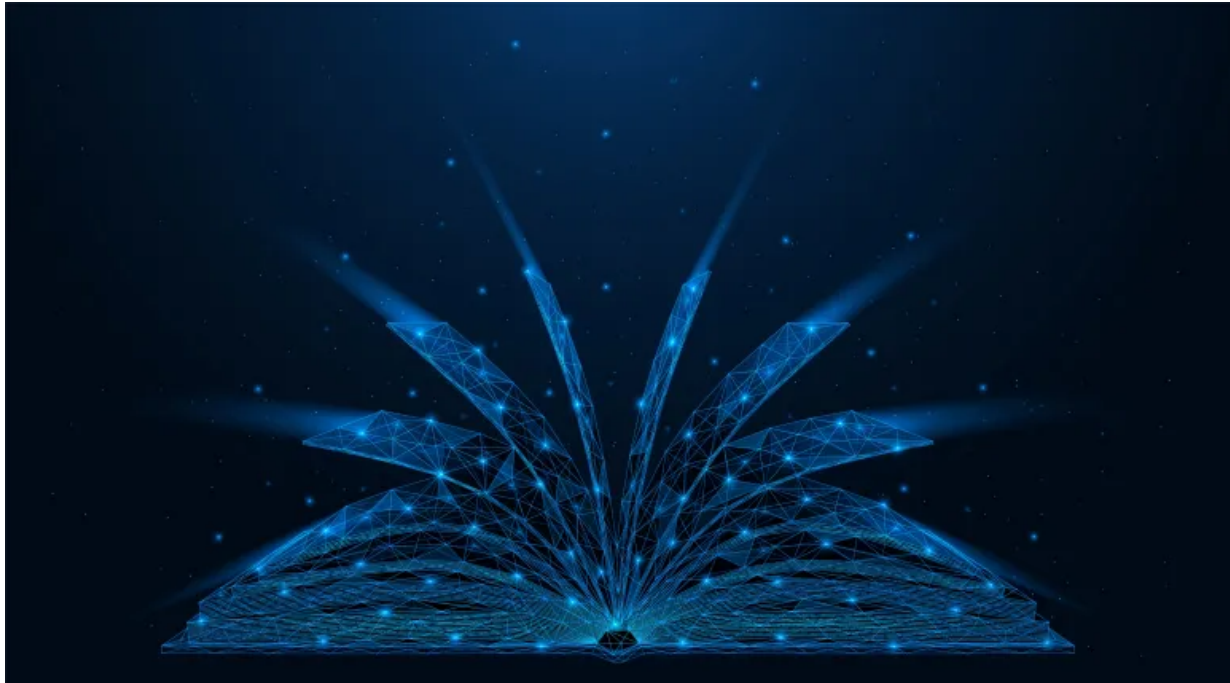




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PERSPECTIVE | 10/17/2024

'Open Science 2.0' and Diplomacy

By [Chris Tyler](#), [Jean-Christophe Mauduit](#), [Andrew Plume](#)

SCIENCE DIPLOMACY - 15 YEARS ON

OPEN SCIENCE

ARTIFICIAL INTELLIGENCE

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Science diplomacy frameworks in an evolving geopolitical context

In 2010, the model of contemporary science diplomacy outlined by the American Association for the Advancement of Science (AAAS) and the Royal Society (RS) helped to put a name onto a longstanding practice.¹ Since the publication of this model, however, the world has changed. Geopolitically, nationalism has been on the rise, which has contributed to increased fragmentation and diplomatic tensions. The COVID-19 pandemic and conflict in Ukraine added fuel to the fire by closing down and realigning a range of trade and economic systems. On the scientific side, many technological advances, such as AI and quantum computing, have drawn attention more to the competitive aspects of science than to its collaborative ones. Taken together, these trends are rendering the environment for science diplomats and scholars far less optimistic than that captured in 2010's *New Frontiers in Science Diplomacy*.

Indeed, in the now well-known tripartite taxonomy of “science for diplomacy,” “diplomacy for science,” and “science in diplomacy,” the “for” implies a positive relationship between science and diplomacy through a mutually reinforcing and helpful *process* with a diversity of actors. In 2017, Peter Gluckman and colleagues pointed out that the three dimensions are often intertwined and can at times be nearly indistinguishable (e.g., in the Intergovernmental Panel on Climate Change, diplomacy for science efforts often go hand-in-hand with science for diplomacy actions).² They proposed a state-centric reframing, and a new taxonomy where science diplomacy actions are taken to “advance national interests,” “address cross-border interests,” and “meet global needs and challenges.” This moves away from an overall *process* framework to one that considers the *purposes* of the actions of an actor.

AI and Open Science

At the same time, within the world of research, there has been a move towards opening up the outputs of academic research. This Open Science movement has shifted the business model of scholarly publishing from reader- to author-pays,

making vast quantities of academic literature available to anyone with an internet connection. The phenomenon had been developing since the 1990s, but the COVID-19 pandemic gave new impetus to the use of pre-prints (early manuscript versions of research papers) in medicine and related disciplines. UNESCO's recent Recommendation on Open Science summarized these developments.³

There also have been seismic changes in the tools that can be used in science diplomacy. The emergence of generative AI has caught the public imagination, to the extent that its near-term impact is probably overestimated, but—as with most disruptive technologies—its long-term impact is probably underestimated. There will be a wide range of use cases for new AI tools in policy,⁴ including in many diplomatic systems and processes. By way of examples, tools that already exist and are rapidly improving enable: the recording and analyzing of meetings and negotiations (who said what, outcomes, actions, and how what happened relates to previous sessions); the reading and analyzing of documents (synthesizing information in diplomatic briefings, government reports, and academic papers); and the writing of new materials (for example, semi-automated diptels⁵).

Where new AI tools and Open Science meet, we see a second phase in which users will be able to interrogate academic literature like never before. We refer to this confluence of massive volumes of open research information and the machine-enabled ability to distill it in useful ways as Open Science 2.0.

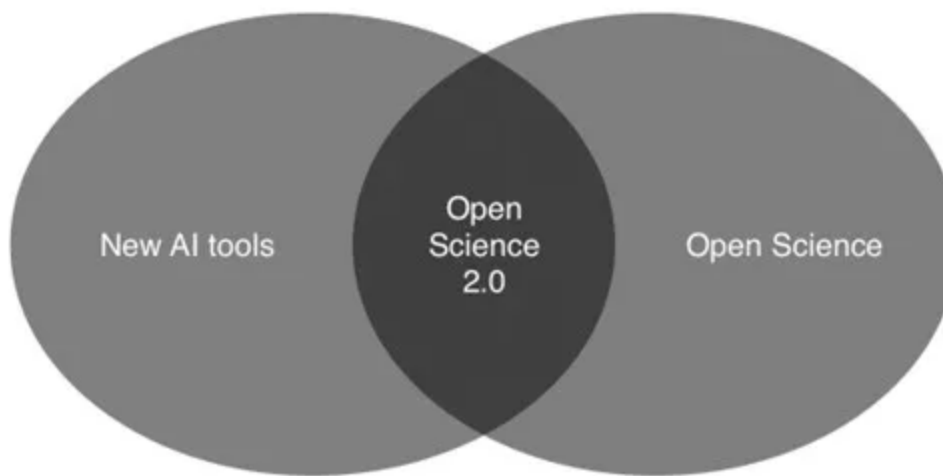


Fig.1 - *Open Science 2.0*

Inherent tensions and the need for new frameworks

These new developments create inherent tensions within the 2010 and 2017 frameworks for science diplomacy. For example, Open Science (and Open Science 2.0) is a global enterprise while the political world is becoming more dominated by nationalism and science is increasingly serving national interests. Here, “diplomacy for science” (diplomacy that would help move Open Science forward) could rapidly find its limits depending on the state actor. Actions “in the global interest” of the Gluckman et al. framework, which would include further promoting Open Science, may also not take place because of national interests (which are also embedded in their other two taxonomic dimensions).

Another tension is that, as knowledge becomes available more widely, countries that do not invest in knowledge creation are capitalizing on the investments of other countries. This is problematic if negotiators see things in zero-sum frameworks. Finally, there is a tension and feedback loop between negotiating the development of AI technologies and Open Science protocols on the one hand and using AI tools and Open Science 2.0 in diplomatic settings on the other. This latter “science in diplomacy” dimension could enter into conflict with the former “diplomacy for science” dimension where tools to be regulated might participate in their own regulation.

Individual frameworks are useful lenses through which to consider social phenomena, but for practical purposes, it is often useful to combine models, particularly in public policy.⁶ Combining the AAAS-RS⁷ and Gluckman et al. (2017) frameworks in the context of Open Science 2.0 would be a useful first step (Rüffin & Rüland, 2022, did something similar for Arctic science diplomacy).⁸ Such an analysis would help elucidate how the changing contexts affect the *processes and purposes* of science diplomacy, and how developing Open Science 2.0 tools could help diplomats meet the demands of the future.

To minimize the damage of global economic and diplomatic splintering – or reverse it – diplomats have their work cut out. Science diplomats, to be maximally useful to this endeavor, must apply updated frameworks to deepen collaborations across diplomacy, science, publishing and technology to make the most of Open Science 2.0.

Endnotes

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