

SCIENCE & DIPLOMACY



A quarterly publication from the AAAS Center for Science Diplomacy

Jan Marco Müller and Maurizio Bona, "Past, Present, and Future of Science Diplomacy in Europe," *Science & Diplomacy*, Vol. 7, No. 3 (September 2018). <http://www.sciencediplomacy.org/editorial/2018/past-present-and-future-science-diplomacy-in-europe>.

This copy is for non-commercial use only. More articles, perspectives, editorials, and letters can be found at www.sciencediplomacy.org. SCIENCE & DIPLOMACY is published by the Center for Science Diplomacy of the American Association for the Advancement of Science (AAAS), the world's largest general scientific society.

Past, Present, and Future of Science Diplomacy in Europe

Jan Marco Müller and Maurizio Bona

*"I think it most fortunate that your travels in those countries were so timed as to make them known to the world in the moment they were about to become actors on it's stage. That they will throw off their European dependence I have no doubt, but in what kind of government their revolution will end is not so certain....All of this you can best judge for in truth we have little knolege [sic] of them to depend on, but through you."*¹

Thomas Jefferson wrote these lines to the Prussian baron Alexander von Humboldt in December 1813, nine years after the two had met in Washington while Jefferson was serving as the third U.S. president. Humboldt, for his part, was en route back to Europe after his epic five-year journey to the equinoctial regions of the new continent. Jefferson's remark testifies to the influence of European science diplomacy that can be traced to ancient Greco-Roman times, was revived during the Renaissance, and blossomed during the Enlightenment, with the Royal Society of London having appointed its first foreign secretary as early as 1723, decades before the British government did the same.

While the Enlightenment can be regarded as an admirable time for European science diplomacy, historic truth requires remembering that in the 19th and 20th century there were European scientists whose actions put strain on the diplomatic

Jan Marco Müller is the coordinator for science to policy and science diplomacy at the International Institute for Applied Systems Analysis (IIASA).

Maurizio Bona is the senior advisor for relations with parliaments and science for policy at the European Organization for Nuclear Research (CERN).

relations between countries that can be felt until today. Scientists participated in the period of colonial exploitation, helped create the technologies of warfare that resulted in enormous casualties in two world wars, and participated in the horrors perpetrated by totalitarian regimes.

It was with this mixed legacy in mind that a group of visionary scientists, diplomats, science administrators, and intellectuals proposed in June 1950 the creation of a European intergovernmental scientific organization, which led in 1954 to the establishment of CERN, the European Organization for Nuclear Research. The proposal encompassed two main objectives: the interest to resume, on a large scale, scientific research in Europe after the Second World War, and the idea that international research cooperation, based on the neutrality and universality of science, could facilitate restoring relations between countries that just years earlier had fought a terrible war against each other.

In addition to carrying out its scientific programs, CERN—without any formal mandate to engage in science diplomacy, but thanks to the intrinsic soft power of science—played a role in resuming and developing the dialogue among European countries after the Second World War. Indeed, it was at CERN that the first postwar contacts took place between German and Israeli scientists. During the Cold War, CERN remained one of the few communication channels spanning the two sides of the Iron Curtain. Such channels were used by governments to initiate and develop relations that went beyond scientific initiatives.

A similar role was—and continues to be—played by the International Institute for Applied Systems Analysis (IIASA), which was established as an East-West institute by the United States and the Soviet Union in 1972, with the founding members being six countries from the West and six from the East, the two Germanys among them. It was then Austrian chancellor Bruno Kreisky who offered Laxenburg Palace, near Vienna, as a neutral place to host the institute. Having added the North-South dimension in the 1990s, IIASA has evolved today into a global scientific institution in the heart of Europe, bringing together scientists from across the world, including members from nations with currently adversarial relationships, such as Russia and Ukraine.

While activities that can be considered science diplomacy have a long tradition in Europe, the concept itself and the discussion about its benefits have gained traction during the last decade, when diplomatic services in Europe started to use the term explicitly. However, understanding what actually constitutes science diplomacy and how it can best be used differs substantially between foreign ministries and services across Europe.² Only a few countries have published proper science diplomacy strategies.³

In 2016, the European Commission published the document *Open Innovation, Open Science, Open to the World*, providing perhaps the broadest vision of European science diplomacy to date. It defines science diplomacy as “the use of science to prevent conflicts and crises, underpin policy making, and improve international relations in conflict areas where the universal language of science can open new channels of communication and build trust.”⁴

Yet while science diplomacy has emerged as a buzzword, proper science diplomacy units or individuals in ministries who understand the full meaning of the term—including the “science in diplomacy” dimension—remain in short supply. Only a handful of foreign ministries in Europe have formally appointed science advisors.⁵ Many European governments have science attachés in embassies, but these are usually limited to major delegations in key partner countries and mainly serve to foster bilateral scientific relations.⁶ This applies also to the European Commission, which has about a dozen science and technology counselors seconded to EU delegations.

Instead, European foreign ministries and services depend largely on external scientific advice, which is often provided by dedicated foreign policy think tanks.⁷ In the case of the EU’s diplomatic arm, the European External Action Service, significant scientific support is provided by the Joint Research Centre (JRC) of the European Commission, which—formed by the Euratom Treaty in 1957—is, in itself, one of Europe’s most prominent *de facto* players in science diplomacy.⁸

In recent years, many national research organizations have increased their internationalization efforts, such as by opening their own offices in key partner countries.⁹ In parallel, strong European lobbying organizations for science have been created during the past twenty-five years, whose activities also cross into the science diplomacy field.¹⁰

These developments are timely for a number of reasons, among them the need to address the crosscutting challenges faced by European science diplomacy. These affect a wide range of foreign policy areas, such as trade, security, migration, climate action, and international spaces (oceans, polar zones, outer space). The complexity of these matters requires that scientists not only provide evidence on request, but also aid policy makers in identifying and prioritizing strategies and programs needed to resolve these challenges. Some of the main challenges for European science diplomacy are as follows:

1. Global Environmental Change

Global environmental change threatens the stability of societies and economies, especially on a continent that draws much of its wealth and high quality of life from its temperate climate. Models predict that the Mediterranean Basin in particular will become a global hotspot in terms of temperature increase and water shortage, possibly leading to cross-border conflicts. A similarly sensitive focal point is the Arctic, where the opening of transport routes and increased accessibility to mineral resources are creating new challenges for international diplomacy.

The international community has taken decisive steps to combat environmental change and ensure sustainable livelihoods through the adoption of the Paris climate accord and the UN Sustainable Development Goals. Both successes have been possible not least thanks to political support from European actors and contributions by the continent's strong science & technology community. It will remain a core task of European science diplomacy to support policy makers in achieving the agreed-upon goals, all of which are of a systemic nature.

2. Rapid Technological Change

Technology increasingly permeates our society, shaping dynamics of social behavior and opening new challenges. Disruptive innovation can, for example, result in social tensions owing to changes in the labor market and resulting unemployment. On this issue, the main challenges are: (a) the continuous acceleration of technological change, especially through digitalization, which requires policies capable of monitoring and identifying the shifts, and the rapid design of effective development and transition strategies and policies; and (b) the ever-growing complexity and interdisciplinarity of societal problems and the impact that science & technology may have on them.

Many new technologies transcend national jurisdictions and are thus a subject for international relations. Considering that multinational companies are diplomatic players in their own right, science diplomacy should consider among its goals the creation of new paradigms in private-public partnerships, which would protect societies from the harmful effects of uncontrolled technology-driven changes while capitalizing on their opportunities.

3. Conflicts Based on Culture and Values

Uncontrolled technological development, and associated changes in lifestyle, can contribute to a so-called clash of cultures, fueled by the varying capabilities of nations to absorb these changes, both in absolute terms and in speed, into

the value sets on which their cultures are based. In some cases, cultural filters (e.g., different religions, different ethical values) can not only limit the societal benefits of technological innovation, but also spur the erection of cultural walls and sometimes real borders to “protect” traditional lifestyles and identities from changes perceived as hostile. To this end, science, and science diplomacy in particular, should be an enabler of the debate about ethics and values, enabling a societal discussion about the true risks and benefits of change.

4. Resurgence of Nationalism and Populism

In recent years, the world has seen a surge in both left- and right-wing populists elected based on nationalist agendas. Europe is no exception, and national interests have triumphed over European ones in several cases. In the United Kingdom, for example, a nationalist narrative led to a referendum in which a narrow majority voted to leave the European Union. At the same time, separatist movements are rising in some European regions.

The ascendance of nationalism and politicians who promise easy answers also marks a reaction to policy challenges that are becoming more global, complex, and interconnected in nature. At a time when calls to close off borders are once again on the rise in Europe, science diplomacy should strive to keep communication channels open and make the case that the free flow of people and ideas creates innovation for the benefit of everyone. Europe cannot be permitted to forget that nationalism has been a main driver of two world wars.

5. Mistrust in Institutions

Yet another contributor to nationalist agendas is the growing mistrust by citizens in institutions, policy makers, and experts in general. The EU institutions, for instance, have often been accused of being too technocratic and distant from the day-to-day concerns of citizens, even though their decisions are adopted by the directly elected European Parliament and by the European Council. Science diplomacy has a role to play in counteracting this trend. Leading scientists should serve as ambassadors of science, giving it a human face in public debates across the EU. To be trusted, they must be humble and not arrogant, show empathy regarding public concerns, and engage in honest and open exchanges with their fellow citizens.

Conclusions

In view of these major challenges, European actors need to intensify their science diplomacy efforts—with “Europe” understood here as not just the EU but as the European Research Area, which cuts a swath from Iceland to Israel. Fortunately, international research institutions based in Europe—which, practically, have served as science diplomacy players since their inception—have started to develop their role in science diplomacy in a much more explicit manner. Examples include:

- CERN, in 2012, was granted formal observer status in the UN General Assembly, and cooperates with various multilateral diplomacy actors, including on implementation of the UN Agenda 2030, the UN Institute for Training and Research (UNITAR) on diplomat training, and the Inter-Parliamentary Union, whose assembly in October 2018 in Geneva will focus on science, technology, and innovation.
- The European Southern Observatory, which has a formally accredited diplomatic representative in Chile—the host country for its telescopes—played an important role in the summit of the EU with Latin American and Caribbean States summit, held in Santiago in 2013.
- The European Commission’s JRC is a key driver for reinforcing cooperation among the science and policy communities of the Danube River Basin, including EU member states and potential future member states, addressing challenges faced by the region from an integrated and crosscutting perspective.
- The IIASA, in 2016, hosted the first global meeting of the Foreign Ministries Science and Technology Advisors Network (FMSTAN) and, in 2017, appointed for the first time a coordinator for science diplomacy.

One of the most relevant current examples of European science diplomacy fostering intercultural dialogue and peace is the Synchrotron-light for Experimental Science and Applications in the Middle East (SESAME), a research facility based in Jordan that brings together scientists from Cyprus, Egypt, Iran, Israel, Jordan, Pakistan, the Palestinian territories, and Turkey. Animated by the desire to provide this politically sensitive region with not only a tool for scientific research but also a means to relieve diplomatic tensions, CERN, the European Commission, UNESCO, and a number of European countries have contributed to all phases of SESAME, from the development of the original idea to the current operation of its scientific programs, which started in May 2017. The wish is that SESAME could play in the Middle East a role similar to that played by CERN in Europe in the years and decades after World War II.

It is not by chance that the SESAME convention is modeled after the CERN precedent, which establishes that “the Organization shall have no concern with work for military requirements and the results of its experimental and theoretical work shall be published or otherwise made generally available.”¹¹ This was complemented by U.S. Nobel laureate Isidor Rabi, a physicist and scientific statesman, who stated in 1984 “CERN scientists should remember that they have other duties than exploring further into particle physics” and should not “consider themselves as technicians, but as guardians of this flame of European unity so that Europe can help preserve the peace of the world.” This language could just as easily be applied to SESAME and to the researchers working there for the benefit of dialogue and peace in the Middle East.¹² Further efforts are under way by some of the European actors involved in SESAME to export this model to other regions, such as the western Balkans and Southeast Asia.

All these activities show the value and potential of European science diplomacy. Following on the 2012 release of its strategy on enhancing and focusing EU international cooperation in research and innovation,¹³ the European Commission now funds through its Horizon 2020 research program three major science diplomacy projects to harness this potential.¹⁴ In addition, the European Research Council has started to explore opportunities for basic research to foster science diplomacy endeavors.¹⁵ Yet, as confirmed by a recent EC-commissioned study authored by the Belgian expert Luk Van Langenhove, science diplomacy efforts in Europe remain largely uncoordinated.¹⁶ The study therefore calls for a proper EU science diplomacy strategy and related action plan to underpin the EU’s Common Foreign and Security Policy.¹⁷

If the various European science diplomacy players were to engage in a more coherent effort, both at continental and national levels involving EU and non-EU countries as well as international research organizations –much progress could follow. Such a coherent effort might include, for instance, an in-depth strategic reflection on science diplomacy driven by European ministries of foreign affairs and research, and a closer collaboration on this issue among the international research infrastructures based in Europe. This would, in turn, help fully tap the potential and soft power of European science & technology for the peaceful and sustainable development of our planet.

Endnotes

1. Helmut de Terra, "Alexander von Humboldt's Correspondence with Jefferson, Madison, and Gallatin," *Proceedings of the American Philosophical Society* 103, no. 6 (1959): 793.
2. See, e.g., France, <https://www.diplomatie.gouv.fr/fr/politique-etrangere-de-la-france/diplo...> Spain, <http://www.exteriores.gob.es/Portal/es/PoliticaExteriorCooperacion/Diplo...> Italy, https://www.esteri.it/mae/it/politica_estera/cooperscientificatecnologica; EU (European External Action Service, https://eeas.europa.eu/topics/science-diplomacy/410/science-diplomacy_en).
3. These include France, "Report 2013: Science Diplomacy for France," Directorate-General of Global Affairs, Development, and Partnerships, <https://www.diplomatie.gouv.fr/IMG/pdf/science-diplomacy-for-france-2013...> and Spain, "Informacion sobre Diplomacia Científica, Tecnológica y de Innovación," Gobierno de España, http://www.ciencia.gob.es/stfls/MICINN/Investigacion/FICHEROS/Informe_Di...
4. European Commission, *Open Innovation, Open Science, Open to the World: A Vision for Europe* (Luxembourg, Publications Office of the European Union, 2016), 74, <https://ec.europa.eu/digital-single-market/en/news/open-innovation-open-...>
5. These include, notably, the chief scientific advisor in the UK Foreign & Commonwealth Office (est. 2009), the science and technology advisor in the Polish Ministry of Foreign Affairs (est. 2016), and, most recently, the chief science officer in the Dutch Ministry of Foreign Affairs (appointed April 2018).
6. The most developed of these schemes is probably the swissnex network, which represents Swiss S&T worldwide and, interestingly, does not focus primarily on capitals but instead on major science hubs like Boston, Silicon Valley, Shanghai, and Bangalore.
7. Examples include the Stiftung Wissenschaft und Politik in Germany and Chatham House in the United Kingdom.
8. In addition, the EU Institute for Security Studies, in Paris, and the EU Satellite Centre, near Madrid, provide direct scientific support to EU foreign and defense policy.
9. Examples include Helmholtz and Max Planck in Germany, and Centre National de la Recherche Scientifique in France.
10. Examples include Science Europe (the network of funding agencies on the continent), EuroScience (the grassroots organization of European scientists), and the various European networks of science academies (ALLEA, EASAC, FEAM, Euro-CASE).
11. See "Welcome to the CERN Council," <https://council.web.cern.ch/en/content/convention-establishment-european....>
12. Herwig Schopper, "CERN's Early History Revisited," *Physics Today* 58, no. 4 (2005): 87, <https://doi.org/10.1063/1.1955503>.
13. European Commission, "Enhancing and Focusing EU International Cooperation in Research and Innovation: A Strategic Approach," communication to the European Parliament, the Council, the European Economic and Social Committee, and Committee of the Regions, September 14, 2012, p. 4. https://ec.europa.eu/research/iscp/pdf/policy/com_2012_497_communication...
14. Inventing a Shared Science Diplomacy for Europe (InsSciDE), <http://www.insscide.eu/>; Using Science for/in Diplomacy for Addressing Global Challenges (S4D4C), <https://www.s4d4c.eu/>; European Leadership in Cultural, Science and Innovation Diplomacy (EL-CSID), <https://www.el-csid.eu/>.
15. European Commission, "Frontier Research and Science Diplomacy," Brussels, October 27–28, 2016, <https://erc.europa.eu/sites/default/files/content/events/brochure-scienc...>
16. Luk Van Langenhove, *Tools for an EU Science Diplomacy* (Luxembourg: Publications Office of the European Union, 2017), https://www.ies.be/files/Tools%20for%20an%20EU%20Science%20Diplomacy_by%...
17. European Union External Action Service, "Common Foreign and Security Policy (CFSP)," <https://eeas.europa.eu/topics/common-foreign-security-policy-cfsp/420/co...>