

Science in public debate in times of crisis

Abstract

Determining when a scientific discipline is ready to inform policy is a difficult task and, depending on the issues at stake, the criteria for determining whether the knowledge is robust enough to do so can vary. Against this backdrop, a study at the London School of Economics found that more and more governments are turning to science to inform public policy. In times of crisis, this need for insight - however imperfect - is exceptionally pressing. Yet evidence-based policymaking is even more difficult when there is little data and little time to gather it. During the COVID-19 pandemic, the scientific community was called upon to contribute to the rapid understanding and treatment of the crisis, at the risk of working in haste. Memorandum 14 : overview of the studies and projects registered on WPRN database

Science in public debate in times of crisis

Determining when a scientific discipline is ready to inform policy is a difficult task and, depending on the issues at stake, the criteria for determining whether the knowledge is robust enough to do so can vary. Against this backdrop, a study at the London School of Economics found that more and more governments are turning to science to inform public policy. In times of crisis, this need for insight - however imperfect - is exceptionally pressing. Yet evidence-based policymaking is even more difficult when there is little data and little time to gather it. During the COVID-19 pandemic, the scientific community was called upon to contribute to the rapid understanding and treatment of the crisis, at the risk of working in haste. Faced with this perilous exercise, what pitfalls did it fall into? Under what conditions can research usefully inform public debate and help political decision-making? Many avenues for reflection are outlined by studies referenced on the World Pandemic Research Network (WPRN).

Research under pressure: less rigorous studies ?

In a fascinating article on the shortcomings of research acceleration ([available](#) on WPRN), Christopher Grieser notes several disturbing facts. A meta-analysis of nearly 1,700 clinical trials on COVID-19 shows that only 5% of them demonstrated compliance with measures to ensure that the stated causal relationship could not be explained by other factors. Of these, 700 were randomized controlled trials, but only one-fifth of these used concealment of subject assignment. The samples of the COVID-19 trials were also smaller than usual to allow for rapid publication... Samples are often too small to reliably detect significant effects.

Grieser also points out that 18% of life scientists switched their research focus during the pandemic to a topic related to COVID-19. He points out that unintentional redundancy in research wastes resources, and that this 'migration' of scientists may have affected the quality of studies. Indeed, since newcomers have little or no experience in coronavirus research, the quality of their work is often lower than that of specialists. According to his sources, while in February 2020 most pre-publications on coronaviruses were valuable contributions, by the end of May 2020 only one in 50 pre-publications was really strong. Thus, attempts to increase the speed of research sometimes prove counterproductive: false leads and weaker foundations generate waste of researchers' time. More broadly, Grieser's theory is that the enormous public attention on COVID-19 may have slowed down coronavirus research through "inappropriate redirection of research efforts".

Assessing in a hurry

While scientists have always spent time reviewing their peers' work, according to Grieser's study, the number of hours now spent doing so is unprecedented. During the pandemic, the scientific community devoted a lot of energy to refuting low-quality research to prevent it from becoming misinformation. Where once a low-quality paper was ignored or reviewed by no more than two researchers, now several dozen researchers can focus on it. In an emergency, this is the solution that has been found to prevent policymakers or the media from picking up on erroneous or misleading pre-publications again, as was the case with hydroxychloroquine (which derailed the search for a treatment for COVID-19 with hundreds of clinical trials on it due to political interest - and despite inconclusive preliminary results). There are other options for managing this risk while freeing up valuable time for more useful research activities.

Separating the wheat from the chaff

One of the reasons why the media and politicians have seized on pre-publications to bring them into the public debate - without always distinguishing their quality - is that science is based on an extremely lengthy peer review process. While a political decision with huge consequences may have to be taken in a few days or weeks, the review process takes months. According to a [British](#)

[study](#) on the management of scientific knowledge in the event of a crisis, this intrusion of outside eyes on work in progress seems inevitable. It therefore suggests creating a system of flags to differentiate the levels of review of publications and distinguish each stage, from the submission of an article to final publication. This would avoid all documents being treated as equally valid.

In the context of a pandemic, to reduce publication delays, the British study also recommends drawing inspiration from the model of medical journals where publication decisions are a binary “Yes/No”. Following the example of the Lancet’s ‘rapid evidence review’ on the psychological impact of midlife, they suggest checking that the work is methodologically sound (not that the reviewer would have done it that way), not wasting time on rewriting to make the style smoother, and not soliciting additional experience that ‘might’ prove interesting.

Expert... in one’s field

Another change to be made is to resist the temptation to speak out of one’s field of expertise, despite journalists’ requests. After analyzing more than 800 articles written by researchers in the humanities and social sciences in the media between March and July 2020 ([study](#) to be found on the WPRN), Elsa Bansard and Anne-Coralie Bonnaire of the CNRS conclude that «researchers often lean outside their disciplinary windows to give an opinion that is certainly enlightened, but not well-founded in terms of their field of research. (...) For example, a lawyer speaks on newspaper Le Figaro about education, a sociologist about psychology or historians about crisis management policy on newspaper Le Monde. The above-mentioned English research highlights the need to create databases of experts to enable the media to quickly identify qualified people to consult. Current information networks (e.g. university and learned society databases) do not appear to be up to the task. It is essential that the gap between the general public and scientists does not widen further.

The pitfalls of the political instrumentalization of science

The Covid crisis has exacerbated the debate on the role of science in guiding public policy. Justifying decisions with research is not without its difficulties and risks for policy makers. An [article](#) published by the University of Cambridge highlights the UK government’s lack of rigor in its use of behavioral science. In particular, it recalls the concern of six hundred behavioral scientists who sent an [open letter](#) to Downing Street questioning the scientific basis for the decision not to adopt a strict policy of social distancing. In her article, Anne-Lise Sibony points out that more solidly documented phenomena than “behavioral fatigue” could have been used to support the decision, but that this would not have made it unquestionable. A rigorous scientific approach leads to the recognition that the probability and distribution of behavioral phenomena are unknown here, and that certain mechanisms may, moreover, mitigate these phenomena.

An impossible orientation?

For Sibony, the British case is an example of how governments can misuse behavioral concepts and tarnish the reputation of research-based policies. But even if the government had been scientifically rigorous, could behavioral knowledge really have guided its policy? In a setting where there are so many unknowns, is it possible for sufficient scientific consensus to emerge? In a [comparative study](#) of anti-Covid policies in Jordan and Sweden registered on WPRN, Élise Tancoigne and Marianne Noël show that opposite strategies were chosen there based on behavioral science. In both cases, experts in the discipline have criticized the decisions taken.

Scientific debate at the service of democracy?

Following their research on the role of the humanities and social sciences in times of crisis ([to be found](#) on the WPRN database), Maryse Bresson and Pierre Guibentif from MSH Saclay point out that the erosion of the democratic model is partly fuelled by an excessive distancing between the scientific and social worlds. They recommend “facilitating an active reappropriation of science by non-scientists”. In their [study](#), referenced on the WPRN, researchers from the London School of Economics (LSE) also suggest that further efforts should be made to explain scientific concepts used by politicians and to clarify the distinctions between different schools of thought within disciplines.

While better communication to the general public is necessary to maintain or rebuild trust in research, the LSE study shows that public disagreement among experts does not necessarily undermine the credibility of science. This is excellent news because, as the MSH Saclay researchers point out, scientific activity is above all an activity of debate. According to them, it is the debate initiated and fuelled by scientists on collective issues that should guide political decisions, not the scientific discourse itself. From this perspective, as Maryse Bresson and Pierre Guibentif explain, the human sciences could help revitalize politics: «The modern sciences took off before the development of democratic political regimes and they provided these regimes, particularly through academies, with models for organizing collective action through consultation and for debating ideas and arguments. (...) If science has played a role in the formation of modern democracies, its role may well be essential in the current efforts to rehabilitate democracy.

