Chapter 1
Introduction to the Book

Science Diplomacy in Time of Uncertainty

Recent years have seen an increasing interest in applying scientific knowledge towards the improvement of diplomatic and political decision-making processes. To this end, researchers have sought to provide suggestions and evidence-informed strategic advice to policymakers on matters of global interest. Sometimes it works; other times it falls on deaf ears. In the discussion about the interaction between science and diplomacy, different definitions have been proposed, each providing a wide variety of concepts from diverse disciplines. These concepts include soft power, public diplomacy, preventive diplomacy, etc. However, the origin of science diplomacy should be found in the field of international relations, where the interests of science and policy come together and science is employed by policymakers to facilitate and mediate issues of global concern, as well as to resolve the increasing number of conflicts around the world.

This book follows the ongoing debate in the EU and the world in providing a better understanding of the tools that can be deployed to improve communication and cooperation between scientists, politicians, and diplomats in this field. To this aim we would need to improve interpersonal negotiating skills to manage evidence-informed policymaking processes. A basic fact about interpersonal negotiation is that people have different backgrounds, core beliefs, held values, cognitive biases, assumptions, emotional processes, metacognitive abilities, and behaviours, and they

In the long history of humankind (and animal kind, too) those who learned to collaborate and improvise most effectively have prevailed.

Charles Darwin
are unpredictable. The working relationship capacity building may profoundly impact present and future interactions and negotiating outcomes. It is possible to be tough but respectful, and still establish a good relationship with high levels of credibility.

**Science and Politics**

Modernity is a challenge which puts to the test principles and values that have traditionally ruled relationships between individuals and populations, the control of the planet’s resources, and the survival of humankind. May we still trust the human mind’s creative potential? In light of the new identified coronavirus (SARS-CoV-2) and the recent COVID-19 crisis, the question arises almost spontaneously as to whether science and politics are parallel activities, and whether the communication channel between these two spheres is effective. An important feature of the scientific method is valuing doubt over certainty. In politics having doubts is seen as a form of weakness. Science is based on years, sometimes decades, of studies, experiments, tests, and examinations, to arrive at concrete, reliable results and solid conclusions. However, by its nature, science cannot itself make influential decisions, let alone ones legally binding on the population. Politics, for its part, has the important and delicate role of directing the fate of an entire country, or rather of an economic-political area, through a democratic legislative process for the common good of its citizens. However, in order to legislate most wisely, it is essential that political decisions are based on solid scientific foundations and that, at the same time, they carefully consider all the varying interests involved (public health, right to work, economic factors, etc.). It often happens, however, that politics finds itself making decisions, not necessarily supported by scientific evidence, to respond to a higher good that does not always coincide with the absolute good, for example, as happened with COVID-19 measures. In complex situations and environments, what we need is not to be waiting too much for the right information, but the right way to understand the information we already have and act as fast as possible.

**COVID-19 Crisis and Sustainable Scientific Advices**

Close association of humans and wildlife (handling and consumption of unmanaged wildlife by humans increase the opportunity for cross-species transfer) has created a “perfect storm” that has greatly altered global disease dynamics. Evidence-informed policymaking may be the gold standard for crafting policy—the question is how that gold standard copes with messy and uncertain reality. Decisions are influenced by a wide variety of factors. This means that even in individual policy areas the evidence-informed policymaking must be both broad enough to develop a wide range of policy options and detailed enough for those options to stand up to intense scrutiny. As stated by Ambassador Robert Gallucci, policymakers are faced
with irreducible complexity and radical uncertainty—and they must often rely on inadequate information. Policymakers think practically, are prepared to do anything that looks as if it might succeed, and are reluctant to take big bets if not forced to do so. Reality is still a long way from perfection, as clearly highlighted by the events that have taken place since the beginning of this “strange” year 2020. But both science and politics now more than ever are willing to improve the situation by learning from past mistakes and weaknesses. Cognitive behavioural interventions have proven effective in altering mindsets from a “fixed” entity perspective to a “growth” incremental perspective. Scientists and politicians/diplomats could structure interventions that educate individuals and groups as to the ways that stress influences decision-making, especially under conditions of time pressure, uncertainty, and ambiguity. This could be done together with the increase of the awareness of the interconnectedness between core beliefs, cognitive biases, sacred values, thinking traps, and adaptive decision-making processes. This book presents a breakthrough in thinking that can lead to better understanding and foster these transformative processes for the individuals involved as well as people generally. At the end of the day, science diplomacy is a catalyst for political and social change.

Organisation and Contents of the Book

The chapters of this book are organised into four different parts. Part I is titled *Perception and Misperception in Science Diplomacy*. In Part I, Mauro Galluccio highlights the importance of a communication in crisis situations such as the COVID-19. A sustainable science diplomacy requires the capacity for empathy and compassion, an ability to build and foster working relationships, and an awareness of the importance of cooperation between scientists and politicians/diplomats. Scientists and politicians together need to develop and apply a public information strategy in support of their common efforts to manage crisis and solve problems. We need to restructure concepts, constructs, techniques, and strategies of public policy and diplomacy, adapting them to this new era of global communication that shapes the public context within which events unfold as the COVID-19 experience has showed.

Part II is titled *Science and Diplomacy: Negotiating a Joint Engagement*. In Part II, Mauro Galluccio explains why the most important issue for the years to come is represented by a strengthening of the cooperation process between scientists and diplomats/politicians. Science diplomacy has a huge potential as a “soft power tool” for preventive diplomacy and conflict resolution. It could help to build bridges where formal diplomacy has failed. In this sense, it is an attractive option for foreign policy strategies throughout the international community. The European Union can use its potential to consolidate its normative power on the international scene while using its strength in research and development to help countries achieve their sustainable goals. If science is properly channelled in domestic policy advice and external relations, its transformative power could lead to a world of better
understanding, respect, and collective well-being. At the end of the day, the greatest winner from progress in science diplomacy will be all of us, both in the future and in the present.

Part III is titled *Biosecurity and Environmental Disaster: Adaptive Decision-Making in Time of Uncertainty*. In Part III, Mauro Galluccio highlights how recent events like the COVID-19 have shown the heightened uncertainty of the contemporary world. Climate change, terrorism, health issues, and political instability have all contributed to threats to security and safety in a complex environment where analysis is based on a “post-normal science”. In a world of great uncertainty, threats to biosecurity and biosafety have become a challenge to the integrity of populations. It is evident that building resilience will be important for the future.

Part IV is titled *Theory, Research, and Practice for Science Diplomacy: An Insight on the Cooperative Process* and it is composed of four chapters written by different authors. In Chap. 11, Mauro Galluccio and Mattia Sanna focus their joint attention on a multidisciplinary research project conceived and directed by Mauro Galluccio on two sides of the Atlantic, the United States, and the European Union. The main objective was to better understand how highly trained negotiators and diplomats reason, feel, and behave in complex negotiation processes under conditions of uncertainty and ambiguity, and if interpersonal skills could be a predictor of a sound negotiating process. Our findings suggest that there is a variability in negotiation outcome that can be linked to an individual negotiator and it appears that a portion of this variability can be related specifically to negotiators’ interpersonal skills rather than to other variables. Research in this area has the potential to improve both negotiation research and evidence-informed training for negotiators.

In Chap. 12, Lodovica Gullino and Laura Vivani explain how the European Union promotes and finances the reinforcement of the food security system in Europe with the protection of the biodiversity and ecosystems in the frameworks of agriculture, horticulture, and forestry. The EMPHASIS (Effective Management of Pests and Harmful Alien Species—Integrated Solutions) project played an important role in defining a new approach to agricultural risks’ effective management while respecting the environment and human health. EMPHASIS has been a pilot participatory research project where stakeholder engagement went beyond the simple dissemination of results at the end of the project. End users were involved in setting up research objectives, gathering and processing data, and interpreting results, in line with the multi-actor approach promoted by the European Commission of the EU.

In Chap. 13, Robert Gallucci highlights the review of one negotiation and agreement, which had political, technical, and scientific elements to it, which were poorly understood, when policy was being debated. He suggests that the same may be true of other such agreements, be they bilateral strategic arms control agreements with the Russians or multilateral agreements of the kind negotiated with Iran. To draw useful lessons from the history of the first nuclear crisis with North Korea, we need to understand the scientific and technical issues that drove the negotiations between the DPRK and the United States in 1993 and 1994. But at four critical points during the negotiations, neither the press nor senior officials seem to have understood the
technology upon which decisions and assessments were being made. Complex issues were distorted to produce a simpler, more convenient narrative. This suggests that we should be careful in our analysis of this and other negotiations that turn on scientific calculations.

In Chap. 14, Mauro Galluccio and Aaron T. Beck explain how the area of research on cognitive biases has made clear that the kinds of judgements people are likely to make may well be affected by their own baggage in the form of various biases and perceptual predispositions. Politicians and scientists, like the rest of us, may be affected by various biases. Cognitive biases anchor our understanding. We need to investigate social-cognitive biases, because even if we have a lot of experience, if we are “trapped” in biases we will miss the insights sitting right in front of us. As in every policy, scientific evidence must be weighed alongside numerous interests and considerations in order to find balanced and appropriate policymaking for the people. Always remember we are all in the same boat and be careful not to be taken hostage by deeply held core beliefs, misperceptions, misunderstandings, and competitive behaviours.

Concluding Remarks

The tension between cooperation and competition is inherent in interpersonal negotiation. It has been shown that it is precisely cooperation and not competition that has allowed complexity to evolve. We need an implemented cooperation between scientists and politicians/diplomats. The act of willing to cooperate together implies the ability to perceive the other as fundamentally similar to oneself in intentionality: therefore, the joining with another in really sharing the object of attention establishes an essentially equal interpersonal perception, which is the fundamental characteristic of cooperative motivation. At this point, scientists could be able to manage the tension present in policymakers (and in themselves as well) between hard-core beliefs and world views at large, and the adaptation process of those beliefs and views to dissonant evidence. By using the language and benefits of science, people from very different regions, religions, ideologies, and social backgrounds can develop negotiating consensual approaches for tackling global issues, achieving development goals, and reducing risks, vulnerabilities, and violence. It has never been more important to communicate the way science, politics, and diplomacy should work together. The two spheres, which might seem to be discordant and distant, are in fact linked, to a more careful analysis, by an intrinsic complementarity, necessary to achieve solid and lasting policymaking goals in the long term.