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EDITORIAL

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Advising and controling: science communication at a crossroads

Pierre Bourdieu wrote that Sociology is "a disturbing science" [*une science qui derange*] (Bourdieu 1984), because somehow we are all, or believe ourselves to be, sociologists a little bit. Social scientists are used to this situation and nobody complains when citizens talk about globalization or capitalism without too much conceptual knowledge. But also no one is scandalized, for the same reason, if a biologist, biochemist or nuclear physicist talks about these things in the same way.

Things are quite different with natural sciences, which have built their languages around representations and numbers (Baird and Hacking 1988). Due to the lack of personal experiences and expertise, very few people can comment on issues such as the atomic structure or the half-life of viruses in a face mask. This produces a double effect: admiration or rejection of natural sciences.

Associated with the above, there are overlaps between disciplines and levels of specialization, gray areas in which, for example, a biologist, who studies camelids, can comment on the coronavirus (Airhart 2020; Wrapp et al. 2020) with greater public acceptance than a historian specialized in public health (Cueto 2020). However, the multidimensional crisis unleashed by the coronavirus increased the tensions between knowledge(s) and common sense, and as a consequence several social mechanisms have started.

The most visible is infodemic, a term coined in the World Health Organization to denounce a practice that consists of spreading false news about the pandemic increasing panic in societies.

Thus, scientists of different levels have taken charge of this situation, offering their advice both on demand and voluntarily. Governments are being advised at the same time as they are subjected to media pressure due to the opinion of the same type of specialists in other media. A crossfire between specialists, disciplines and knowledge, with false news as background music. The public exposure of scientific policy advisers is not new but has never reached current proportions. They can be seen in press conferences as the right hand of political leaders, or directly taking command of the situation, as is the case of Sweden where they have coined the term "Tegnelliar" that refers "to listening to the National State epidemiologist, Anders Tegnell".

At the same time, the professions specialized in public communication of science, that heterogeneous group of scientists, journalists, social communicators, science teachers, museologists, among others (Bauer 2009), have begun to propose strategies to face the situation. Although the validation tools for the scientific information circulating through the networks were pre-existing, in many countries more and better mechanisms have been put in place, institutionalizing to some extent the previous capacities.

In Latin America, web pages, sites and tools to validate information about COVID-19 emerged, or were consolidated by professional scientists involved in science communication or scientific journalism.

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Thus, in Argentina the National News Agency, Telam, in association with CONICET, has launched the CONFIAR site (https://confiar.telam.com.ar) where news are validated. They offer a toolbox to analyze images, videos, maps, tweets, quotes, among other elements.

In Mexico, the Mexican network of science journalists has launched covidconciencia, a collaborative effort to validate information, while the Mexican government has developed https://coronavirus.gob.mx/, a platform that covers from security recommendations, data on the evolution of the pandemic in the country, a section for children, reference material, news and a mobile app.

In Colombia, https://coronaviruscolombia.gov.co/Covid19/index.html in addition to the above, includes a self-diagnosis system to assess the risk of having coronavirus.

In Ecuador, https://coronavirusecuador.com/ also offers verified information, statistics on the evolution of the pandemic in the country and a self-diagnosis test.

The list goes on and almost all the countries have set up a system to check information with more or less associated measures. Thus, the validation of scientific information that circulates through the networks around COVID-19 has become an imperative that nobody seems to discuss. Scientists, science communicators and the public seem to welcome these measures. However, the old questions are still there: who is in charge of "curing" these contents? Which are the disciplines called to do it? What is the validation procedure?

Everything suggests that the paper, the scientific publication, together with personal consultations with specialists are, in the end, the most widely used mechanisms.

In the social analysis of the communicational processes of science, it is almost a commonplace that there is a hard core of experts whose "voice" is invoked by different social groups to achieve legitimacy (Collins and Evans 2002). Be it justice, be it the media, be it other social institutions that require specialized knowledge at any given time. This does not dent the value that these opinions may have, but it does make us aware of what they are: opinions within a set of other opinions. There may be experts, even within the same discipline, whose opinions differ. There is a lot of documented material in one direction or another. What is clear is that, almost never, the opinion of an expert is the last word.

The problem arises when inquiring what "valid scientific knowledge" is for a situation like the current pandemic. If we dealt with the trajectory of a bullet in a vacuum, there would be no doubt: a physicist can give us an adequate response to all imaginable practical purposes. But a pandemic is a social situation. That the cause is a virus has practically no relevance. It could be a bacteria or a chemical agent. And specialists would change radically. A virologist and a bacteriologist have something in common, but not a chemist.

So, who do we call to inform us, reliably, about a pandemic? Those who make up the "hard core" are not very permeable to external actors intervening in that reserved space (Suldovsky, Landrum, and Stroud 2019).

What role is imposed on science in this kind of police action regarding the information that circulates? Naturally, we agree on the development of more and better systems for the production, circulation and verification of scientific information that circulates in the networks. But the mechanisms developed in this dizzying dynamic do not seem to consider the knowledge developed in recent decades regarding the inclusion of more actors in the communication process. The platforms appear without prior discussions, which do not necessarily have to be very long. They just don't happen.

At least two things seem to be missing in this dynamic. On the one hand, a minimum protocol about the good practices of science news production. These protocols exist in journalism in general associated with politics (Scheufele 2000), human rights, health (Cachán Alcolea 2014), confidentiality of sources, gender issues (Byerly 2013), among others. But they are scarce or nonexistent in the case of scientific journalism. It is necessary to take this

institutionalization of the profession a little further: to generate protocols of good practices that spread beyond the content.

On the other hand, it is necessary to advance in the full recognition of the constructed character of science. The validation of news by specialists from a limited set of disciplines, its objectification in data, numbers and graphs, does nothing but reproduce the communicational dynamics of the natural sciences, simplifying the world and thus avoiding the possibility of more dynamic and fruitful communication.

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