In the public health pages of Belgium, the US and the UK, several user comments address issues from another perspective. These comments present a context that leads to a different perception of the information published by the public health organisation in the country in question.

This strategy can be seen in a different understanding of the social, political, and economic problems associated with the pandemic. In the three countries studied, users themselves provide nuances by making comparisons across countries (Example 17). Other users, notably in the US, question the integrity of scientific data and the validity of knowledge originating from the scientific community, as well as Big Pharma, accused of using the pandemic to boost their profits.

Example 17. Yes, 6 million more living in UK. The UK is smaller too.
London population 8 million Rome just under 3 million.
These figures will definitely have a bearing

To explain

Numerous comments testify to a willingness to simply explain to others. For example, they may include additional information on health and social measures, authority statistics, and references to specific resources. Many of these explanatory comments come from users who are essentially trying to provide additional information to help others understand (Example 19).

on how the virus spreads. Each country based on population will vary in how it responds to the virus.

Every country is different culturally and how they are formed geographically. There are loads of elements to consider. I think our scientists are pretty smart and are doing a great job to predict how things will go. (DHSC-93)

We also find comments in which users share personal information, including forms of appeals for help with donations after a job loss or to promote their own platform (Example 18).

Example 18. Use this link to join my WhatsApp group: <https://chat.whatsapp.com/FeOkHWgw1LBDdovMPJGgRO> (SPF-198)³⁴

Some users use various types of reframing to highlight elements that likely correspond to their views and understanding of the situation. Another strategy for commenting on posts is to explain, adopting a more neutral tone than most of the comments presented so far.

Example 19. Julia Marie My wife works in a hospital, believe me people are dying from COVID. The countries that took early precautions have very low COVID deaths. When the deaths are stated as COVID they are, because a coroner cannot put down a false death. (CDC-882)

In contrast with explanatory comments, most of which adopt a slightly more neutral tone, encouraging comments take on a more suggesting or persuading tone.

To encourage

Whether in the public health pages of Belgium, the US, or the UK, we also find comments aimed at encouraging authorities or other users to adopt certain actions or ways of thinking. These comments can take the form of requests, suggestions, questions, discussions, or calls for solidarity.

Varying in their tone and content, the comments classified under this communicative intention are addressed directly to public health authorities. Some include requests for public health organisations to provide clearer information, while others make strong suggestions pertaining to the work of the organisations (Example 20).

Example 20. Hey CDC why are you doing a running count for this virus and not season to season like all the other corona virus out there like the flu? We have known about this virus for more then a single season now. (CDC882)

In the hope of rallying other individuals, some users appeal for solidarity, particularly through collective action aiming to slow the transmission of the virus. Indeed, some users argue that argumentation and discord are useless (Example 21). These examples illustrate some concern for the collective good, mutual encouragement, and public health.

Example 21. Everyone please try to stop arguing, try to show a little compassion. The issue whatever it is exactly, is much bigger than all of us. Everyone squabbling, putting each other down, is not achieving anything. Keep vigilant. (DHSC-952)

Mainly in the US, we found comments aimed above all at rallying other users to defend science. For example, some comments on the CDC page in the US take on a relatively moralistic tone toward those who seem to doubt the veracity of statistics (Example 22) and science.

Example 22. Donna Brewer. The pandemic is real. Even if you doubt the statistics, divide them in half and it's still scary. Do you drive on the wrong side of the road, do you wear your seatbelt, do you let your children play in traffic? Just be safe, follow the guidelines. (CDC-410)

In short, encouraging comments vary substantially in terms of their content and how they appeal to other individuals or the authorities. Some adopt an individual perspective, while others have more collectivist and societal aims. A similar communicative intention, but with the primary aim of providing some form of concrete help or suggestion, is to propose a solution.

To propose a solution

Comments aimed at proposing a solution mostly set out ideas or concrete actions that could be applied to problems or issues raised by the pandemic. These suggested solutions for users or the public health organisations include requests and recommendations.

Public health organisations also receive many suggested solutions that are addressed directly to them. Many of these comments involve solutions linked to health measures or screening (Example 23), as well as proposals for new restrictions to be implemented, such as limiting flights from the worst affected areas.

Example 23. Why not do it like they do it in Korea? Mass screening and distributing masks and hand sanitizer? Is it too expensive? That's sad 😞 (SPF-035)³⁵

A portion of these comments deals with the information given to the public. Some people feel that the public health organisations should provide more information, in particular through more frequent press briefings, while others advocate a form of freedom in letting people decide for themselves what measures to adopt. Still other users suggest that organisations provide more information or positive stories (Example 24).

Example 24. Can we hear from the man in Fulton county and his son that was dx with this virus first? How are they doing? Are they still fighting it? I think we need to hear more about the people that have tested positive and are surviving it! Please!!! (CDC-79)

To support

In the comments section of the public health pages of the three countries studied, many users share comments to express their support. These comments may be addressed to another user, to the public health organisation

and its experts, or to healthcare personnel. These messages generally have a caring tone and take various forms, such as thanks, offers of help, or criticism of negative comments.

Finally, some of the comments concern suggestions about the need to educate people on public health measures and methods, such as how case tracking and screening tests work. One user also draws a link between a lack of information and education on public health measures, on the one hand, and conspiracy theories, on the other (Example 25).

Example 25. I appreciate the CDC but would like to see more widespread messaging and education on not only face coverings but what contact tracing is. The lack of information encourages ignorance and conspiracy theories! (CDC-564)

Some users share ideas with others on how to live better during the pandemic and take care of their physical and mental health. Some of these comments have a spiritual dimension and refer to religious practices (Example 26), while others offer practical advice to help limit the spread of the virus through everyday actions such as appropriately handling soiled tissues.

Example 26. I find prayer is much more effective than this. It allows you to focus on Jesus and you can talk to Him placing your burdens and worries with someone who can bring you peace. Try it, it works. (DHSC-062)

Whereas the tones used to propose a solution are rather neutral, comments intended to support others, the healthcare system, and its professionals are essentially positive in tone.

Many users comment positively on public health organisation posts, supporting the public health organisation and its experts. These messages of encouragement can include acknowledgment, congratulations, and thanks for the information they provide. Other users are even outraged by some of the negative comments left on the public health pages, and emphasise the quality of the work they do. Some supportive comments have political connotations and refer to a 'battle', such as the battle against misinformation and in favour of science (Example 27).

Example 27. Thank you CDC. I know you are under tremendous pressure, especially from our leadership. Fight censure. Continue the fight. Science is important. (CDC-079)

Some users show their support of healthcare staff through direct encouragement or thanks (Example 28).

Example 28. Bless these guys and thank you. You are always on the front line, thinking about others before your own safety. Saying 'thank you' sometimes never seems to be enough but when it comes from the heart its something special. (DHSC-061)

Despite the criticism mentioned earlier, some users express their support for the political authorities, recognising that they are trying to do their best in the circumstances.

To confide in users

Some users use the comments section to simultaneously confide in others and express their views, for example on the health status of their loved ones and their actions (Example 32), or on their own health situation, such as their difficulties getting care and consulting for health problems unrelated to COVID-19.

Specifically, some people thank the government more generally (Example 29), recognising the particularly difficult situation it finds itself in when it comes to making the best decisions. In the US, some users express strong, even unwavering, confidence in their political representatives (Example 30).

Example 29. Thank you. Sincere condolences to families bereaved by the death of a relative. Thank you for the government's efforts. (SPF-143)³⁶

Example 30. I love my Governor. Because of him, I'm living pretty much worry free. (CDC-562)

On several occasions, we also find exchanges between users in the form of support. These empathetic messages express the solidarity of one Internet user with another (Example 31), as well as compassion for those who have lost loved ones. These messages encourage resilience and have caring intentions. It is worth noting that such examples are particularly frequent on the Belgian public health page.

Example 31. Laurence Drabs Courage, I hope everything will work out well for you. (SPF-045)³⁷

These messages of encouragement and closeness to others lead us to certain users' communicative intention to confide in others.

Example 32. My husband has Lung Cancer and don't use ANY PROTECTIVE GEAR. His choice but once he's gone out and about, and comes home, he puts me at RISK as well. I have Health issues too. (CDC257)

Other people express less of a need to confide, asking questions of the public health organisations to get more specific information.

To search and ask

During the pandemic, people in different countries had many questions, which they directed to public health organisations via Facebook. People can question public health organisations directly or ask each other questions.

Some people ask questions directly to public health agencies in their comments, whether about their personal situation—including whether they can go to work depending on their health condition—or about current regulations and health measures (Example 33).

Example 33. Hello, is it currently possible to hold a communion in a catered hall? And how many attendees can we have? Thank you for your reply. (SPF059)³⁸

Other people ask questions about guidelines that sometimes seem contradictory or confusing, particularly surrounding the benefits of wearing a mask. Some users wonder how statistics from other countries, such as China and Italy, are handled. Finally, we found some comments referring directly to conspiracy theories such as those surrounding 5G technologies (Example 34).

Example 34. Are you looking into 5G? Why are so many scientists around the world saying 5g is Dangerous, why have some countries banned 5G? (DHSC93)

Users also approach other people directly for answers to personal situations, such as the need to get tested or to self-isolate. In other cases, the comments area is used to ask

a question that would confirm or refute a user's impressions of information on the virus and the contamination process. Finally, there are questions about the process used to compile public health data (Example 35).

Example 35. Can any one answer this question: How many of the reported COVID deaths are due solely to the COVID virus, without it affecting weakened immune systems or weak internal organs and/or body parts? (CDC-882)

These examples illustrate a desire to go beyond the information provided by the authorities and the media, particularly regarding specific cases or situations that may not have been clearly addressed in communications aimed at a wider audience.

Finally, in this section we have identified nine major communicative intentions behind the comments. The content and tone vary significantly, but we can see that users use this communicative space to voice their views on a variety of topics and to engage with each other. We will come back to the implications and contributions of this analysis in more detail in the conclusion to this section.

Analysis of communicative user types

Through our analysis, we have identified 14 main types of users among the people commenting on the Facebook pages under study. While our analysis of communicative intentions concerned users' messages, our analysis of user types aims to locate them within the social fabric of the platform. In concrete terms, by using Facebook pages and communicating on them, these people position themselves in a particular communicative environment. To better understand the users who make use of the platforms in this way, we have characterised their uses. To do so, we categorised them based on various factors, including the emotion with which they express themselves, the tone of their message, and the extent of their expression (ranging from simple 'likes' to writing several paragraphs). Once again, we present the results jointly for all three of the countries studied. The main communicative user types identified and discussed in the follow paragraphs consist of the following:

- Passive;
- Relaying;
- Critical;
- Advising;
- Exploring;
- Lawyerly;
- Angry;
- Supportive;
- Spiritual;
- Narrow-minded (tunnel vision);
- Fatalistic;
- Grateful;
- Mocking; and
- Directive;

Passive

Passive users write very short comments and refrain from taking sides in debates or giving their opinion. These comments are often limited to a series of emojis (Example 36) or one to three words (Example 37).

Example 36. 🙏🙏🙏 (SPF-026)

Example 37. Scamdemic (CDC-755)

Some users, while remaining relatively passive, transmit slightly more information and are thus categorised as relaying users.

Relaying

We have also observed users commenting on public health pages to relay information intended for other users. Their comments vary in length; some contain a mere link, while others also include a long paragraph. For example, relaying users can redirect users to other websites that may contain texts or videos. Others use tagging to invite people to view the post (Example 38).

Example 38. Jack MJ it isn't complicated 🤔, just the fact that you're over 65 means NO !!!! (SPF-056)³⁹

While the tones we found in this category of users suggested a degree of exasperation with others and the situation, the messages from critical users were more judgmental.

Critical

Some users use the comments section of public health organisation Facebook pages to criticise the authorities, their decisions and their handling of the pandemic, other people, or health staff. Some of these people formulate their criticism or judgement without offering any arguments or reasoning to support their views. This type of critical comment can appear as an insult (Example 39). Several critical comments, however, are not aimed at anyone in particular, but address general issues such as behaviours that fuel the spread of the virus (Example 40).

Example 39. Buy reading glasses! (SPF-007)⁴⁰

Example 40. Avoid spitting on the floor because it's disgusting and dangerous! it's very, very common! (SPF-019)⁴¹

In general, the comments of critical users are often in an imperative tone and include accusations against others or an authority. For their part, advising users also takes an imperative tone, but their main intention is to advise rather than to judge.

Advising

We have observed several comments from users in public health publications in Belgium, the US, and the UK in which they help to advise other people. On several occasions, users refer to Italy's health measures to advise their government to follow suit. Some people share health advice with others, such as what to do if they get sick (Example 41). Others offer more general advice, such as following public health recommendations (Example 42). Finally, some people have suggestions for public health, including getting more information out every day.

Example 41. Taneesha Dixon your body has raised your temperature to fight the virus - don't lower it. Look for Dr John Campbell's videos on the Coronavirus. Vit D may also help. (DHSC-89)

Example 42. I suggest staying home so future holidays can be a possibility. Missing 1 Christmas can save your life literally! Plus another outbreak like Thanksgiving will be catastrophic. (CDC-902)

As we can see, advice may be aimed at a variety of social actors. For their part, the users we have identified as exploring tend to address other users or public health organisations.

Exploring

Exploring users seek additional information or clarification about messages from public health authorities or about the health situation.

For example, they may ask the public health authority to clarify information they did not understand on a website (Example 43), or ask another user for additional information, such as a link to specific information. Alternatively, they might ask a question about their own personal situation, or about the situation in general (Example 44).

Example 43. On your site, you advise us to go to the tropical diseases site. <https://www.wanda.be/fr/a-z-index/coronavirus-2019-ncov> There it says: "If you suffer from a cough or other respiratory problems within two weeks of returning from a country where MERS is present," ==> What is MERS? (SPF001)⁴²

Example 44. Just curious; How many of you personally know or have tested positive of Covid 19 with symptoms? I don't know anyone. My friends don't know anyone either, but when the flu goes around, it seems like everyone gets it. (CDC270)

While this type of user is usually looking for help in the form of information, advice, or an answer to a question, users in the next category are more likely to want to assert themselves and make their own ideas heard.

Lawyerly

Comments from lawyerly users seek to prove their point with the help of arguments. Their comments are therefore generally longer. Some scepticism can also be found among these users. Some doubt what is posted by the public health organisation, and they may call on members of the public to 'wake up'. Similarly, some users may propose alternative visions of the origin of the virus, such as the notion that it was artificially created for financial gain (Example 45). On the other hand, some users act as advocates for public health authorities, or even science, by correcting information they consider erroneous (Example 46).

Example 45. Check out this link and you'll see why the virus was created... Again for money... <https://m.facebook.com/story.php...> (SPF-055)⁴³

Example 46. There is no scientific research supporting the claim that taking high doses of vitamin C could help prevent or cure COVID-19. Both the Centers for Disease Control and Prevention and World Health Organization state that the only way to minimize the chances of contracting the virus is to take preventative steps against infection. (CDC-615)

Several lawyerly users take a stance on various messages, and their political ideologies clearly show through. For other users, anger stands out as the main feature of their messages, rather than sharing a point of view or political vision.

Angry

Angry users are individuals who express their frustration with the main message or a message conveyed in the comments. This type of user may also send messages aimed at the government and public health organisations, accusing the public health organisation of failing to adequately respond to the public's questions (Example 47). We also note some comments with an exasperated tone and criticising other users (Example 48).

Example 47. SPF Santé publique, Sécurité de la Chaîne alimentaire et Environnement you're obviously well versed in the art of ducking questions. Never mind, this is typical administration. (SPF-021)⁴⁴

Example 48. Anick Rochez ... you're just incredible ... I'm sick and tired of all this nonsense!!! The government is doing its job... (SPF-040)⁴⁵

In contrast to all these people verbalising their anger, others demonstrate an attitude of supportiveness through the crisis.

Supportive

On all the public health pages studied, there are comments that take the form of a call for solidarity. Most users who post this type of comment are addressing the general public, although we have found cases where a user directly invites another person to contact them privately. We found several supportive comments recalling health measures and the importance of following them, while also including a word of encouragement (Example 49). Some people also call for solidarity by encouraging compliance with measures to protect others. They may talk about the importance of masking up or not contracting the virus, so as not to overwhelm hospitals.

Example 49. I cheer on the people at SPF Santé Publique! If we all do our part and follow the instructions (don't go out unnecessarily, wash your hands thoroughly after an outing, avoid crowds...)... but above all, continuing to live. The flu kills more people, and there's no need to panic! Wishing everyone a nice day! (SPF-002)⁴⁶

In a spirit sometimes as caring as that of supportive users, spiritual users may also refer to a divine presence.

Spiritual

The messages of spiritual users are imbued with their religious beliefs. Some try to comfort other users (Example 50) or advise them to pray to help get through a difficult time. In most of these comments, God is invoked to save, protect, or help. Additionally, some people call for prayers for caregivers, who work hard to care for the sick.

Example 50. 🇨🇦🇨🇦 Surely He shall deliver you from the snare of the fowler And from the perilous pestilence. He shall cover you with His feathers, And under His wings you shall take refuge; His truth shall be

your shield and buckler. Psalms 91:3-4
Lots of love. 🍷(CDC-045)

In contrast to all these people who show their concern for others and their difficulties, one category of users reacts very negatively to the disruption in their habits.

Narrow-minded (tunnel vision)

Several users, referred to here as narrow-minded (“tunnel vision”) users, dispute the seriousness of the pandemic in their comments on public health posts in Belgium, the US, and the UK. Their objections sometimes take the form of criticism of the measures taken, or of comments deriding those who believe in the existence of the virus (Example 51). Some of these comments contain expressions associated with conspiracy theories, such as ‘global manipulation’⁴⁷ and ‘falling for it’⁴⁸ (Example SPF-054), as well as control by the authorities. There are also people who hold an ‘us versus them’ view of the situation, associating the fight against the pandemic with a form of ideological warfare to control the public (Example 52).

Example 51. You still believe theres a virus??? well, they got you thinking right... hahaha (DHSC-448)

Example 52. Loving the comments. Were winning. Its not about a virus never has. All about control. (DHSC-904)

In addition to downplaying the pandemic, some of them encourage other users to oppose the measures in effect. These calls to opposition take the form of rallying people to a demonstration (Example 53), inviting people to share activist information, or calling for a political figure to resign.

Example 53. Join us in Brussels on August 16 to speak out against the exaggerated panic surrounding the virus. (SPF-059)⁴⁹

While narrow-minded users seem to struggle to see the problems that the pandemic has caused for other people, or even the very existence of the pandemic, fatalistic users

appear to see the pandemic as an insurmountable obstacle.

Fatalistic

In the public health pages’ comments sections, fatalistic users share comments casting the pandemic as being so enormous that it sometimes eludes the government’s ability to act or individuals’ ability to cope. This type of user may argue that the government does not react quickly enough, or go so far as to attribute malicious intent to the government for its lack of action (Example 54). While some continue to recommend total quarantine, or accuse the government of not doing enough to protect the vulnerable, others argue that deaths will inevitably multiply, and that total quarantine would be very detrimental to them personally (Example 55).

Example 54. This GOVERNMENT WANT AS MANY DEAD AS POSSIBLE HENCE NO FULL LOCKDOWN (DHSC-093)

Example 55. There is no way to STOP it from spreading. It will spread thru out the population no matter what we do, staying at home is only slowing the numbers down so the hospitals are NOT overwhelmed. But shutting the entire country down is going to be worse than this virus, as this is going to do is bring in A GREAT depression that will take years and years to get out of 😞 (CDC-130)

Among the fatalists are some people more focused on themselves, and others who appear to be more concerned about others. Some of the latter take the time to express thanks—we refer to them as grateful users.

Grateful

We found many thank-you comments on the three Facebook pages we studied. Grateful users generally post short messages thanking a public health organisation for the information provided (Example 56), as well as health

network personnel for the care and services they have received (Example 57).

Example 56. Thank you to the CDC for all your doing to teach us about this virus . Especially since it's a Novel virus! (CDC882)

Example 57. Thanks to the marvellous efforts of the brave NHS staff (DHSC129)

Marking a departure from these grateful comments are more humorous ones that regularly appear in all three of the countries that we examined.

Mocking

Mocking users use humour, sarcasm, or irony in their comments. Many use this strategy to mock people who refuse to see the gravity of the pandemic (Example 58), or say things that are not supported by scientific evidence (Example 59). Some apparently even enjoy interacting with the conspiracy-oriented comments.

Example 58. Might not be a bad thing.... might do us a favour and slow the fertility rate down and stop Allahs Global takeover (DHSC-093)

Example 59. So many Trump University medical graduates in this thread (CDC-358)

While the comments of these users tend to focus on criticism of what other users are saying, there are also users who more directly respond to other users.

Directive

The directive users that we found in the comments of the three public health Facebook pages that we analysed, mainly set themselves apart by their comments aiming to give orders to other users. In some cases, users invite other users not to comply with public health rules and to not get vaccinated. Others instead encourage users to protect themselves and their loved ones by avoiding going out, or by requesting special permission to exempt their children from going back to school (Example 60).

Example 60. Make a certificate to cover them my children (4) have been at home for 1 week I intend to keep them until it's over!!!! They are protected by the doctor.

These are your children, don't wait for ministers to act, do it yourself, you know what's best for them. (SPF-043)⁵⁰

In sum, the various communicative users of the Facebook pages that we studied display diverse characteristics and intentions that include concern for the well-being of others and their communities, a desire to convince others or to spread conspiracy theories, as well as opposition to social and health measures due to their inconvenience for their personal lives, or difficulty seeing the situation from other points of view. Apart from a few messages with a more neutral tone, often aimed at relaying information, frequently multiple emotions show through in the comments. The anger and exasperation of some users seem to reflect a strong need to be heard, while caring exchanges also lead to supportiveness and moral support between users.

Analysis of public health agencies' Facebook pages

In short, the study of the Facebook pages of three public health agencies (from Belgium, the US, and the UK) sheds light on the ways in which agencies and users use this communicative space.

Our analyses reveal that throughout 2020, the pages were frequently used by all

three agencies to communicate with the public at an average frequency of between one and three times per day. The Facebook interface offers a range of options for sharing messages in the form of posts and how users interact with these posts. These are the choices that we examined when identifying the post type.

Public health agency Facebook posts

Post type

Our study results show that administrators make different choices when it comes to managing their Facebook page. The Belgian public health authority first focused on streamlining the authorities' messages by posting infographics, in particular to offer a simple visual aid depicting social and health measures and resources for the public, in addition to acting as a relay for political and public health authorities by regularly broadcasting live videos of the authorities' press briefings. This strategy may have helped position their public health page as a key source for real-time information on the pandemic.

In the US and the UK, we mostly see official messages or key information adapted to the platform's functionalities. The CDC, for their part, relied on photos to accompany messages, infographics that they created to showcase information, including data on the spread of the virus, as well as videos they produced to present advice to the public. For their part, the UK health authorities worked to distribute videos that they had produced themselves. In addition to the type of visuals chosen, we were also interested in the tone used in the messages.

Main tone used in the posts

The aim of analysing the main tone used was to gain a better understanding of the intentions conveyed in public health organisation messages. Our results showed that most of these posts were intended to inform, although other tones were used to influence user behaviour surrounding the pandemic, including messages of an imperative, suggesting, persuading, or appealing nature. In all cases, the caring and reassuring tones regarding the challenges and obstacles that the pandemic and associated social and health measures

imposed on populations were used very little and, in some cases, not at all. As well as looking at the way a public health organisation conveys its message, we felt it was important to document the topics on which public health authorities wished to express their views.

Main topic addressed in the posts

Our analysis shows that most of the Facebook posts deal with the social and health measures introduced to limit the spread of the virus. Belgium shows the lowest proportion of this topic (41.4% for SPF compared to 49.4% for DHSC and 50.7% for CDC). However, these results should be nuanced, as Belgium also has the highest proportion of posts about press briefings (29.7%). These live videos of health officials are categorised as press briefings instead of under other categories, because they generally cover several topics: in many cases, the briefing covers a situation update, social and health measures, and, in some cases, resources for the public.

Posts dealing with public resources and health issues in the population also figure among the public health concerns in terms of information addressed to the public via the three Facebook pages that were studied. This attests to the major reorganisation of traditional healthcare channels, and to the concerns experienced by populations and that the public health organisations sought to address. Combined, these topics account for approximately 15% to 30% of posts from the three public health organisations, with DHSC being the most active in these areas, reflecting its proximity to the public's concerns about health issues during this particular period.

It is also worth noting that, although the science behind the pandemic and the virus is addressed in 10.4% of CDC publications, it receives less attention from SPF (2.1%) and DHSC (4.8%). This result may seem surprising at a time when the population is coping with a new virus and major scientific developments are underway, notably with a goal of developing a new vaccine.

We also note that three topics that have more to do with the social dimension, or the

day-to-day efforts expended to cope with the impacts of the pandemic, receive little attention from the public health authorities that were studied. Little emphasis is placed on messages about possibilities for citizens to pitch in to the collective effort. However, at a time when people were in lockdowns and established habits were being shaken up, many people wanted to do their part, in keeping with social and health measures (e.g., making masks, delivering groceries, providing moral support to people living alone). Additionally, healthcare personnel are addressed, at most, in only 2.4% of posts (on the CDC page, compared to 0.3% and 2.1% on the SP and DHSC pages, respectively). However, the pandemic hit them hard, and they had to cope with overcrowded schedules and difficult working conditions.

Finally, social polarisation was the subject of less than 2% of the posts on each Facebook page. A review of the comments shows, however, that many people found it difficult to cope with denial of the seriousness of the pandemic, and felt frustrated by the careless behaviour of citizens even as they endeavoured to comply with health and social measures.

In short, while public health agencies made extensive use of their Facebook pages to disseminate neutral, objective information to the public on general health rules, resources, and procedures, other aspects of the pandemic's impact on people's lives received less attention. Notably, this included the impact on social cohesion, the contribution made by healthcare staff and citizens' efforts to mitigate the spread of the virus, and the impact of social and health measures on daily life. In addition to the types of posts, the tone used, and the main topic addressed, we also looked at the extent to which these posts reached a wider or narrower audience.

Reach of the posts

For this part of the analysis, our aim was to see to what extent the posts reached the public. In this respect, it should be noted that the people likely to see the post are those who have chosen to like the respective Facebook page, although this does not guarantee that such posts will always appear in the user's news feed. Our analysis uncovers several findings. First, a high frequency of posting does not mean that each post will reach a wide audience. Although the DHSC published more than the other two pages studied, the reach of their posts did not prove to be any greater, and seems instead to have diluted user attention between posts. Second, the reach varies

according to the level of engagement required of users. Actions requiring the least effort, such as watching a video, achieved a higher reach.

Conversely, actions requiring more engagement and that are more visible, such as comments or sharing a post, were performed by fewer users. Finally, a comparison of mean data shows that not all posts achieved the same reach. A smaller proportion of the posts generated a significant number of reactions of all kinds, while a large proportion of them generated less engagement. It is in this context that we sought to document the comments of users on these pages.

User comments on public health agency Facebook posts

Qualitative analysis of the comments enabled us to better understand the ways in which users used this space to communicate with the three public health organisations or other users. First, we documented users' communicative intentions to better understand the objectives they may have wished to achieve, if any, through their comments. Of course, our analyses are qualitative and derived from an interpretivist paradigm. As is generally the case in qualitative research, our analyses must be approached as inherent to the analysts' subjectivity. Second, we also drew up portraits of 14 types of users, according to the posture that characterised their use of this communicative environment. Both elements highlighted the diversity of messages and individuals, and provided interesting insights into user perceptions of pandemic management and public cohesion.

In terms of analysing the communicative intentions of users and user types, we found that all three countries under study showed the presence of a caring, community-oriented approach, which explained information, proposed solutions, and thanked or supported healthcare professionals or other users. Some

of these comments included reminders not to forget certain people (such as the most vulnerable) or certain professionals and employees in the healthcare network. However, this type of comment seemed to be more numerous on the Belgian SPF public health page, where the comments area appeared to be a place for conversation and support, mainly during the implementation of the first social and health measures.

Although it is difficult to determine the extent to which comments were moderated by page managers, we found that they maintain a significant presence in this communicative space. Personalised answers to comments enable users to obtain clarifications and answers specific to their situation. Moreover, other users sometimes take the initiative to answer based on their own knowledge or simply to offer encouragement to fellow users. We observed caring between users on the DHSC and CDC pages, but to a lesser extent than on the SPF Facebook page.

Other comments, on the contrary, express feelings of aggression and frustration toward the authorities or others, and are

intended, among other things, to criticise or debate. Moreover, some of the negative comments seem to put individual freedom ahead of group well-being. Compared to Belgium, comments on the CDC and DHSC pages seem to slightly more often make critical references to politics, to 'us versus them' struggles, to conspiracy theories, and to funding and revenues, such as those of Big Pharma. Cold and at times caustic in tone, messages with a more negative connotation often reveal more judgmental and closed-minded views. Particularly in the US, some people refer directly to the fight 'for science' in defending the government's measures. With no answers or moderation of such comments from the administrators of the public health pages, users took it upon themselves to respond to these comments, often caustically or mockingly—a strategy likely to fuel further social polarisation.

We also noted a need on the part of healthcare professionals and health network staff to express themselves and be heard by the public health organisations. Some of the users who express themselves in this way seem to feel somewhat 'forgotten' by the more official messages, and would no doubt have appreciated more recognition or inclusion. Finally, many of the comments were also more neutral, aimed at exchanging information, discussing, or explaining the situation to other users.

Thus, the public health agencies in our study have used Facebook pages primarily to inform the population about social and health measures and directives from the authorities, as well as about health issues and related resources available to the public. A study of the comments revealed that users express themselves in a variety of ways and on a variety

of topics. While some of these messages are addressed to the authorities, they also allow for exchanges—more or less respectfully, depending on the circumstances—between users.

Much more than spaces for broadcasting information, Facebook pages are communication platforms where users can express themselves and interact with health authorities and other users. While these behaviours were observed on all pages, it is worth noting that the presence of Belgian public health page managers in the comments areas to answer questions seems to have encouraged this type of exchange, and helped to enlighten users wishing to comply with health measures. What is more, this space for exchange and mutual support shaped the interactions that took place between the users themselves, offering a place for them to support one another through the difficulties inherent in the circulation of a new virus and the introduction of social and health measures.

We feel it is important to point out that people have used this space to disseminate conspiracy theories and information, in addition to encouraging people to mobilise and gather to protest against health measures. The pages of the public health agencies have thus provided a space for showcasing these ideas. On the other hand, users concerned by such comments have taken it upon themselves to intervene to set the facts straight, sometimes by denigrating the users in question—thus further fuelling social polarisation.

RECOMMENDATIONS

As we have seen in this report, managing the global pandemic crisis has brought into play special communication considerations. The health crisis was compounded by a communications crisis that affected the way our societies functioned, and contributed to a major transformation of the social fabric in several countries. The communication, social media, and traditional media ecosystems in place in the three countries addressed in this report influenced the ways in which the pandemic played out. They also had an impact on the resilience of countries wishing to begin repairing the aftermath of the ‘mega-crisis’.

Developing strategic thinking to support NATO allies is a specialty of NATO StratCom, which ‘contributes to improved strategic communications capabilities within the Alliance and Allied nations’.⁵¹ The brief given to the team of researchers behind this report is a supportive measure of NATO StratCom. In concrete terms, the organisation wishes to offer allied countries a better grasp of the communications ecosystem in place during the pandemic, as well as the mechanisms that seem to have shaped it. NATO StratCom also aims to clarify the strategic role of social media in crisis communications so that allies can reflect on how to incorporate them into their strategies.

In line with NATO StratCom’s aim of equipping allied countries to effectively emerge from the global crisis and better prepare for future crises, we conclude this report with a series of recommendations. The recommendations are based on the empirical results presented in these pages and the expertise of its authors. Presented in three parts, our 17 recommendations aim to ensure that, in the event of future crises, the public authorities of NATO allies can:

- Fluidly and coherently operate within the social media communication ecosystem co-constructed by and with the news media;
- Make more efficient use of the omnidirectional potential of social media; and
- Develop ever more effective and coherent health crisis communication strategies, taking into account the particularities of complex crises and the heterogeneity of the various populations targeted by the many messages surrounding public health.

Table 28 presents a summary of our recommendations, which are explained in greater detail on the following pages.

Recommendations for operating more efficiently within the digital ecosystem co-created by and with the news media

Analysis has shown that while media coverage of the crisis was high throughout its first year, it was even more so during crucial periods of the crisis. As a result, we feel it is important for public health agencies to consider the media's need for greater access to information during these periods, to promote

the dissemination of public health messages in the media. Public health agencies should therefore **act as a facilitator in communicating information to the media** at all times, and particularly during these periods of crisis to encourage a more direct journalist-information link by developing a network of experts

Recommendations about the digital ecosystem co-created by and with the news media

- 1 Act as a facilitator in communicating information to the media.
- 2 Encourage a more direct link between journalists and a diversity of public health experts.
- 3 Step up efforts to ensure that issues surrounding people's health remain high on the media agenda.
- 4 Train media-savvy spokespeople who are familiar with the professional considerations of the media.
- 5 Monitor the discursive strategies used by the media during a crisis and anticipate transformations in the discourse and strategies used as the crisis evolves.

Recommendations about the ecosystem co-created by social media

- 6 Use social media to popularise the decision-making processes and scientific principles underlying public health decisions.
- 7 Continue efforts to tailor messages and communication tools to take into account the heterogeneity of audiences and different levels of literacy of populations in crafting messages.
- 8 Develop professional training courses on leading and managing communities online.
- 9 Create a guide on best communication practices during a public health crisis, addressed to community managers.
- 10 Structure communication strategies according to different user profiles.
- 11 Make sure they have dedicated, permanent resources trained in leading and managing online communities and moderate misinformation comments.
- 12 Create a bank of popularised and easily accessible communication material on frequently asked questions that could be shared by users more easily.

Recommendations for better disseminating public health messages in a complex information ecosystem

- 13 Monitor pandemic-related messages to understand the context of public health information.
- 14 Optimise the use of data from social media sites to monitor social trends during a crisis.
- 15 Gear the public health and scientific message according to the trends observed.
- 16 Evaluate communication actions to continually improve strategies throughout the crisis.
- 17 Conduct debriefings after the various crisis stages to help continually improve communication practices.

TABLE 28. Recommendations to public health authorities for communicating in times of a crisis

or facilitating journalists' contact with different types of sources.

Our analysis of journalistic intentions and document authors has revealed that the role of information in newspapers varies from country to country and according to the course of the crisis. Public health agencies therefore need to be aware of the specificities of the media context. Accordingly, public health agencies should **encourage a more direct link between journalists and a diversity of public health experts** to facilitate journalists' contact with different types of sources according to their needs.

Considering the tensions identified in press coverage between the economic, political, and health considerations of the crisis, public health authorities must **step up their efforts to ensure that issues surrounding people's health remain high on the media agenda**. This would keep the focus on the physical risks of the virus and prevent individuals' practices from being guided by considerations other than social and health factors, notably the economic considerations that have occupied a relatively large space in the media coverage.

Since our analyses have shown that health authorities are generally less present in media texts than political or economic actors, more direct channels would benefit from **training media-savvy spokespeople who are familiar with the professional considerations of the media**, including effective self-expression, focused intervention, and how to get a message across. This would better meet the needs of the media environment, which seeks to diversify the experts who contribute to the news.

Our analyses have shown that media discourse on the virus and the pandemic revolves around different discursive models that help shape perceptions of the virus and the pandemic (e.g., personifying the virus or using combat metaphors). While these models can play a beneficial role in helping people to assimilate information at the start of a crisis (e.g., the war against the virus), they also prove difficult to deconstruct after health measures are lifted. In some cases, this can lead to a form of social polarisation. In this context, health authorities should **monitor the discursive strategies** used by the media during a crisis, and **anticipate transformations in the discourse and strategies** used as the crisis evolves.

Recommendations for operating more efficiently within the ecosystem co-created by social media

Crafting public health messages

Our analyses have revealed a need on the part of citizens to better understand decision-making methods and data compilation processes. As the weeks of the crisis went by, we also observed frustration among some users, who accused public health authorities of lacking transparency. We therefore recommend that public health authorities use social media to **popularise the decision-making processes and scientific principles underlying public health decisions**. This could increase people's understanding of the complex issues involved in the crisis and foster a greater sense of trust in public health authorities.

Considering the different communication strategies that public health authorities employed in their online messages, and the user needs observed in the comments, it is apparent that people's level of understanding of messages and needs for information vary according to the audience. We therefore suggest that public health authorities continue their efforts to **tailor messages and communication tools to take into account the heterogeneity of audiences and different levels of literacy (e.g., scientific, digital)** of populations in crafting messages. This would ensure that public health messages are better grasped by more people.

Community management

Considering that the analyses have shown that the authorities needed time to adapt before finding the right tone in responding to comments, we suggest that authorities **develop professional training courses on leading and managing communities online**, courses that would be updated on a regular basis. This way, a trained team can be ready to respond at the very start of a crisis.

For example, our examination of the comments on the Belgian public health page revealed that it is highly responsive on social media sites, helping to defuse problematic situations, reassure the public and answer questions. In this context, we observed a generally more respectful context of exchanges between the users themselves. We therefore recommend that public health authorities **create a guide on best communication practices during a public health crisis, addressed to community managers**, to encourage a

person-centred approach and dialogue, as well as respectful interaction between public health representatives and users.

Analysis of the comments also highlighted the diversity of uses of digital platforms. Far from being a space reserved for critics, this is also a place where people go to find answers and reassurance, or simply to chat and share personal experiences. We therefore recommend that public health authorities **structure their communication strategies according to different user profiles**, both in answers and posts, to better align communications with the needs of citizens wishing to express themselves on the public health authorities' social media pages.

Considering that several comments put forward misinformation and that violent comments were observed between users, we recommend that public health authorities

make sure they have dedicated, permanent resources trained in leading and managing online communities. This would help **moderate misinformation comments** and thereby avoid accentuating social polarisation.

In light of the interactive dimension between users of these platforms and the willingness of many users to relay appropriate information about the virus and social and health

measures, we recommend that public health authorities capitalise on these users by **creating a bank of popularised and easily accessible communication material on frequently asked questions that could be shared by users more easily.** This would provide better control of their message. It would decrease the public health workload and promote the dissemination of rigorous, high-quality, verified information.

Recommendations for better disseminating public health messages in a complex information ecosystem

In addition to the above recommendations, which focus on concrete strategies specific to the communications environment, we believe that it would be beneficial to take into account the nature of different discourses within the global and complex communications ecosystem, to better position communications strategies.

In concrete terms, we recommend deploying resources as well as the following:

- Monitoring pandemic-related messages to understand the context of

- public health information;
- Optimising the use of data from social media sites to monitor social trends during a crisis;
- Gearing the public health and scientific message according to the trends observed;
- Evaluating communication actions to continually improve strategies throughout the crisis; and
- Conducting debriefings after the various crisis stages to help continually improve communication practices.

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APPENDIX 1: MEDIA ANALYSIS GRID

Identification variables			
Newspaper published			
The New York Times	Daily Mail	Le Soir	
The Wall Street Journal	Daily Mirror	Libre Belgique	
USA Today	Daily Express	Het Nieuwsblad	
Month published			
January	February	March	April
May	June	July	August
September	October	November	December
Journalistic variables			
Author type			
News journalist		Opinion journalist	
Press agency		Non-news professional	
Main journalistic intention			
To inform		To reassure	
To raise awareness, appeal to, or advise		To condemn or criticise	
To present testimony		To downplay	
To speculate		To instil fear or dread	
Dramatisation or discursive sensationalism			
Use of discursive strategies to designate the virus or pandemic			
Personification of the virus or pandemic			
Metaphors or analogies for the virus, the pandemic, health measures, or front-line staff			
Comparison with other crises or earlier stages of the current crisis			
Content variables			
Was the text written primarily to address an issue related to the COVID-19 pandemic?			
Yes		No	
Main pandemic-related themes addressed			
The virus and science			
Measures to slow the transmission of the virus			
The pandemic and the adaption of daily life			
The virus and its physical consequences (e.g., number of cases or deaths)			
The virus and its impact on the components of our social systems			
The pandemic and its impact on psychological well-being			
The pandemic and its impact on public leisure			
The pandemic's economic consequences			

Political, diplomatic, and governance considerations related to the pandemic	
The pandemic and social polarisation	
The easing of measures to slow the virus (e.g., end of lockdowns, school reopenings, relaxation of sanitary rules)	
Not applicable	
Actors mentioned in the text	
Politician of the country in which the media is located	International politicians
Public health actors	Elected health officials
World Health Organization (WHO)	Physical health experts
Sports actors	Economic or entrepreneurial actors
Educational actors	Cultural actors
News or social media actors	Social science experts
Frontline or essential workers	Group or movement based on conspiracy theories or extreme right-wing group supporting conspiracy theories
Individuals physically affected by COVID-19	Individuals socially affected by COVID-19
Population vulnerable to the virus	Police forces
Armed forces	NATO

APNDIX 2: FACEBOOK POST CONTENT ANALYSIS GRID

Post reach	
Number of reactions	Number of comments
Number of views (if a video was added)	Number of shares
Post type	
Text only	<i>Graphics interchange format (GIF)</i>
Visual aid (montage, infographic) or photos	Live video broadcast
Pre-recorded video	Share of another post
URL link	
Main tone	
Caring	Informing
Imperative	Persuading
Suggesting	Reassuring
Appealing	
Post topic	
Announcement of new disease, detection of first case	
Current situation (e.g., number of cases, hospitalisations, and deaths)	
The science behind the pandemic	
Citizen involvement	
Social and health measures	
Press briefing (several topics)	
Individual mental and physical health	
Resources for the public	
Social polarisation	
Essential workers, healthcare personnel, military, and law enforcement agencies	

APPENDIX 3: FACEBOOK COMMENT ANALYSIS GRID

Communicative intention		
To criticise		
To debate		
To reframe		
To explain		
To encourage		
To propose a solution		
To support		
To confide in users		
To search and ask users		
User type		
Passive	Relaying	Critical
Advising	Exploring	Lawyerly
Angry	Supportive	Spiritual
Narrow-minded (tunnel vision)	Fatalistic	Grateful
Mocking	Directive	

Endnotes

- 1** Agenda setting is a concept of political sociology entailing that the media orient public debate via their selection of the events reported on (or not) by news authorities. In 1972, the American researchers McCombs and Shaw formulated the principle that the media 'may not be successful much of the time in telling people what to think, but it is stunningly successful in telling its readers what to think about.' (Hubé, n.d.)
- 2** Media framing mainly consists of selection and highlighting. A well-known definition is that of Entman (1993): 'To frame is to select some aspects of a perceived reality and make them more salient in a communicating text, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation for the item described.' (p. 52)
- 3** It should be noted that some of the studies come under an interdisciplinary and international research project entitled *The role of communication strategies and media discourse in shaping psychological and behavioural response to the COVID-19 outbreak*, itself segmented into three diverse and complementary areas of study. This last research project is divided into three stages, namely (1) analysis of the Canadian print media coverage of COVID-19; (2) analysis of the communication strategies of the World Health Organization via the content shared on its Facebook page; and (3) an international online survey of perceptions specific to COVID-19.
- 4** The actors studied were the following: political actors (federal, provincial, municipal), health actors (public health, health minister, WHO, health specialists), social actors (media, arts and culture, sports, law enforcement, social specialists, economic actors), and groups 'created' by the pandemic (essential workers, vulnerable populations, conspiracy groups, socially affected people, physically affected people).
- 5** Discursive strategies include the use of direct or indirect quotations, the rhetoric used, the communicative intention (e.g., to inform or to convince), and the authors' self-staging strategies. For more on the specific characteristics of each discursive process, see the *Procédés discursifs* section of the article *La pandémie vue par les médias écrits: Analyse de la couverture de la COVID-19 par des quotidiens canadiens* by Champagne-Poirier et al. (2022). Table 6.4 on page 143 of the article by Champagne-Poirier et al. (2023) also provides an accurate picture of the key characteristics of each strategy employed.
- 6** Keeping in mind that this statistical study is part of a broader multidisciplinary research project, more details about the purposes, objectives, and methods of this extensive project can be found in Généreux et al. (2021b and 2020).
- 7** To learn more about the explanations put forward by the research team for this finding, we invite you to consult the Discussion section of the article *The Evolution in Anxiety and Depression with the Progression of the Pandemic in Adult Populations from Eight Countries and Four Continents* by Généreux et al. (2021a).
- 8** Eureka was used to collect text from Belgian newspapers while ProQuest was used for newspapers in the US and the UK.
- 9** These were determined by a process that involved selecting a random number of posts and then analysing all of the comments.
- 10** All French-language or Dutch quotations, posts, and comments in this text have been freely translated from French or Dutch into English.
- 11** 'In het Dendermondse ziekenhuis Sint-Blasius liggen 62 patiënten die besmet zijn met corona. Acht van hen liggen op de afdeling

- intensieve zorg. Er vielen tussen woensdag- en donderdagochtend drie overlijdens te betreuren in Sint-Blasius. Er verblijven in het ziekenhuis ook nog vijf mensen met symptomen die nog afwachten of hun Covid-19-test positief is.’ (‘Drie coronapatiënte overladen’, 2020)
- 12** ‘Ines Scheldeman (22) zou morgen pas het vliegtuig terug naar huis nemen. “Maar ik ben afgelopen weekend al teruggevlogen. Ik had vooral schrik dat ook onze stad een lockdown ging meemaken en dat ik China niet meer zou kunnen verlaten.”’ (‘Ines Scheldeman: “Ik had meer schrik van de lockdown dan van het virus zelf”’, 2020)
- 13** ‘[...] s’il se fiche à ce point du Covid-19 qu’il fait fi des conseils de prudence et des mesures prophylactiques largement médiatisés, il met bel et bien (potentiellement) la vie des autres hommes en péril – en étant, par exemple, porteur sain mais vecteur de la maladie’ (Bourton, 2020).
- 14** ‘Het coronavirus beslist welke richting we uitgaan.’ (‘Drukke pistewinter behoort tot de mogelijkheden’, 2020)
- 15** ‘We hebben wel het idee dat we de strijd aangaan met een sterke tegenstander’ (Lescrauwaet, 2020).
- 16** ‘Maar zodra België in lockdown ging, beseften we dat het meer was dan zomaar een griepje.’ (Dewagenaere, 2020)
- 17** “‘Tijdens de eerste lockdown zagen we overal witte vlaggen voor de mensen in de zorg en ik heb volste respect voor deze mensen”, vertelt Soraya. “Maar deze lockdown is een zeer zwarte en zware periode voor de zelfstandigen. We zijn in de rouw. Daarom hing ik een zwarte vlag aan mijn winkel. En ik roep alle zelfstandigen op om hetzelfde te doen.”’
- 18** ‘En Chine, d’où est partie l’épidémie fin décembre, le virus a tué 2 791 personnes. Dans le reste du monde, 67 personnes en sont décédées.’ (Agence France-Presse, 2020)
- 19** ‘On s’attendait à une belle percée, le titre de Premier ministre étant porteur et la crise du coronavirus l’ayant propulsée en première ligne, sur tous les écrans et dans tous les journaux: Sophie Wilmès est la personnalité qui cartonne dans notre Grand Baromètre.’ (Leurquin, 2020)
- 20** ‘De thuiswedstrijd van vanavond tegen Kangoeroes Mechelen is uitgesteld naar een nog te bepalen datum wegens drie positieve coronagevallen bij Oostende. Na Haris Bratanovic en Servaas Buyschaert is nu ook Pierre-Antoine Gillet besmet.’ (‘BASKETBAL FILOU OOSTENDE De thuiswedstrijd van’, 2020)
- 21** ‘We overwegen om het in de huidige fase te testen op onze verplegers en dokters omdat zij wel nog een relatief risico lopen om besmet te geraken.’ (Vancaeneghem, 2020)
- 22** ‘Hübers, qui aurait été infecté lors d’un événement à Hildesheim samedi, est en quarantaine à son domicile et n’a eu aucun contact avec ses équipiers depuis’ (United Kingdom News Agency, 2020b).
- 23** ‘Na een algemene testing blijken 37 bewoners en personeelsleden van woonzorgcentrum Andante in Menen besmet met corona.’ (‘37 coronabesmettingen in woonzorgcentrum Andante’, 2020)
- 24** ‘Van de 60.875 bedrijven met een zetel in Antwerpen-Stad riskeert een op de zes de economische gevolgen van de coronacrisis niet te overleven zonder bijkomende steun.’ (‘Een op de zes Antwerpse bedrijven overleeft corona niet’, 2020)
- 25** ‘Le Premier ministre italien Giuseppe Conte a appelé lundi soir tous les Italiens à “éviter les déplacements” sur le territoire national pour endiguer l’épidémie de coronavirus, et a ordonné une “interdiction de rassemblement”.’ (‘Lits disponibles’, 2020)
- 26** “‘En temps normal, c’est moi qui organise toute ma vie en fonction des enfants. Ici, c’est [mon mari] qui a organisé son travail

en fonction du mien. ” Virginie Blocteur est infirmière au CHR de Verviers. Elle qui faisait auparavant des horaires de jour a été affectée à l'unité Covid' (Blogie, 2020).

27 Suite à la propagation du coronavirus COVID-19, beaucoup de professionnels des soins de santé souhaitent mettre leur expérience à profit pour venir en renfort dans les établissements qui ont besoin d'un soutien sanitaire supplémentaire. Ils pourront dès à présent passer via la Cocom et la Cocof afin de s'inscrire dans une réserve pour apporter leur aide dans la région de Bruxelles-Capitale.

<http://www.iriscare.brussels/.../coronavirus-appel-en.../> (SPF - 102)

28 Coronavirus (Covid19): Masques à donner ?

Vous avez des masques chirurgicaux, FFP2, FFP3 ? Vous pouvez aider nos soignants en les apportant à votre hôpital local.

Vous souhaitez en confectionner? Nous travaillons à un mode d'emploi pour vous y aider. Nous le partagerons dès que possible. #ensemblecontrecorona (SPF - 62)

29 Faudrait pas oublier MAGGI et ses incohérences Lorsque cette chère ministre avec son empathie exceptionnelle dit que cette épidémie est uniquement mortelle pour les vieux 😊 en fait laissez faire et la ministre sera débarrassée des vieux encombrants 😞 C'est absolument abjecte 😞 (SPF-031)

30 Catherine Bresoux de Smeytere quand on pense à tous ces médecins et infirmier(ière)s qui prennent des risques en s'occupant des malades, quel manque de respect!!!! (SPF-056)

31 Je bosse en grande surface, c'est vraiment nécessaire que je risque ma santé pour que les gens se torche le cul et mange au moins jusque juin avec leur pâtes? Vous ne prenez AUCUNES mesures pour les gens qui travaille en grande surface, on peu juste crever la bouche ouverte, prenez vos couilles en main et faites comme en Italie, petit groupe par petit groupe et durée limite.. (SPF-056)

32 [...] A ce jour 1.143 personnes au total sont décédées des suites du covid-19 , elles ont bien toutes été infectée par quelqu'un d'autre, si cet autre avait porté un masque, de combien de vies sauvées parlerions nous ? Osez répondre à la question, merci. (SPF-024)

33 SPF Santé publique, Sécurité de la Chaîne alimentaire et Environnement Je ne comprends pas où vous voyez des polémiques. J'ai simplement exprimé le souhait que suffisamment d'informations soient mises à disposition de la population. Les phénomènes de panique sont précisément alimentés par les questions sans réponses. Je retiens que "vous n'avez pas le temps". Cordialement. (SPF-021)

34 Utilisez ce lien pour intégrer mon groupe WhatsApp: <https://chat.whatsapp.com/FeOkHWgw1LBDdovMPJGgR0> (SPF-198)

35 Pourquoi ne pas faire comme en Corée ? Dépistage massif et distribution de masques et de gel hydroalcoolique ? Ça coûte trop cher ? Et bien c'est triste 😞 (SPF-035)

36 Merci. Sincères condoléances aux familles meurtries pas le décès d'un parent. Merci pour les efforts du gouvernement. (SPF-143)

37 Laurence Drabs Courage j'espère que tout ira bien pour vous. (SPF-045)

38 Bonjour, Actuellement peut on organiser une communion dans une salle avec traiteur? Et avec quel nombre maximum,? Merci pour votre réponse. (SPF-059)

39 Jack MJ c'est quand même pas compliqué 😊, rien que le fait que tu aies plus de 65 ans c'est NON !!!! (SPF-056)

40 Acheter des lunettes pour lire ! (SPF-007)

41 Eviter de cracher par terre ce serait bienvenu car c'est dégueu et dangereux! 😞 c'est très très fréquent ! (SPF-019)

42 Sur votre site, vous nous conseiller

d'aller sur le site des maladies tropicales.
<https://www.wanda.be/fr/a-z-index/coronavirus-2019-ncov> On peut y lire notamment : “Si vous souffrez d’une toux ou d’autres problèmes respiratoires dans les deux semaines suivant votre retour d’un pays où le MERS est présent, “ ==> C’est quoi le MERS ? (SPF-001)

43 Allez voir ce lien et vous verrez pourquoi on a créé ce virus... Encore pour du fric... <https://m.facebook.com/story.php...> (SPF-055)

44 SPF Santé publique, Sécurité de la Chaîne alimentaire et Environnement visiblement vous êtes bien rodés dans l’art d’éluider les questions. Pas grave, c’est typique l’administration. (SPF-021)

45 Anick Rochez ... vous êtes juste incroyables ... j’en ai ras le bol de toutes ces âneries !!! Le gouvernement fait son boulot ... (SPF-040)

46 je souhaite beaucoup de courage aux personnes du SPF santé publique ! Si nous tous y mettons du nôtre et appliquons les consignes (ne pas sortir inutilement, se laver les mains scrupuleusement après une sortie, éviter les bains de foule...) mais surtout continuer à vivre. La grippe tue plus et il n’y a pas de panique ! Passez tous une bonne journée ! (SPF-002)

47 “manipulation mondiale” (exemple SPF-054)

48 “tomber dans le panneau” (exemple SPF-054)

49 Tous à la manif le 16 août à Bruxelles pour dénoncer l’affolement exagéré autour du virus. (SPF-059)

50 Faites un certificat pour les couvrir mes enfants (4) sont à la maison depuis 1 semaine je compte bien les garder jusqu’à la fin !!!! Ils sont protégés par le médecin. Se sont vos enfants n’attendons pas que les ministres agissent faites le vous-même savez celui est mieux pour eux. (SPF-043)

51 https://stratcomcoe.org/about_us/about-nato-stratcom-coe/5



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