Inventing a Shared Science Diplomacy for Europe: Twenty-Eight Historical Cases, a Thousand Ideas

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This book of cases is like a bouquet. A bouquet of flowers, varied, colorful, perfumed: filling the senses, enlivening, seizing contemplation. A bouquet of fireworks, in the French sense: the grand finale.

The Horizon 2020 InsSciDE project created a community of historians and archaeologists, science-technology-society scholars, political scientists, and communication and training specialists. Together we have illuminated how science diplomacy has taken shape, and played out, and could develop in Europe. Our case studies range across 250 years and five thematic areas: heritage, health, security, environment, and space. InsSciDE researchers also looked at two cross-cutting themes: the issues of power revealed or leveraged with science diplomacy; and the fluid identities and practices of science diplomats themselves.

The twenty-eight InsSciDE case studies included in this volume examine individuals, communities, institutions, and also material objects, captured in a particular moment of interaction, or in a long duration. Our interdisciplinary collection opens a perspective on centuries and continents to show how science diplomacy springs from different sources. Science diplomacy is planned or unplanned, and sometimes perceptible only when looking back to track the processes and events set into motion by a dense, multilevel field of competing desires and demands. Science diplomacy sometimes grew from the curiosity and ambition of scientist-explorers, or from pragmatic acts of managing transborder crises. It emerged when actors at a diversity of levels each angled across time for a role and the power to advance scientific, national, or common-good objectives.

We show how science diplomacy can happen without an institutional mission, and how it is sometimes the context and the product of great struggles: to define futures (and policy) in the image of sociotechnical imaginaries; to rise in scientific and technological competence; to compete for primacy in innovation, and reap its economic, political or reputational fruits; to establish dominion, symbolic or territorial; to subvert and reconfigure geopolitical order; to defeat neocolonialism, and restore voice to a range of actors, human and non-human. We show how infrastructure such as data systems, or social media, or other diplomatic objects such as a research nuclear reactor or a space vehicle, are enlisted – with or without success – to channel and develop influence.

Never a unitary reading

This introduction is a very partial interpretation of the InsSciDE case studies by a non-historian, with apologies to their authors. My colleagues may not (or will not!) agree with my reading. Moreover, they would easily impart even more wisdom and insight in their replies to my thoughts. This manner of dialogic development characterizes the process of creating this volume: the request for common adherence to a harmonized template, and then my line-by-line challenges to my colleagues' drafts in the first months of 2022, resulted (we hope readers will agree) in a set of brilliantly clear, concise and precise statements. The latter are even more thoroughly drawn, and referenced, in classical peer-reviewed academic journal publications; these are indicated in the endnotes of each case.

The play of conflicting interpretations and clarification was our interdisciplinary experience throughout the time of InsSciDE. At one juncture there was a thought of making T-shirts, as the final project gift, to proclaim openly the common (if tacit) assertion "I am not defined by your theory". Instead, we deliver this volume of harmonized cases, in which each author accepted to bend scholarship and expression to a particular short format, in the goal of an incisive, and very broadly accessible, open fund of knowledge. The cases are there: go read them, alone, or preferably with a diversity of colleagues – professionals or early learners; argue, discuss and grow! In debate, or in multiple rereadings, these twenty-eight cases will inspire a thousand ideas.

InsSciDE colleagues, many firmly grounded in a university context, understand that undergraduate or postgraduate teaching is an inseparable part of research. In concert with our project partners who are specialists in dispensing continuing education (European Academy of Diplomacy), or international diplomats of science (some of our advisors, and consortium member UNESCO), we tried to share even more broadly with stakeholders, and learn from practitioners (including networks of science attachés). InsSciDE's joint experience of teaching and training, invoked by Daniella Palmberg's closing piece in this book, is collected in reports and open resources on science-diplomacy.eu.

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Taking a new, closer look at science diplomacy

Diogo et alia
Christensen

The InsSciDE cases teach us to observe the performance of (techno)science diplomacy in unexpected places, such as political cartoons or tweets ("non-canonical" sources to be analyzed). These lasting traces of communication urge us to reflect on the diversity of acts, verbal and non-verbal, done to influence both individual and collective framings, and the balance of power.

Kyrtsis & Rentetzi
Aberg
Ruffini

Similarly, the graphic illustrations we have added to all our cases urge our readers to project themselves into the context. Examine facial expressions in archival photos, and imagine the actors' feelings and motivations. Even stock or corporate photos, some devoid of human figures, invite you to grasp the stakes: the somber emptiness and complexity of a nuclear power plant control room invoke the potential for severe accident; the formidable size of ITER fusion reactor components communicates the multilevel challenge of its assembly – and invokes Big Science; the brilliant lights and elegant geometric elements of European diplomacy's Brussels headquarters invoke a particular institutional message and grandeur.

Realism: The variety of aspirations

InsSciDE was fortunate to count Pierre-Bruno Ruffini among our authors. Several cases in this volume cite, as a point of departure, his classical formulations of what science diplomacy can do for the state, and its hoped-for outcomes: advancement of national or larger-scale interests; reduction of tensions; improvement of cross-border relations; creation of a better international order. In his InsSciDE article "Conceptualizing science diplomacy in the practitioner-driven literature: a critical review" (2020), our colleague points to the well-known taxonomies of science diplomacy, then observes that "practices are broader than what the mainstream discourse covers", and proposes to investigate this "gap". Ruffini particularly questions why "the rationale of competition in science diplomacy is underestimated". He emphasizes that if a cultural bias toward scientific universalism and a top-down mission profile easily explain current practitioners' operational focus on cooperative actions, academia by contrast must address "all [the complexity of] practices located at the intersection of science and foreign policy". What is needed, Ruffini concludes, is "a conceptualization of science diplomacy that would account for the tensions between the idealism of science and the realism of diplomacy, and between international cooperation for the common good and competition driven by national interests."

Look no farther – and prepare to be destabilized. The InsSciDE case studies do not and cannot aspire to an integrated conceptualization, any more than they present a linear narrative of how science diplomacy discourses and missions have been determined and realized. By distinction, and doubtless by the force of impartial fact, InsSciDE authors instead offer a compelling picture of complexity traversed by tensions (which should comfort our advisor, sociologist Edgar Morin). This picture of science diplomacy is far from the "peace and love" image humorously derided in the early meetings of the Horizon 2020 sister projects InsSciDE and S4D4C. By its intense and variegated realism the InsSciDE image questions the very possibility, at this stage of scholarship, of settling the "constants" that Thucydides himself declined to draw when he founded the discipline of history twenty-five centuries ago (see Pascal Griset's introduction to this volume). Griset points out that numerous recent concepts (many applied in our cases) have renewed the work of history and ensured its articulation with other sciences. Nonetheless the irreducible thousand ideas found here demonstrate, perhaps, history's greatest asset offered to the understanding of science diplomacy.

The InsSciDE authors illuminate the messy tableau of the many things a diversity of actors wanted to do, during the period in which they turn out to have been doing science diplomacy. This book delivers a portrait of science diplomacy constructed on the ground, from the ground up. Only infrequently does a story we read here start with persons being sent on a defined mission with scientific or diplomatic goals. These are stories rather of science diplomacy forming and adapting in response to myriad factors; these are stories of aims and desires in stark competition. (In particular the intra-European rivalries depicted here pose useful questions regarding the effective arrangement of a European science diplomacy.) While Ruffini's work has rightly observed the willful application of science diplomacy in pursuit of national (or regional or global) interests, and government objectives, our book scatters images of a much greater variety of aspirations.

Overall, the cases communicate with force a sense of people wanting to get things done, responding (even with surprise) to opportunities or circumstances, testing moves and tinkering with solutions. In certain instances, the defining motivation is certainly the common good, as when technicians at the World Health Organization datafy relationships to enable a global movement toward greater vaccination coverage. Creating the infrastructure to support data exchanges, which binds a diversity of stakeholders into a productive network of public health knowledge and action, collaterally succeeds in imparting power and authority to the WHO. Political issues are transformed into technical issues, and inversely. Common-good objectives are front and center too in the evolution of blood safety measures negotiated by public health actors; the work of international standardization is both a noble and necessary pragmatism and a struggle over definitions, responding to and also attempting to evacuate, perhaps, both technical and ethical quandaries.

Pichelstorfer & Paul

Vlantoni

In some instances, a demand (for power, influence, or achievement) arises in some locality, and scientists (and/or political actors, or diplomats) have to rise to the occasion. All manage – with more, or less, success – to bend it to their own designs, taking the opportunity to advance other aims. We are treated, for instance, by this volume's interrelated space cases to a particularly lively vision of science bureaucrats and their interactions with political leaders. The Franco-Soviet *Premier Vol Habité* presented a complex, difficult, and disruptive task; human spaceflight was something that the French scientific community did not necessarily even agree on undertaking. A driving goal of national prestige (putting a French astronaut into space) here required scientific collaboration and administrative cooperation. And as this demand carried with it an opportunity to conceive and address another, community goal – for instance, understanding physiological effects of microgravity – scientist-administrators (on both the French and Soviet sides) fully undertook that cooperation. What is fascinating is how the cooperativeness "took off"; as in a fine doubles game of tennis, where the pleasure lies just as much in keeping the ball in play as it does in scoring points, *Premier Vol Habité* scientist-administrators and politicians alternately ran to the net as needed, engaging each time the public discourse most apt to keep the joint project aloft. Indeed, overcoming political challenges was time and again facilitated by insisting on the pure, scientific need to send life sciences payloads into space. By contrast, in the case of Soviet-US scientific rivalry-cum-collaboration on understanding the human effects of "space rays", military secrecy and party politics on their own side deprived Soviet scientists of priceless opportunities to obtain data. Scientists close to making a leap in theoretical understanding of the cosmos were left in the dust of terrestrial concerns. Here competing demands could not coalesce into mutual achievement carried out by political and scientific actors. Was that because, despite the heroic propaganda slogans and posters depicting the cosmonauts, a deep understanding of the multidimensional value of scientific/political cooperation was not fully shared? Or was it because contradictory role demands were resolved (as so often, and so simply) by brute power?

Griset

Roche-Nye

Dubrovina

Instrumental relations, or co-shaping?

The stories in this volume spark questions of instrumentalization. Do the agents of state power uniformly, and primarily, hijack science to attain goals of power or appeasement? Is that a "politicization" of science to be avoided, as a European External Action Service science counselor warns? Or are scientists' individual or collective goals and desires just as strong, just as present, and just as generative of masterful strategy (and sometimes of trade-off sacrifice) as the most pressing political ambitions? The InsSciDE cases, especially those tracing the actions of individual science diplomats, show how state diplomacy may be pressed into the service of scientific realization.

Ruffini

A French scientist-explorer of the late 19th century, avid for knowledge conquest, calls on overseas national representation (military or diplomatic) for protection or support in foreign lands, and obtains it by appealing to the notion of national pride (competing nations are filling their museums faster with harvested treasures of antiquity!). The concept of "scientific attaché" arises in the mind of that explorer in 1878: why not simply appropriate, for greater efficacy and agility, the very diplomatic identity? His "wish" is immediately understood and ratified by experienced colleagues, who suggest manners of introducing it into the mind of power. The French will not succeed at that time in establishing the attaché role (while more than a century later their network of science attachés will be dense); the state prefers to establish overseas institutes like French schools. By contrast, German scholars will win the designation of "extradiplomatic scientific attaché", but the associated conditions remind us that when power grants status, the grantee owes

Laborie

Paillette

duty. Elsewhere, twenty years later, French medical scientists are accustomed to creating international scientific forums to dispute theoretical models of contagion and practical recommendations for epidemic management; they issue reports that will advance both their disciplines and international health governance. The scientists of the Institut Pasteur are naturally called to Porto when plague breaches the European continent; they rely in that city on the French consul for both lodging and laboratory space, and meet not only the service goal of containing the epidemic, but also the combined political and internal goal of increasing the global visibility and prestige of the Institute's anti-plague serum. Moreover, in stark changes of level, these moves will reflect – and contribute to the creation of – a European identity, and lay the foundations of a global health diplomacy.

Gamito-Marques

Emerging from these stories is a vision of alternating, mutual, or reciprocal instrumentalization, or more compellingly what Léonard Laborie by the end of our project called "co-shaping". The science and networks of 19th-century zoologist Jose Vicente Barbosa du Bocage were vital resources for Portugal in the (prototypically competitive) Scramble for Africa. Were the geographical societies created in his time principally to promote economic and imperial ambitions, or to lobby government for support to scientific missions? Laborie wrote of Bocage (in review comments): "moving from science to diplomacy, because of his knowledge, and calling for further knowledge production, in his position of diplomat-in-chief, Bocage embodies and reinforces the continuum that in certain areas of knowledge and world politics exists between science and diplomacy".

Gouarné

Indeed, that notion of co-shaping gives the non-historian insight into "history": the science diplomacy exposed in these cases is rarely decided, written, understood, or regulated in advance, nor even in the precise time of its unfolding. Instead, history – that is, what we witness through these case studies – is constructed across time by the various forces co-shaping reality, and then by our ability to look back, note patterns, and interpret outcomes.

Simões & Diogo

For these reasons, doubtless, some authors emphasize their recourse to the *longue-durée* perspective. Indeed, most InsSciDE authors have preferred to consider not a single salient moment in time, but a series of events and of relational configurations that form over some period – one that emerges, or takes on coherency, once we look back. This approach allows the historians to take into account as well their subjects' evolution in position over time, and in some cases their reflexivity, quoting their archives, diaries, and also later interviews in which the actors themselves express their perspective on events in real time, or reflect on the past.

Le Roux
Dubrovina

Arrangements and assemblages

Roche Nye
Gouarné

Of note, several cases highlight the durability of multiactor cooperation and mutual support across time and even across regime changes. These cases attest less to the permanency of institutional arrangements, and more to the adaptability of actors, and the adequacy of tacit or reified principles, which together enable science diplomatic arrangements to endure. Here too, a lively picture of both human and institutional relations is delivered in accounts of satisficing arrangements based on such principles as "reciprocity and compromise". These concepts - simultaneously pragmatic and idealistic - are present in the very organizational structure of the fusion project ITER, and describe just as aptly the ongoing history of transnational collaborations on archaeological digs.

Aberg
Butterlin

Griset

Many of the cases invite us to consider the conditions under which arrangements emerge (or fail to emerge), detailing their development. These may be arrangements that arise in a pragmatic way, or in a convergence of interests, and are then solidified – but still may need conscious examination to be sustained. This is the case when academy of science international activities benefit from local consular and then ministerial support, but where sponsors should reflect on the academies' need for stable funding and also for complete independence in decision making.

Le Roux

The arrangements may be unplanned or even perhaps cynical, but the actors each recover (more or less) their chestnuts from the fire. Examples include French phytochemists inventing acceptable ways to obtain funding and support for transnational research; when diplomats were pressed into service for scientists' field security, their own expertise and practices in turn were enriched.

Kyrtsis
Paillette

Several authors emphasize that such arrangements – personalized or institutional – depend heavily on the establishment of trust. Although not thoroughly operationalized in these essays, trust appears to be interpreted as a common

acceptance (and experience) of normalized procedures and principles on which reliably predictable transactions may be based. Perhaps a species of normalization would be needed to enable diplomats to call on science in crisis. When the Portuguese ambassador to Japan finds that his national scientific resources are less useful than are his habitual (and non-European) diplomatic networks to face the Fukushima nuclear catastrophe, both science diplomacy and the presence of Europe as diplomatic actor are called into question.

Urze, Diogo & Simões

Co-shaping is present not only in institutional arrangements. It also affects the very materiality of technoscience achievements caught in multilateral dynamics. Objects such as the Hermes spaceplane are transformed through games of influence, when twin tools of attraction and cooperation allow French delegates to the European Space Agency to obtain the partnerships (national, international and European) required to materialize a particular interest. (Of note, the French triumphed in shaping the blueprint for years of European work – but the Hermes vessel never actually made it off the paper!) The cases easily convey French philosopher Gilles Deleuze's notion (recalled to us by our advisor John Krige) of "assemblage": whether of stakeholders, research communities, and rationalities; or of ambitions, real-time responses to constraints, and "diplomatic objects".

de Floris

Adamson

The InsSciDE case studies also do a fine job of revealing how framings, procedures, and the very data and principles of science can be the outcome of ongoing moves by different actors. This is the case when third party liability insurers take an active, if backstage, role in shaping and informing negotiations around nuclear safety standards. Our cases pose the question of where front stage and backstage diplomacy meet, and of the interplay of formal, informal, and even "imagined" diplomacy. Several authors demonstrate the weight of sociotechnical imaginaries – shared mental images of technological potentials, imbued with values – in setting diplomatic and policy agendas (or triggering counter-agendas). The United Nations Convention on the Law of the Sea was beaten out on the moving waters of several ocean imaginaries that divided the global north (ocean as a limitless resource) and south (ocean as an environment to be protected), revealing and emphasizing not only different values and concerns, but also these actors' differential ocean science capability. The narrative of "nuclear winter" captured the public imagination, but despite a strong run did not succeed in winning the race of science research policy setting whose outcome could determine different futures for the international arms race. Not only sociotechnical imaginaries, but also more intimate ones – such as social representations of bodily, political and food/water security – are active, we learn, in the construction and treatment of geopolitical accords. At the 2015 Valletta Summit on Migration, the unexamined privilege accorded to the empowered actors' imaginary of security leads to the denial both of neighbors' reality and of scientific input. An inability to empathize with neighbors is clearly evident in the account too of German archaeologists' handling of a 1963 workers' strike on a dig in post-colonial Syria.

Kyrtsis & Rentetzi

Simoes & Diogo

Robinson

Turchetti

Mikros

Helms & Pruß

The scientific impulse

In their boiling realism of complexity traversed by tensions, what do InsSciDE cases tell us of scientists' goals and desires? The "universal values" and "common language" of science delineate well the ability of scientists to form projects across borders and participate in multilateral schemes. Our historical science diplomacy accounts transmit, moreover, the exaltation of scientists. The constant presence of scientists' will to understand, to know, and to create (as well as to be recognized and empowered) makes the stories read like a good novel. We can share triumph and frustration with scientists here, enjoy discovery with them, and reflect on the scientific impulse and the meaning of scientific greatness.

The Citadel project applies (under conditions of great danger) disciplinary art, diplomatic skill, and technoscience to make contact with the Assyrian capital Dur-Sharrukin (built between 715 and 705 BCE under the rule of King Sargon II). This account offers a particularly inspiring image of science as a brilliant intellectual and highly social endeavor, where science and sociability reach across cultures, borders, polarized violent conflicts, and far spans of time. The archaeologists, present and past, of our volume are called by ministries and museums to integrate their expertise in the governance of transborder specialty science. Similarly, the high scientist-administrators of the agencies involved in realizing human space flight were dually talented individuals, whose ability in both science and diplomacy enabled the achievement of complex projects. That such persons are called upon to serve reflects a certain intelligence of technocracy, and offers one explanation of how nation-states can perform innovation.

Butterlin

Roche-Nye & the space cases

Simões & Diogo
Laborie
Gamito-Marques
Helms & Pruß
Le Roux

The Enlightenment naturalist José Francisco Abbé Correia da Serra's diverse investigations of the American geography, flora and fauna, and his vision of a geopolitical American Hemisphere, combined with his genial "tea-cup" diplomacy, impress us. A "utilitarian view of science" as delivering access to resources may, as the case authors say, indeed be "appropriate to a country under construction". Not all the field scientists of the InsSciDE cases, however, are perfectly sympathetic figures. Tales of willful extractivism and exploitation make us uncomfortable. Reading many stories not only of the aim to influence world order but also of assertive scientific ambition, we may ask: is there a fundamental difference between a desire for political hegemony and the desire to master, before all others, both knowledge and perhaps nature?

Wormbs
Foyer & Dumoulin Kervran

Yet the InsSciDE collection allows us also to envision other relationships with science and nature. We are introduced to – or reminded of – modes of knowledge production and use that question western paradigms. Indigenous or "traditional" knowledge (thus accessible, one may hope, to us all) is linked less with exploitation than with both survival and quality of life. Nature (the environment and non-human actors) in traditional contexts is approached in a respectful conservancy relationship. Such representations combined with role interpretations yield narratives that point to an "alternative" science diplomacy. Here our societies' relationship with our own climate, admitting of less and less negotiation, may yet be appeased. New or traditional modes of cooperation may be found to address, indeed, our global challenges for the common good.

An alternative view on science diplomacy

The InsSciDE collection of historical case studies invites us to entertain, if not an alternative diplomacy that can be immediately set in motion, certainly an alternative view on science diplomacy. Beyond the canon of "diplomacy for science", and "science for or in diplomacy", beyond the practitioners' insistence on the operative uses of diplomacy and science, InsSciDE research communicates in this volume a new contribution to the field: a living, moving, endlessly complex and compelling image of historical reality in all its many dimensions and contradictions. InsSciDE authors together offer us a mirror in which we may glimpse not only a recognizable image of human desire, but also a deep perspective on how cooperation and competition form, against the odds and beyond prediction, our technoscientific achievement and our international relations.

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