

# Scientific Medicine in the Age of the Pandemic: Framing the Debate against a Background of Conspiracy Theories, Propaganda and Groundless Opinions

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## Abstract

The Covid-19 pandemic has had a huge impact on the world of science. On one hand, it has spurred renewed research activity in the field of health and medicine, with increased investment by public and private sectors alike, leading to the development of new treatments and the generation of large quantities of data, enabling epidemiological studies on a scale rarely seen before. On the other hand, the pandemic has drawn attention to the role of scientists and research in modern society, highlighting their uneasy relationship with politicians, traditional and digital media and the wider public. The enormous scientific progress made since the start of the pandemic has been overshadowed, and in some cases compromised, by the failure to properly communicate the results of scientific research to the citizens and the failure of governments to make the best use of those results in terms of adopting the right policies. The result is that the standing of scientists in society has been undermined, with governments pursuing populist notions of “freedom” (in opposition to calls for lockdowns by public health experts), while social media platforms enable the propagation of fake cures, conspiracy theories and vilification of individual scientists. The solution lies in the depoliticisation of science, which needs to be properly funded while respecting the principle of freedom of scientific endeavour, such freedom being at the heart of traditional liberal ethical values. This approach is best pursued on a European level, as exemplified by the work of the European Research Council.

## Keywords

Pandemic Period, Scientific Data, Scientific Medicine, Health Policies,

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## Depoliticization of Science

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### 1. Introduction

COVID-19 will be remembered for many things, but a key legacy of the pandemic that it has unleashed will be its impact on the dynamics of communication and scientific practice. The *pandemic effect* has been positive to the degree that it has spurred the development of new scientific skills and boosted social and cultural interest in science: epidemiologists, virologists and public health experts have become household names in the mainstream media and on social media platforms.

In this rapidly evolving crisis, keeping up with the discoveries of the scientific community has been more important than ever, but there are many western political leaders and heads of state who have not been paying sufficient attention, causing enormous damage to science. Some have preferred to act directly, taking political control of the flow of scientific and health information and using it in an arbitrary and personal way.

The vaccine arrived in record time despite all the technical and biotechnological confusion, but in the meantime, many lives could have been saved if the political and social messages regarding the scientific discoveries had been correct about the dangers, challenges and health issues, and if they had been more clearly and rapidly presented to society.

We still have much to learn about the flow of information in this continuously developing situation. The West seems to have adopted a more consistent and firmer approach to the strategies of control, containment and prevention, but is now obliged to tackle a new wave of infections caused by genetic variants of the virus **Sars/Cov 2** and by the rising number of countries that have relaxed their health restrictions.

At this point, the demand is how can science be better communicated in the future, in the light of what we have seen with the lockdowns during the pandemic?

A short-term strategic political plan for science should aim at the creation of a new scientific culture that honours the ethical principles of diversity, fairness, inclusion and freedom of basic research.

Science cannot be the servant of political or economic power! We need to create the means and the preconditions that will enable science to move forward autonomously (full freedom for the scientific community) by ensuring that the provision and allocation of economic resources are independent of political power. At the same time, the mechanisms by which scientific information is disseminated and explained to the public need to be improved. Lastly, we need to establish the ethical foundations that will enable the best researchers to work on their ideas freely and independently.

## 2. A New Path for Scientific Research in Europe

Concerning how science might follow this new route, it seems useful to make reference to a recent interview with Maria Leptin published in the journal *Nature*. Since November 2021, Maria Leptin has been the president of the **European Research Council (ERC)** (ERC, 2021), the main European agency funding basic scientific research. Maria Leptin, whose cultural and scientific background includes extensive knowledge of cellular genetics, was previously head of the European Molecular Biology Organization, concerned with life sciences, hosted by the **European Molecular Biology Laboratory (EMBL)** in Heidelberg, Germany.

In the interview in *Nature* (Schiermeier, 2021), Leptin set out her plans for the development of European science and spoke of the social role of scientific research in the **European Union (EU)**. The primary objective is to maintain and stabilise the scientific activities of the ERC in order to enhance the value and profile of basic research with a view to greater involvement of European citizens. The ERC, Leptin points out, aims to maintain managerial and decision-making autonomy in order to reaffirm its founding mission, which is pure research, free of political and economic influence and pressure, hoping for the healthy democratisation of the debate on science and its social implications. Addressing herself directly to European citizens, she invites them to participate by intervening and presenting their own wishes on the digital platform that the ERC has made available as part of its attempts to motivate and generate broader social involvement in research and science. The project's practical objectives include:

- 1) Informing the public about the economic and financial contributions that researchers receive from the ERC, with particular attention to those that are directly relevant to the future of Europe;
- 2) Showing people that cutting-edge scientific research is shaping the future of Europe, thereby stirring their interest in life sciences and human sciences;
- 3) Urging other independent and grass-roots funders of research, in accordance with the scientific ethics agreed by the **Global Research Council**, to raise interest in science throughout the community;
- 4) Encouraging researchers to join forces in their campaigns to obtain, via legal and transparent procedures, funding for scientific research (and the innovation that derives from this) that can have a positive impact on society. This system of public funding must protect the interests and rights of European citizens and make them aware that science belongs to everyone and that everyone can finance it. This will serve to rehabilitate science as a social and democratic asset and disprove the argument that science is at the service of political or economic power.

It is fundamental that Europe continue to support and promote science as a social good. Specifically, it must ensure that careers in scientific research remain independent of conflicts of interest and attractive due to the unique developments that it can give rise to. The best researchers must be enabled to develop the ideas they wish to pursue in full freedom. The debate on science is democratically enriched as an opportunity to speak and discuss the type of Europe

that its citizens want to live in and how they can help to shape its common future. We are aware that the future of Europe will be largely modelled by practical decisions that are made by those working in basic scientific research and technological innovation. The pandemic in progress has shown everyone how important scientific skills are for reinforcing feelings of trust and hope. Now more than ever, we need political decisions that will help society to take the fundamental steps in the transition to a green and digital culture while retaining the ability to tackle future challenges, in a highly competitive international environment. It is therefore concerning that the organisers of the **European Research Council** do not see research and innovation as priorities.

A further important issue with regard to which Europe can and must play a key role is climate change. In addition to the European Research Council, there are other programmes working to this end, such as **Horizon Europe**, the EU's new research and innovation (**R & I**) funding programme for the period 2021-2027<sup>1</sup>. The objective of the programme is to strengthen the scientific and technological basis of the European Union by developing ways to tackle strategic priorities such as the green and digital transitions. The pandemic and the response of European institutions can open up a new phase of democracy, if we are able to fulfil the potential associated with the transformation of socio-economic systems while developing strategic policies and values that are commensurate with the social challenges. The programme also contributes to the achievement of sustainable development goals and strengthens competitiveness and the economic growth. It thus represents the main EU initiative in support of R&I, from conception to the market. With a budget of 95.5 billion euros, including 5.4 billion euros from **Next Generation EU**, the programme brings together national and regional R&I funding. **Horizon Europe** is the continuation of the previous programme called **Horizon 2020**.

In Italy, the most acute phase of the health crisis, which has had a big impact on the country's social and political evolution, seems to be gradually waning, while in other European countries worrying signs of a new rise in infections are emerging. It is universally recognised that COVID-19 vaccines were developed so rapidly because a series of scientific sectors that for a long time had not received any funding for basic research were rapidly reactivated as a result of new political priorities. Any science useful for improving the human condition comes from below, driven by social and economic need, its influence in terms of ethical values extending upwards.

In our time, new scientific disciplines have arisen: genomics, the management of large quantities of data and statistics applied to large systems all enable researchers to use science to study issues that would have been impossible to tackle ten years ago. The ERC can draw on a broad range of approaches in the research, from humanistic disciplines to physics and biology, aware that there is no single remedy or solution applicable to the entire complex social situation.

<sup>1</sup><https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/programmes/horizon>.

The ERC's budget is decided by EU member states, but also by the European Parliament, and MEPs listen carefully to their constituents. It is clear that the public must realise what basic scientific research is about what it can do for society. We must think of new forms of communication that will bring scientific discoveries to the public, especially the young. One way to achieve this is to work with social media experts in order to ensure that the information reaches the greatest number of people effectively and incisively.

### 3. The Crisis in the Interpretation of “*Scientific Data*”

Another aspect that emerges strongly is the difficulty of interpreting scientific data in their full epistemic complexity and thus understanding their use and abuse in political decision-making. This is especially true in the context of the pandemic, given that in the name of “*data*”, personal freedoms are suspended; social and economic relationships are interrupted; patients' chances of survival, depending on whether they receive a certain pharmacological treatment, are decided; and the research fields that benefit from the investment of public money are selected. For medicine, “*scientific evidence*” is a complex epistemic question, still open to interpretation, which has moral, legal and thus political implications (Pagel & Yates, 2021). Faced with the suffering and grief of citizens however, the pandemic has led to a crisis of credibility of “*scientific evidence*”. Scientific knowledge, in itself complex and challenging to interpret, has become a “*transitory and partial truth*”, whose certainty depends on the facts of the case, generating confusion and uncertainty in the interpretation of the final results.

From the experimental and epistemological point of view, medical science is based on statistical data (with varying degrees of certainty). Paradoxically however, scientists employed as consultants by the government, together with the politicians, regard the scientific evidence acquired in this pandemic as the absolute and indisputable truth, and diseases as natural phenomena governed by eternal and immutable laws. Yet scientific data, which are partial, relative and continuously evolving, cannot be considered *scientific truth*. This has generated uncertainty and a fall in the authority and credibility of scientists among the citizens, who feel authorised to express their own opinions on scientific issues, and to discuss, verify and refute them without being qualified to assess the data but merely on the basis of phrases and theoretical claims whose interpretation is not straightforward. The media have generated much confusion, giving rise to further polemics and interpretative uncertainty, pitting politicians, doctors and economists against each other.

This situation is giving rise to social and political conflict that is leading slowly towards a failure of communication and the paralysis of knowledge, with grave consequences for the democratic system and for ethical values.

### 4. The Legal and Ethical Values at Stake in the Adoption of Health Policies during the Pandemic

In this difficult pandemic period, good information and scientific knowledge, far

from reducing individual freedom, actually increase it, because they increase the value of concrete facts and ethical standards in practical decisions. In other words, good science is able to resolve the problems of society and improve the lives of individuals. We believe that suitable use of scientific knowledge, democratically controlled, increases the freedom of individuals in the sense that via scientific knowledge, citizens become harder to manipulate. The legal and legislative approach to the functioning of science must therefore be “libertarian”, understood as a practical democratic method and not as a political ideology (Cruft, Liao, & Renzo, 2015).

Science should be seen as a liberal-democratic ethical value combining respect for freedom of knowledge with respect for rights of citizens in political and social decisions and strategies. Scientific knowledge must therefore seek to improve the conditions of life of human beings by broadening the range of human and social choices and enabling new lifestyles by continuously transforming life into a field of possible choices.

Our objective as doctors and researchers cannot be to propose pre-packaged solutions of the philosophical or ideological type, but to indicate how to arrive at political and social decisions that are both satisfactory from the scientific and human point of view and logically and rationally defensible, in conditions that are continuously and unpredictably evolving. Lastly, the tendency to argue that there exist moral scientific principles, in the name of which life choices and legal decisions that entail psychological and physical suffering must be inflicted on others, is ethically and philosophically inconsistent and should therefore be abandoned.

### Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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