

Lessons from a First Decade in European Science Policy

RENAUD B. JOLIVET 

Maastricht Centre for Systems Biology (MaCSBio), Maastricht University, Maastricht, The Netherlands

Email: r.jolivet@maastrichtuniversity.nl

In this article, I provide a brief account of my first decade of involvement in European science policy, of what I believe are the key structural issues in that landscape, and where I propose possible adjustments to address these issues.

Spanning Boundaries between Science and Policy

It can be frustrating as an academic to suddenly discover new constraints around one's work, or about yet some additional paperwork to be filed to keep doing research that did not so far necessitate any additional paperwork. In general, it will be every academic's anecdotal experience that the free pursuit of knowledge becomes more difficult over time, not less. It is then usually appropriate to complain to our colleagues about the management of our universities, or about increasing regulatory oversights. These additional constraints and pressures will often be felt as arbitrarily imposed and with no clear origin, or motivation. I would like to argue that this is largely due to the relative lack of engagement of academics with policymakers.

This article is a personal and subjective account of my own personal trajectory, spanning boundaries between science and policy, and a summary of what I believe are some of the key issues in European science policy today. It is the product of a decade of engagement and observations. I conclude by advocating for a possible solution to what I consider to be one of the core issues, replicating in Europe the North American model of elite continent-level Institutes such as the National Institute of Health.

A Decade in European Science Policy

As a first-generation academic, I had to navigate the unwritten rules of academia mostly on my own. This was most acutely felt towards the end of my postdoctoral years

in the UK, immediately before I started in my first faculty job, and it convinced me of the necessity of mentoring in academia. At that time (2013), I had recently benefited from a Marie Skłodowska-Curie individual fellowship to work at University College London, and the European Commission was starting a new alumnus organization around these actions, the Marie Curie Alumni Association (MCAA). Motivated by a desire to give back to my community, I joined the MCAA and started advocating for the creation of a mentoring programme for early-career researchers (ECR) within the association. Little did I know this would start me on a decade-long endeavour in science policy and advocacy adjacent to my academic career.

From my early engagement for ECRs, I was elected to the board of MCAA, and later led the association's policy working group. I was also subsequently asked to serve on the board of the Initiative for Science in Europe, and from there, my peers asked me in 2022 to represent individual researchers and innovators in the European Research Area Forum (ERA Forum) (Council Recommendation (EU) 2021/2122 of 26 November 2021 on a Pact for Research and Innovation in Europe [2021](#)). I have thus had the chance to serve in the European science policy landscape in some capacity or another for a few years now, and my engagement has for now culminated in my sitting on the ERA Forum. This has given me the chance to observe from the inside how European member states and the European Commission craft and shape the policies that will later impact universities and researchers. This has also broadened my view of science policy well beyond my original interest for mentoring ECRs. Below, I continue with two key observations about the current European policy landscape.

A View from the Inside

The most striking observation from this first decade in science advocacy in the European landscape is the apparent disconnect between academics and the policymakers that shape our professional landscape. Anecdotally, civil servants tend to be trained in European affairs, international relations, political science, economy, or law, and only rarely have direct experience of research at a university or similar institution. Even though the hard sciences are one of the main engines of the modern world, few civil servants have a background in STEM. Stakeholders are also often represented by professionals with resembling profiles. Finally, delegates to high-level science policy meetings are almost always relatively senior, and their experience of university would at least be a decade old. I am thus often the only active researcher with current field expertise sitting in these meetings, tasked to represent ECRs, even though I have myself not been an ECR for almost a decade by now.

However, this argument cuts both ways. The reason why I am alone in this capacity in such meetings is because no other researcher has stepped up, and – besides a few colleagues who, like me, are engaged in science policy and advocacy – I doubt that most academics have a clear view on who shapes policy at the national or international levels, or of how policies take form. This has been most evident on the few occasions when senior academic colleagues were asked to report to civil servants

in policy meetings and have, in my professional opinion, completely missed the mark, because they failed to understand the broader policy context in which their intervention was framed. This can lead policymakers to see academics as mere lobbyists and unserious interlocutors, who need to be instructed on how to adapt to the political realities of the moment.

This situation has clear and direct negative consequences. On one hand, policymakers can't easily draw from trusted professional academic expertise to inform their policies. On the other hand, academics miss out on opportunities to shape policies to their advantage. In conversations with other senior colleagues, it has been pointed out to me that this work takes a significant amount of time and is not appreciated or supported by institutions. While this has been mostly true in the past, there is now extensive work going into reforming the assessment of research careers to better appreciate such service and community work. More importantly, every time we do not defend our views, someone else speaks up, usually in defence of other interests that are rarely aligned with the interests of academia writ large. It would be naïve to believe that policymaking is evidence-driven, and that the necessity of well-funded bottom-up frontier research is self-evident. Quite the contrary, there is constant fiscal and regulatory pressure to curtail academic freedom in that restricted sense, and rational arguments are not always the most convincing. Policymaking is messy and necessitates long-term engagement. It is uncomfortable, because it drags us away from the well-crafted and well-supported arguments of polished academic debates, but it is necessary if we are to retain universities as effective drivers of free innovation.

The second salient observation from my first decade in European science policy is the incredible fragmentation of the stakeholder landscape. Researchers and institutions in Europe are represented by a very large number of associations and organizations. These, in effect, compete against each other for the attention of national governments, and for the attention of the European Commission. Sometimes they also compete against each other for funding to support their advocacy mission. While on paper most of these organizations agree on very broad policy lines, in practice, they often disagree on implementation details depending on the constituencies they represent. That is probably inevitable, but can contribute to the view among policymakers that academia does not have its act together.

The Next Battlefield

For European researchers, the next battlefield is the next 7-year European Framework Programme, known for now as FP10, which will run from 2028 to 2034. Discussions about FP10 had already started in 2023, illustrating the necessity for long-term engagement in policymaking. Academics and the organizations that represent them have often reacted too late in the past in such debates. The European Framework Programmes matter beyond the European level, because some of their features are then adopted down at the national level. The two central questions about

FP10 are how much money the programme will contain, and how that money will be apportioned between different funding vehicles.

It is essential for academics to understand that the first question will be decided by national finance ministers. Unfortunately, the European Parliament and the European Commission will have little to say about the overall envelope. That question is likely to be bitterly debated until the last minute. If we are to secure an increased budget in real terms with respect to the current Framework Programme, we will need a continued campaign over the next four years aimed at national governments and finance ministers, and the arguments put forward must convince from an economic point of view. No one disputes the necessity and benefits of science, but the case for science being the main engine of economic growth must be made again and again and supported by economic data. This issue is not new, and it is natural that various budget lines compete against each other for attribution.

In the past, this has contributed to consecutive Framework Programmes with slowly increasing budgets, although they have not increased nearly as much as proponents of research desired. Similarly, the structure of consecutive Framework Programmes was only slightly adjusted as time went by, and some of the key funding vehicles have remained the same over the years. The same debates are taking place right now regarding FP10, but there are reasons to believe that things could be different this time.

Changing Geopolitical Fortunes

Since the invasion of Ukraine by the Russian Federation, the view from Europe has changed considerably. This is reinforced by data showing the European Union in relative stagnation economically and scientifically with respect to other large blocks such as the United States, China and India since about 2008 (Xie *et al.* 2014; Bauwens *et al.* 2011; Rodríguez-Navarro and Brito 2020; Albarrán *et al.* 2010). The situation is particularly dire in those technologies that are likely to shape the future, although this is obviously quite speculative. This has installed in European capitals a new narrative, whereby changes are necessary to preserve European security, strategic autonomy, and long-term economic prosperity. This change of perspective brings with it new challenges, but also maybe new opportunities.

On the side of challenges, it is now apparent that research funding in FP10 will have to compete against defence spending, and that some of the currently civilian programmes might be absorbed into a defence package. Second, after years of (sometimes naïve) pushes for open science, there is now a temptation to ring-fence research on dual-use technologies, and in general on any technology that is perceived as strategic. Third, faced with the relative economic decline of Europe, there is a temptation to push for ever-more applied or translational programmes, and to reduce spending on bottom-up frontiers research. A frequently heard motto in policy meetings is that Europe leads in basic research but is incapable of converting that lead into products and jobs.

The last point is particularly problematic in my opinion, as the data from the European Commission appear to suggest that Europe is in relative stagnation since the financial crisis of 2008. Over the last 15 years, the push for more applied research has been very noticeable, but it has failed to produce any improvements, yet the European Commission is now floating more measures going in that direction in programmes that had so far been spared from such interventions. At the same time, our competitors in the United States and in the UK invest in new structures such as Focused Research Organizations, which offer time-limited but long-term focused funding to explore basic scientific questions.

The apparent competition against defence spending, however, might be a blessing in disguise, as it should now be possible to argue that Europe needs to invest more in research if it is to remain safe and independent. Even Vannevar Bush recognized the necessity and importance of what he called long-range civilian-controlled military research for national security (Bush 1945).

What Next for the Next Decade?

Thus, the European science policy landscape today suffers from a relative lack of direct communication between the highest levels of policymaking and academics with current field expertise, while academia has proven incapable of organizing to speak with a united voice. This happens in a tense international context of increased economic and scientific competition, with the return of violent kinetic confrontation between large nation states on the European continent.

A few years ago, I had the chance to attend a small-scale meeting in the Swiss Alps on the future of my field (Neuroscience). At that meeting, I met with former directors of the Canadian Institutes of Health Research and of the US National Institute of Mental Health. I was struck by their description of how these Institutes, led by renowned scientists, conduct research, directly advise policymakers at the cabinet level, but also shape science policy via their intramural and extramural funding programmes. There is currently no equivalent in the European landscape. The agencies and mechanisms that probably lie closest to these within the European landscape are the European Research Council, the Joint Research Centre (JRC), and the Scientific Advice Mechanism. The European Research Council is led by eminent scientists and shapes policies via its funding programmes, but it does not perform intramural research, nor does it have a formal advisory function. The Joint Research Centre performs mostly applied intramural research and provides expertise to the Commission, but it does not additionally act as a funding body, and its reputation does not yet rise to the level of the big North American Institutes, which have a longer history and perform both basic and applied research. The Scientific Advice Mechanism to the European Commission does provide expert advice via the Group of Chief Scientific Advisors and Science Advice for Policy by European Academies but has no capacity to directly shape policy. There thus seem to be missing in the European landscape such elite institutes, under a scientific leadership appointed by the

European Commission, capable of channelling scientific consensus to the top echelons of policymaking, and able to directly shape science policy via funding mechanisms.

One of the criticisms levelled by the academic community against the structure of the current Framework Programme is on the effectiveness of overly complex funding vehicles, such as some in Pillar II or under the European Institute of Innovation & Technology (EU-LIFE 2024). To address the issues highlighted above, I would propose to take inspiration from the North American model of elite continent-level Institutes. These could be funded by transferring funds from the least-performing programmes within Pillars II and III to Pillar I, and by extending the powers and prerogatives of the European Research Council. This could focus first on a significantly expanded budget and on more freedom to shape science policies within that budget. Second, the ERC should be elevated to provide scientific advice directly to Commissioners.

References

- Albarrán P, Crespo JA, Ortuño I and Ruiz-Castillo J** (2010) A comparison of the scientific performance of the US and the European union at the turn of the 21st century. *Scientometrics* **85**, 329–344.
- Bauwens L, Mion G and Thisse JF** (2011) The resistible decline of European science. *Recherches Economiques De Louvain–Louvain Economic Review* **77**, 5.
- Bush V** (1945) Science the endless frontier. In 1-220. Office of Scientific Research and Development. https://www.nsf.gov/about/history/EndlessFrontier_w.pdf
- Council Recommendation (EU) 2021/2122 of 26 November 2021 on a Pact for Research and Innovation in Europe** (2021) Edited by European Commission. <https://op.europa.eu/en/publication-detail/-/publication/1a0df8ff-5313-11ec-91ac-01aa75ed71a1>
- EU-LIFE** (2024) Towards FP10: EU-LIFE's vision for the European Innovation Council (EIC). <https://eu-life.eu/newsroom/publications/vision-EIC-2024>. In 1–5.
- Rodríguez-Navarro A and Brito R** (2020) Might Europe one day again be a global scientific powerhouse? Analysis of ERC publications suggests it will not be possible without changes in research policy. *Quantitative Science Studies* **1**, 872–893.
- Xie Y, Zhang C and Lai Q** (2014) China's rise as a major contributor to science and technology. *Proceedings of the National Academy of Science USA* **111**, 9437–9442.

About the Author

Renaud B. Jolivet is Professor of Neural Engineering & Computation at the Maastricht Centre for Systems Biology at Maastricht University, and retains a courtesy appointment at CERN, the particle physics laboratory. His work focuses on NeuroAI and Neurophysics. Prior to working in the Netherlands, Renaud worked in Switzerland, Japan and the UK. He has previously served on the boards of the Initiative for Science in Europe, the Marie Curie Alumni Association and the Organization for Computational Neuroscience. He was a 2023 Neurotech Fellow of

the Foresight Institute. He currently is the stakeholder representative for individual researchers and innovators at the European Commission's ERA Forum, and the Chair of the Science & Technology Committee of EBRAINS, the European research infrastructure for neurosciences. He is a recipient of the Marie Curie Alumni Association Career Award (2022) and of the André Mischke Young Academy of Europe Prize for Science and Policy (2023). He is also a Fellow of the International Science Council and of the Geneva Centre for Security Policy.