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ESSAY

Trying to make sense out of chaos: science, politics and the COVID-19 pandemic

As tentativas de explicar o caos: a ciência, a política e a pandemia da COVID-19

Intentos de explicar el caos: ciencia, política y la pandemia de COVID-19

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Abstract

This essay discusses the proliferation of discourses about the COVID-19 pandemic, presenting the challenges both to science and public policies that such an information overload present, having Collins' sociology of expertise as a theoretical framework.

Science; Communications Media; Internet; Social Media

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The past as prologue

"*What experience and history teach is this – that peoples and governments have never learned anything from history, or acted on principles deduced from it*" (Georg Hegel).

Addressing the UN General Assembly in 1987, Jonathan Mann, then director of the Special Programme on AIDS, made the historical remark about the three epidemics [1]: first the propagation of the virus itself, then the irruption of the disease, and finally the social, cultural, economic and political reactions. Mutatis mutandis, this is a reference framework that could be applied to the current pandemic, albeit the second epidemic is not so distant from the first as it was with HIV and AIDS.

In this essay, the focus is on the third epidemic, an epidemic of meaning, borrowing from the analysis made by Paula Treichler in the heart of the storm, in her aptly titled book *How to Have Theory in an Epidemic* [2]. She pointed out how the social dimensions of the AIDS epidemic were far more relevant than one might think, even when acknowledging the central role of biomedicine in the response of that other pandemic. Treichler at one point lists 38 different meanings attributed to AIDS, ranging from the absurd to the outrageous, many of which could apply to the present situation [2]. Leveraged to support discrimination, used as a sort of pedagogic resource to put forward moral theses, and rife with conspiracy theories, those were ideas that circulated wildly in the media then. Similar cultural and mediatic processes are taking place now with COVID-19, the biggest difference with the present is, obviously, the massive presence of Internet-mediated social networks, which were still in its infancy back then.

The proliferation of narratives creates a crowded field, making much harder the task of making sense of the prevailing cacophony and finding trustworthy guidelines for action. This is an attempt to reflect about this situation, albeit having in mind a caveat about the risk of bringing critical reflections to such an unstable landscape, as pointed out in a quite satirical piece recently published in the academic blog Somatosphere: "*in the haste to manufacture mental personal protective equipment against the Coronascene, it is all too easy to make mistakes, to mass produce instead fatuity, guesswork, and irrelevance*" [3].

Epidemic information

"*Too much information running through my brain, Too much information driving me insane*" (Sting).

A common trope on the recent literature about the new pandemic is the excess of information, especially bad or incorrect, about it, creating what some have called an "infodemic" [4,5,6,7,8,9,10,11].

Internet-mediated social networks, such as Facebook, Twitter, Reddit, YouTube and others, have played a large role in this process. Unlike traditional mass-media, unidirectional in its interaction and with a restricted number of information providers, the new media allows for multiple voices, with little to no curation, lending itself to the propagation of misinformation, in particular health-related. The number of users of such networks has expanded exponentially all over the world, and become the prime source of information for increasingly more people, whereas trust in traditional media has been shown to decrease over the years – a Gallup poll in 2016 showed that only 32% of the American population trusted the mass media to provide accurate information [12].

Of particular interest are conspiracy theories related to the pandemic, which were analyzed by Singh et al. looking at exchanges over Twitter [5]. They grouped the main myths in five clusters, in decreasing order of frequency:

(i) Origin of COVID-19 – it is a bioweapon, with no proof; culprits are the US or Chinese governments, or Bill Gates;

(ii) Flu comparison – it is just the flu and/or not worse than it;

(iii) Home remedies;

(iv) Heat kills disease; and

(v) Vaccine development – already exists and is being hidden, or is already available; other vaccines will cure it; a vaccine will cause the disease.

References to the first cluster had more than twice the frequency of the second, showing its relative relevance in the overall conversations. Similar ideas were present (and maybe still are) with regard to HIV/AIDS, and were part of Treichler's aforementioned list, with varying culprits (shady govern-

mental agencies, Big Pharma, ancient plagues). Incredible or even laughable as they seem, the latter author reminds us that they are part of the epidemic of signification, pointing out to what is deemed relevant by different groups [2].

Much of those "theories" mimic to a certain extent scientific discourse, although deliberately distorted to fit some agenda [13]. Despite much of the existing literature about such distortions being about economic stakeholders [13,14,15], all kinds of political and ideological interests can lead to such outcome. In this particular case, for reasons that go beyond the scope of this analysis, the discourses about the pandemic became intensely politicized, and this is reflected in the variations of conspiracy theories being floated. In the present situation, such conspiracies reflected tensions in foreign relations, with opposing parties attributing the origins to deliberate acts of aggression from each other [8], despite lack of evidence and, on the contrary, clear evidence of natural origins [16,17,18]. Misinformation has been weaponized as a political tool, something that was previously identified with regard to anti-vaccine agitation on the Internet, with certain parties incensing both sides of the information war in order to further promote discord [19]. The leveraging of misinformation on the Internet by online hate communities to further their agendas was detected by at least one study [6].

Even naming the new virus and the associated disease became politically charged; the World Health Organization (WHO) has deliberately avoided tying the naming pathogens and diseases to purported geographical origins [20]. Despite that caution, the insistence in associating the pandemic to China led to racist assaults to people with apparent Asian characteristics, and prompted scientists to publicly condemn conspiracy-theory based attacks on Chinese scientists and health care professionals [21].

The exponential spread of misinformation led high-level WHO officials to engage in an effort to control its proliferation, partnering with traditional media outlets and the major Internet companies [9]. The WHO Director-General, Dr. Tedros Adhanom Ghebreyesus, made a public denunciation of the adverse consequences of such massive diffusion on the job of scientists, public health officials and health care workers, declaring that "*we're not just battling the virus; we're also battling the trolls and conspiracy theorists that push misinformation and undermine the outbreak response*" [22].

Science to the rescue!

"*Every disaster movie begins with a scientist being ignored*" (unknown author).

The irruption of a novel disease prompted signals of alarm from health care personnel and scientists, which were at first – as usual – ignored or not properly valued by governments in many places of the world. Realizing the potential threat, however, authorities and the general population turned in varying degrees to scientists for answers.

The identification of the clinical and epidemiological characteristics of the disease as well as the isolation and genetic sequencing of the causing virus were remarkably fast; it is noteworthy that, unlike the case of HIV and AIDS, there has been no argument about the putative cause of the disease. This made possible the creation of diagnostic tests early in the pandemic, but as happens throughout the history of medicine, no effective treatment has been yet identified. The development of vaccines, despite a dramatic worldwide effort, is still a considerable way in the future. Faced with a relatively easily transmissible new pathogen with no known treatment and no existing vaccine, public health responses were limited to traditional measures against transmissible diseases, namely, varying forms of isolating people [23,24,25,26,27,28,29,30], which led to a whole set of new problems.

Some critics – most remarkably the Italian sociologist Giorgio Agamben [31] – voiced stark criticisms of such measures, deploring what was deemed an excessive encroachment of State authority on people's lives, a position quite similar to arguments made against vaccinations [32] and tobacco control [33].

Much of those arguments seek support in the body of work of the science and technology studies. After all, as pointed by Hacking [34], such studies (under the umbrella of "constructionism") are inherently iconoclast in nature, showing the many shortcomings of the scientific enterprise, eventually denying it any epistemic privilege.

This approach, however, runs the risk of throwing away the proverbial child with the bathwater, especially when faced with deliberate attempts to distort, misrepresent or deny science. Bruno Latour [35]

raised the alarm years ago, pointing out how the intellectual tools of criticism were being recruited by political an economic interests to undermine perfectly reasonable science, citing climate change denialism as an example. Similar caveats have been voiced regularly by Harry Collins and his collaborators, who have been working on the sociology of expertise for a considerable time. They argued that "*science studies has shown that there is more to scientific and technical expertise than is encompassed in the work of formally accredited scientists and technologists, but it has not told us how much more*" [36] (p. 237) and that "*failing to maintain a distinction between science and technology, on the one hand, and politics on the other, leads to the stark choice between technological populism, in which there are no experts, and fascism, in which the only political rights are those gained through supposed technical expertise*" [37] (p. 8). They defend, then, the role of science as a trusted reference for political decisions, pleading that "*democratic institutions do not ignore, distort or deny the advice of scientific experts. If they want to overrule a strong consensus, that is their choice, but they should be clear it is a choice they choose to make*" [38] (p. 214). One thing that the responses to the unfolding pandemic have made painfully clear is that despite correct arguments about the power held by scientists, politicians do call the shots in the end.

This has been paradigmatically exemplified by attempts by some governments to undermine or even do away with isolation policies, based on a dichotomy between "saving lives" and "saving the economy". Pressure from certain economic agents try and force their hands to choose the latter, despite prominent economists defending the necessity of keeping the confinement measures and suggesting economic policies that would help to mitigate the ensuing economic downturn [39].

This has translated to the adoption to varying degrees of denialism by such governments, from outright denial of the disease ("it's just another cold"), to underestimation of its death toll.

At the same time, governments and general population have demanded responses from the scientific establishment, especially with regard to possible treatments – and respond it did. From February 11th 2020, the day the new disease was officially named by the WHO, to April 15th of the same year PubMed has recorded 4,130 articles published with that theme, 1,176 in the last week of that interval. ArXiv, medRxiv and bioXriv, preprint servers, had a total of 2,150 articles uploaded to their repositories in the last date of that interval.

This presents another problem. Understandably, at least part of that explosion is due to legitimate intentions to provide more insights into various aspects of the pandemic. But despite the best intentions, the ever increasing pressure on researchers to publish creates a bandwagon effect, putting pressure on an already overburdened publication ecosystem, with likely ill effects on the quality of what is being published despite valiant efforts by editors to create fast-track mechanisms for articles dealing with this subject. Characteristically, this has been evidenced by the proliferation of poor quality articles on various purported treatments, to which authorities intent on breaking isolation policies have hung their hopes and public discourse, touting certain substances as the silver bullet that will cure the disease, so no need to worry about it, get back to work.

This problem is compounded by the tendency of the traditional media to exaggerate ("hype") scientific findings, especially related to biomedical issues. This is not a new phenomenon, and has been analyzed by different authors, which have shown however that much of the blame lies with the scientific institutions themselves. In the competitive environment that big science became, good press is a strategy to achieve better funding for both research departments and journals, leading those, particularly the former, to produce press releases that overstate research results and can contribute to the creation of false expectations on the public, at first, and discredit of science itself as the bold promises do not materialize [40,41,42,43,44,45]. The media, on the other hand, often falls into the trap of false equivalence ("bothsiderism"), giving equal consideration to opposing views, no matter the credibility or quality of the parties in the debate, an attitude that has contributed much to the general public misconceptions about issues such as vaccines or climate change [40].

What is to be done?

"*Science can be wrong* (...) *but this does not make the opposite view right. In the absence of careful research about the opposite view, science is probably the way to bet. This is even more likely to be the case if science is continually put under scrutiny*" (Harry Collins & Trevor Pinch).

Taken together, the proliferation of misinformation, the avalanche of published research and its echoes in the media create an information overload that compromise the public debate and the possibility of adopting sound policies, and possibly undermining the trust in science itself. As Collins & Evans [46] put it, the speed of politics exceeds by far that of science, meaning that decisions may have to be made without the kind of evidence that would make a scientist happy, and might even be proven wrong in the long run. The burden on experts is to assess the best evidence available and provide the necessary advisory to the political instances. As such, the best approach might not be rush to have a plethora of individual articles published, but to establish wide cooperation networks including researchers, public health authorities and health care workers. Such a network would permanently propose and revise guidelines, overlooking the ongoing research and extracting at each moment knowledge good enough to act upon, even if provisionally. The diffusion of such guidelines, given their impermanent nature, would be better suited to be presented over the Internet, in hotsites collectively curated by the governing bodies of such networks.

Collins & Evans [46] stressed that the better defense of science is to present it as a value-driven enterprise, starting with the classical Mertonian "CUDOS" definition (Communalism, Universalism, Disinterestedness, and Organized Skepticism) [47]. Reinstating those values is possibly the best way to serve the public and at the same time defend the role of science in the political debate.

Additional information

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Resumo

Este ensaio discute a proliferação de discursos sobre a pandemia da COVID-19, apresentando os desafios para a ciência e as políticas públicas, criados pela sobrecarga de informações, tendo como referencial teórico a sociologia da expertise, *de Collins.*

Ciência; Meios de Comunicação; Internet; Mídias Sociais

Resumen

Este ensayo discute la proliferación de discursos sobre la pandemia de COVID-19, presentando los desafíos para la ciencia y las políticas públicas creados por la sobrecarga de información, teniendo la sociología de la expertise *de Collins como marco teórico.*

Ciencia; Medios de Comunicación; Internet; Medios de Comunicación Sociales

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