Infodemic

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Abstract

In 2020, the term 'infodemic' rose from relative obscurity to popular metaphor and was used by journalists, academics, and policymakers during the early months of the COVID-19 pandemic to describe the perils of fast, wide-spreading false information about the COVID-19 pandemic and as a shorthand to refer to mis- and disinformation more broadly. This entry offers a definition of the term and traces the origin and use of the 'infodemic' metaphor since its coinage in 2002, with a special focus on its use during the SARS outbreak 2002-2004 and the COVID-19 pandemic in 2020. We provide an overview of the most important literature published on the topic, a critique of the term, and a discussion on the salience and problematic uses of the same.

Keywords: Infodemic; COVID-19; Information environment; Public arena; News consumption, Metaphor

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Introduction

The term – or more specifically, the metaphor – 'infodemic' was first used in 2003, when political analyst David J. Rothkopf coined it in a commentary for the Washington Post in the context of the severe acute respiratory syndrome (SARS) outbreak. But it was only in 2020 that the term rose from relative obscurity to international prominence during the early days of the COVID-19 pandemic. It first appeared in a World Health Organisation (WHO) situation report in February 2020. 'The 2019-nCoV outbreak and response', the WHO wrote at the time 'has been accompanied by a massive "infodemic" – an over-abundance of information – some accurate and some not – that makes it hard for people to find trustworthy sources and reliable guidance when they need it' (WHO, n.d., 2020).

WHO Director-General Tedros Adhanom Ghebreyesus re-iterated the sentiment two weeks later, saying 'We are not just fighting an epidemic; we're fighting an infodemic. Fake news spreads faster and more easily than this virus, and is just as dangerous' (Ghebreyesus, 2020) In the following months, journalists and scientists embraced the term, discussing the 'infodemic' from all possible angles, from healthcare to AI and social media to the importance of libraries. While interest somewhat levelled off with the end of the acute COVID-19 pandemic in 2023, the concept still sees frequent use. In this entry, we discuss the history of this term, the many contexts where it has been used, discuss its strengths and many flaws as a metaphor, and the state of the empirical evidence on the matter.

History of the Term: The Rise and Use of 'Infodemic'

Public health emergencies have long been accompanied by rumours and a deluge of information of varying quality about their origins, spread and interventions. While Eysenbach (2002) is generally credited with creating the term 'infodemiology' to describe the study of 'the determinants and distribution of health information and misinformation' and later, attempts at digital disease detection, the linguistic relative 'infodemic', however, is generally ascribed to Rothkopf (2003) who initially used it to denote a situation where 'a few facts, mixed with fear, speculation and rumor, amplified and relayed swiftly worldwide by modern information technologies' affect economies, politics and security. While Rothkopf coined the portmanteau in the context of the SARS outbreak, he also saw the term as having wider applicability, for instance, in the 'response to terrorism [events] and even to relatively minor occurrences such as shark sightings' (Rothkopf, 2003).

Yet, the term did not see widespread uptake in the following years. According to Google Trends, search interest for 'infodemic' was mostly absent in the period from 2004–2020, but rapidly rose in prominence after the WHO adopted it in February 2020. Since 2020, most uses of 'infodemic' seem to ignore the term's original meaning and instead loosely adhere to the definition set out by the WHO in February 2020. In news articles, 'infodemic' was often used to describe Coronavirus-related mis- and disinformation, its

spread, and possible effects and to frame the responses of technology companies, or various other stakeholders including civil society to the same (Simon & Camargo, 2021). With a few notable exceptions, journalists seem to have treated the existence of an 'infodemic' as a given, refraining from questioning the term's applicability or usefulness, or any in-depth discussion of its merits. Instead, the 'infodemic' predominantly seems to have been used as a hook, point of reference, to frame the pieces in question, or to describe a deluge of (mis)information, panic, and uncertainty around COVID-19.

As a concept, 'infodemic' clearly resonated well with multiple audiences, evidenced by how it had quickly been adopted by stakeholders from multiple fields, including the United Nations, the UK Royal Society, and academia. Until the end of 2019, the total number of entries on Google Scholar containing the term 'infodemic' amounted to 54. Between 2019 and 2023, this number rose to over 23,000, including articles in fields as diverse as data science, media and communication, and cardiovascular medicine. While these numbers cannot claim to be representative, they provide some indication of the general salience of the term and its use in academia as well as in (elite national) media publications which still somewhat influence the agenda of other media, thus ultimately also shaping the wider public arena and public discourse (Schroeder and Jungherr, 2021). And it would be hard to argue that this development has not been useful, even if just to bring a global community of experts together and to prime them to think of solutions to rein in the spread of medical mis- and disinformation and ensure the circulation of accurate information during the pandemic's early days. Yet, as we explain below, the drawbacks of the indiscriminate use of this term cannot be ignored.

Research and Critique

The study of metaphors has a long and rich history spanning diverse fields such as philosophy, linguistics and cognitive science. Their impact and use around diseases has been studied by various scholars, for example, on cancer and AIDS (Sontag, 1989), or more recently on framing the swine flu, and the Zika crisis in Brazil (Ribeiro et al., 2018). Following Lakoff (1993), Slupska argues that metaphors are central to human cognition and have a causal role in partially 'determining an agent's judgements or choice behaviour' (2020: 3) – the agents in this case being, for example, journalists or policymakers. As descriptive figures of speech, metaphors 'generate mental models that carry over associations from one domain to another' but other than analogies, which compare two objects, concepts or phenomena, metaphors go further by asserting that *A is B* (Slupska, 2020: 5). Given its widespread use, 'infodemic' would likely fall into what Slupska terms strong metaphors: 'commonly in use, rich in background implication, and strong in the sense that they create a more powerful link than mere comparison.' (2020: 3). These strong metaphors are constitutive, creating mental models for what they describe: in this case, for example, that (mis/dis)-information is and spreads like a virus, and infects and affects people like a disease. Various authors have highlighted the uses of metaphors. Lakoff (1993), for instance, emphasises that 'metaphors [are] the main mechanism through which we comprehend abstract concepts and perform abstract reasoning' (p. 244), thus allowing us, for example, to solidify

'ambiguous dangers into tangible threats' and to 'focus attention on particular issues and frame those issues in ways that demand specific solutions' (Draper, 2020: 7). Draper further argues that metaphors also afford the opportunity to 'make chaotic situations feel controllable' (2020: 8) – all aspects that arguably apply here.

Epidemiological metaphors, such as 'infodemic' for communicative issues are by no means a new phenomenon. They also quickly run into problems. First, *real epidemics have a well-defined cause*, such as a virus whose strains can be sequenced, identified, and traced back to their origins. The spread of information, on the other hand, often involves multiple independent sources: different actors create and disseminate information with multiple intents, aiming to inform, promote alternative versions of a story, and in some cases to harm. This makes it difficult to say what should count as the 'infodemic' and what should not – which is again related to the conflation between 'infodemic' and terms such as mis/disinformation.

Second, *(mis)information is not infectious*. This, too, is an idea with a long history. According to this narrative, people are susceptible to 'viruses of the mind', as the British evolutionary biologist Richard Dawkins would put it, and information and ideas would spread from person to person like pathogens. As attractive as the idea sounds, it ignores a large body of research in cognitive science that demonstrates how humans actively choose what information to consume, what to believe, what to share and whom to share it with (Mercier, 2020: 17). Contrary to popular belief, humans are not simply 'infected' with information.

A third issue is that *information does not spread like an epidemic*. Certain pieces of information spread in a broadcast fashion, like news articles or tweets. Others diffuse more slowly, and from person to person, and depend on all sorts of social behaviour in their spread. To put it simply*, fast and wide do not imply viral*: the spread of information looks often quite different from the gradual person-to-person contagion of germs or viruses (even when one takes super-spreaders into account) (Cheng et al., 2018). While models from epidemiology can be useful in understanding the spread of information, this should not be taken as evidence that pieces of information generally behave like viruses.

Moving from a look at the conceptual usefulness of the 'infodemic' concept, it make sense to briefly investigate the central claim associated with it: that the 'over-abundance of information' during a pandemic 'makes it hard for people to find trustworthy sources and reliable guidance when they need it', as the WHO claimed. Evidence from the COVID-19 pandemic suggests that this claim should also be taken with caution. Information abundance is a common feature in modern media environments and while many people *perceive* information overload, research has also found that many seem to cope well with it (Nielsen et al., 2020) and that overload as a phenomenon is more nuanced than many care to admit (Bawden & Robinson, 2020). The reason we can still function in societies with 24/7 timelines and newsfeeds is

because we are good at being selectively attentive and have developed multiple cognitive strategies to deal with too much information over time (Mercier, 2020).

Overabundance of information, often of conflicting nature, is a common feature in modern high-choice digital media environments, where traditional media are now competing with a multitude of other digital information sources. It is also a common feature of crisis situations and was the case at several points during the COVID-19 pandemic. Yet, various studies conducted during the pandemic suggest that overall, many people had a fairly good idea of where to look for reliable information, e.g. by turning to established news sources or health experts (Altay et al. 2022). Respondents in various countries stated that the news media had helped them understand the crisis (Nielsen et al., 2020) better, expressed high levels of trust in (health) experts, scientists and health organisations, and said that these helped them to make sense of the situation. Two studies in the UK and Netherlands found that people engaged in selective news avoidance, not because they did not want to be informed, but to balance informedness with mental well-being (de Bruin et al., 2021). While all this likely did not apply equally to every country and while studies have various limitations, overall, the evidence points against the 'dangerous information overload' hypothesis promulgated as part of the 'infodemic'.

More research will be necessary to understand the consequences of the information environment during the COVID-19 pandemic. Still, the evidence from cognitive science and recent communication research suggests that any claims that an infodemic during the COVID-19 pandemic existed or caused major problems should be seen with scepticism. Likewise, these studies cast doubt on the assertion that 'infodemic' is a useful theoretical concept in the social sciences.

References

Altay, S., Kleis Nielsen, R., & Fletcher, R. (2022). Quantifying the "infodemic": People turned to trustworthy news outlets during the 2020 coronavirus pandemic. *Journal of Quantitative Description: Digital Media*, *2*. https://doi.org/10.51685/jqd.2022.020

Bawden, D., & Robinson, L. (2020). Information Overload: An Introduction. In *Oxford Research Encyclopedia of Politics*. https://doi.org/10.1093/acrefore/9780190228637.013.1360

Cheng, J., Kleinberg, J., Leskovec, J., Liben-Nowell, D., Subbian, K., Adamic, L., et al. (2018). Do diffusion protocols govern cascade growth? *Twelfth International AAAI Conference on Web and Social Media*.

de Bruin, K., de Haan, Y., Vliegenthart, R., Kruikemeier, S., & Boukes, M. (2021). News Avoidance during the COVID-19 Crisis: Understanding Information Overload. Digital Journalism, 9(9), 1286-1302. https://doi.org/10.1080/21670811.2021.1957967

Draper, N. A. (2020). Metaphors of Visibility: Rhetorical Practices in the Normalization of Individual Online Image Management. American Behavioral Scientist, 0(0), 1–19. https://doi.org/10.1177/0002764220945354

Eysenbach, G. (2002). Infodemiology: The epidemiology of (mis)information. The American Journal of Medicine, 113(9), 763–765. https://doi.org/10.1016/S0002-9343(02)01473-0

Ghebreyesus, T. A. (2020). WHO Munich Security Conference. Munich. Retrieved July 23, 2020, from https://www.who.int/dg/speeches/detail/munich-security-conference

Lakoff, G. (1993). The Contemporary Theory of Metaphor. In A. Ortony (Ed.), Metaphor and Thought (pp. 202–251). Cambridge: Cambridge University Press.

Mercier, H. (2020). Not Born Yesterday: The Science of Who We Trust and What We Believe. Princeton: Princeton University Press.

Nielsen, R. K., Fletcher, R., Newman, N., et al. (2020). Navigating the 'Infodemic': How People in Six Countries Access and Rate News and Information about Coronavirus. Reuters Institute Report. Oxford: Reuters Institute for the Study of Journalism. https://reutersinstitute.politics.ox.ac.uk/infodemic-how-people-six-countries-access-and-rate-news-and-information-about-coronavirus

Rothkopf, D. J. (2003, May 11). When the Buzz Bites Back. Washington Post. Retrieved from http://www1.udel.edu/globalagenda/2004/student/readings/infodemic.html

Ribeiro, B., Hartley, S., Nerlich, B., et al. (2018). Media coverage of the Zika crisis in Brazil: The construction of a 'war' frame that masked social and gender inequalities. Social Science & Medicine, 200, 137–144. https://doi.org/10.1016/j.socscimed.2018.01.023

Jungherr, A., & Schroeder, R. (2021). *Digital Transformations of the Public Arena.* Cambridge University Press.

Simon, F. M., & Camargo, C. Q. (2021). Autopsy of a metaphor: The origins, use and blind spots of the 'infodemic'. *New Media & Society*, *25*(8), 2219–2240. https://doi.org/10.1177/14614448211031908

Slupska, J. (2020). War, Health and Ecosystem: Generative Metaphors in Cybersecurity Governance. Philosophy & Technology. https://doi.org/10.1007/s13347-020-00397-5

Sontag, S. (1989). AIDS and Its Metaphors. New York: Farrar, Straus and Giroux.

World Health Organization. (2020). Novel Coronavirus (2019-nCoV). Situation Report - 13. Geneva: World Health Organization. Retrieved from https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200202-sitrep-13-ncov-v3.pdf