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Science Diplomacy as a New Form of Arctic Governance

Ebru Caymaz
Canakkale Onsekiz Mart University, Turkey

Global challenges, such as human-induced climate change, food security, nuclear non-proliferation and infectious diseases have led to transitions and transformations world-wide, which also necessitated international cooperation to address these multi-layered challenges accordingly. While alarming rate of melting sea ice and loss of glaciermass, as well as depletion of natural resources have carried the terms sustainability and sustainable development at the top of the global agenda, the diplomatic value of cross-border scientific networks are increasingly recognized in polar regions. The tools and techniques of foreign policy are obliged to comply with a world of increasing scientific and technical complexity in order to formulate an effective diplomacy process. Hence, at the nexus of science and diplomacy, science diplomacy holds potential to promote sustainability governance across the Arctic region. The aim of this study is to examine the role of science diplomacy as a new form of governance in the Arctic. How science diplomacy generates solutions for inherent tensions, as well as its boundaries and limitations are also discussed.

Keywords: Arctic, Arctic governance, Arctic science diplomacy, science diplomacy

Introduction

Science diplomacy, which is fundamentally defined as a threefold process to elicit sustained ways of communication and cooperation, has incentivized collaboration even among the non-allied states. As the global challenges, such as human-induced climate change have become one of the urgent matters in terms of sustainability of the world, a trust building framework to respond to these challenges is perceived as a resolution. At their core, both science and diplomacy is associated with open-ended negotiations based upon peaceful processes. In addition to Arctic states, active participation of European Union, as well as Asian states and their scientific contributions have initiated a new form of governance in the Arctic.

The significance of science diplomacy is emphasized in legal documents of several nations and yet many foreign ministries and services still largely rely on external scientific advice often produced by foreign policy research institutions. In order to reduce this dependency, national research organizations have opened offices, especially in key partner countries and accelerated their internalization efforts. However, while these efforts are currently proceeding in a more institutional manner, there are also negative views envisioning a potential conflict generally based on realism perspective. The aim of this paper is to investigate the future implications of science diplomacy as a new form of Arctic governance. After a literature review on science diplomacy, the development of Arctic science diplomacy within the polar research framework is briefly given. In conclusion part, the future implications of science diplomacy are further discussed in terms of new challenges and emerging opportunities.

Ebru Caymaz, Ph.D., assistant professor, Canakkale Onsekiz Mart University, Turkey.

Science Diplomacy as a New Form of Polar Governance

Although advances in science have significant impacts on humanity throughout the centuries, the term science diplomacy is institutionalized and internationalized in recent years (Turekian, 2018). There are strong organizations worldwide which renew the momentum and in today's world, scientists belonging to these powerful organizations offer alternative channels for establishing dialogue even between hostile states. Although the emergence of the science diplomacy concept is based on different dates by various researchers, it is after the 2000s that it started to be discussed conceptually in the international arena. In the first definition made by Fedoroff (2009), science diplomacy is defined as the use of scientific cooperation between states to address common problems faced by humanity in the 21st century and to establish constructive international partnerships. The scope of science diplomacy has been further expanded by the European Commission (2016); it is expressed as the use of science to prevent conflicts and crises, to support policy making, and to improve international relations in areas of conflict where the universal language of science can open new communication channels and build trust.

The establishment of the Center for Science Diplomacy within the body of American Association for the Advancement of Scientific Research (AAAS) in 2008, the International Meeting "New Horizons in Science Diplomacy" organized by the Royal Society in 2009 and the introduction of the first magazine of the field "Science & Science Diplomacy" in 2012 accelerated the institutionalization process of the concept (Turekian & Neureiter, 2012). In 2010, AAAS and the Royal Society of the United Kingdom prepared a report outlining the general framework of science diplomacy (The Royal Society, 2010). As science and diplomacy interact at different levels, science diplomacy serves to achieve foreign policy goals at three levels: the use of science in diplomacy, diplomacy for science, and science for diplomacy. The use of science in diplomacy means providing scientific consultancy and using science when making foreign policy decisions. What is meant by diplomacy for science is the use of diplomacy to establish new scientific partnerships and facilitate international scientific collaborations. Science for diplomacy means using science to establish stable and lasting relations with the international community through scientific and technological partnerships (The Royal Society, 2010). There are two prerequisites for classifying international scientific cooperation practices as science diplomacy: political will and diplomatic involvement. Otherwise, all scientific efforts would remain solely as scientific cooperation.

Since Antarctica is granted as a "natural reserve, devoted to peace and science" by Madrid Protocol (1998, Art. 2) (www.antarctica.gov.au), its governance process runs more smoothly compared to the Arctic. On the other hand, there are different views regarding the Arctic which range from militarization race and great power competition to "Arctic exceptionalism" (Exner-Pirot & Murray, 2017). World Economic Forum have published highly comprehensive series of studies consisting of all Arctic-related issues in which the latest strategic trends, research and analysis are explored and governance issues can be viewed as a whole[1].

In terms of Arctic science diplomacy, Norway, which provides the necessary infrastructure and coordination for bilateral and multilateral scientific cooperation in the region, can be given as a distinctive example. Owing to its unique status, Svalbard Archipelago allows scientists from different countries to conduct on-site Arctic research. In addition to four flagship programs initiated by the international community, scientific infrastructure facilities in Ny-Ålesund, Longyearbyen, Barentsburg and Hornsund, the Svalbard

[1] For more information see https://intelligence.weforum.org/topics/a1Gb0000000LGkpEAG?tab=publications

Science Center established in Longyearbyen, the administrative center of the islands, the scientific research portal and the university center (UNIS), which has been providing applied higher education to students from all over the world since 1993 (The Research Council of Norway, 2019), can be cited as examples of Norway's successful initiatives. Furthermore, the unusual degree of cooperation between Russia and Norway in the Arctic also highlights the effectiveness of science diplomacy. New and emerging actors at the Arctic Council foreshadow that great powers and smaller powers will continue to promote norms and institutions within an Arctic international society.

Revisiting the New and Emerging Actors From the Perspective of English School

The structure of the Arctic Council continues to evolve as an international higher forum upon the applications from non-Arcticstates. Following China, which attempted to obtain permanent observer member status in 2006 as a non-Arctic state, the applications of South Korea in 2008, Japan in 2009, and Singapore and India in 2012 were accepted and approved at the Council meeting. As of 2020, the Arctic Council has eight permanent members, six organizations representing the people of the region, six working groups and 38 observer members (www.arctic-council.org/en/). While traditional theories fail to explain the cooperation and collaboration degree among different actors, the English School offers a different point of view pertaining to the Arctic region with an emphasis on international society as well as promoting the perspective of a transition from the "system of states" to the "society of states". The English School asserts that international order and justice could be sustained through rules, norms and institutions (Little, 1998).

Identifying itself as a "near Arctic state" and "stakeholder" (2018), the presence of China in the Arctic has raised more suspicions compared to other non-Arctic actors within the region and it has even been labeled as "expansionist" (Su & Lanteigne, 2015). In 2013 speculations about China's oil and gas investments as well as potential military outposts and interest in shipping lanes attracted the attention of the international media. China has responded to these speculations by developing substantial scientific collaborations and networks (Su & Mayer, 2018). Attending the International Arctic Science Committee in 1996, organizing its first Arctic expeditions in 1999, initiating the Asian Forum for Polar Sciences together with South Korea and Japan in 2004, establishing a bilateral annual dialogue with Russia in 2012 and the establishment of multilateral platform China Nordic Arctic Research Center (CNARC) in 2013 as well as strengthening the domestic research communities and institutional frameworks for polar research, China has developed an efficient science diplomacy process as a keen actor in the Arctic. The vibrant polar research community of China includes a wide range of scholars from natural and social sciences (Yang, 2012).

Apart from environmental issues and scientific research, the necessity for establishing an Arctic security forum in terms of Arctic governance has recently been highlighted by Bouffard (2020). It is not hard to project that security issues will be the top priority of the Arctic agenda while great powers are contesting to exploit limited resources and try to extend their jurisdiction. Accordingly, The English School can offer generative solutions for Arctic and Antarctic security dialogue through institutional perspective.

Conclusion and Suggestions

Due to global warming and climate change, the Arctic region has turned into a very socio-ecological area in recent years. When these changes are combined with globalization, many economic opportunities will emerge in the region in the coming years and there will be an increase in the number of actors who want to take

advantage of these opportunities. While Arctic states, such as Russia and Canada fulfill their economic and political goals for the Arctic region through various legal regulations based on international law (i.e., the Arctic Waters Pollution Prevention Act), non-Arctic states, such as China, Germany and the United Kingdom try to legitimize their interests in the region under the name of scientific research with the rights granted to them by being a party to the Svalbard Treaty.

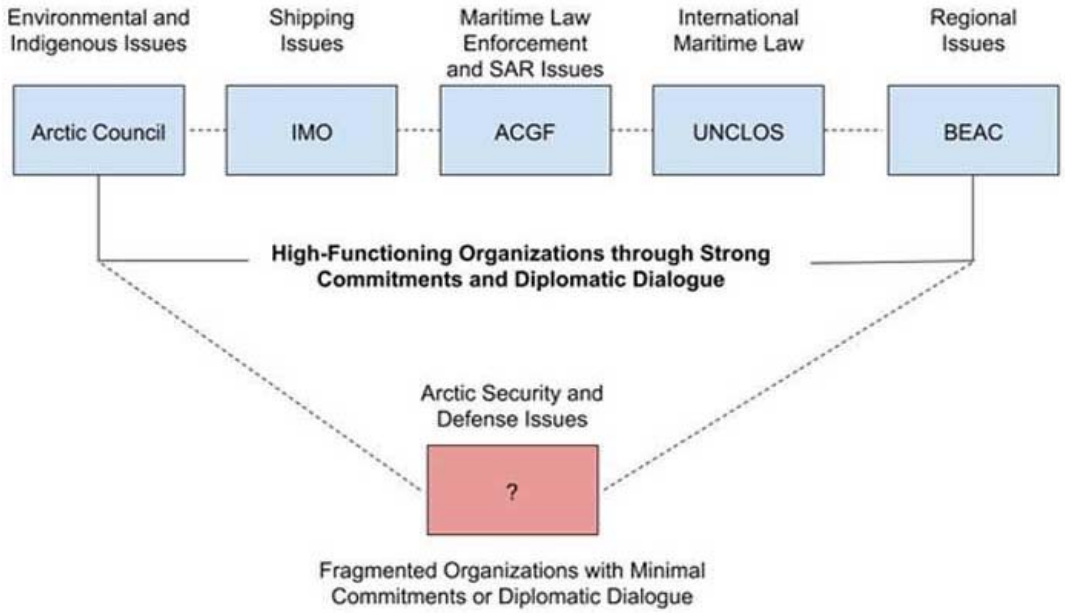

Figure 1. Current Arctic organizations and responsibilities (Bouffard, 2020).

Science diplomacy holds a major role in international science communication and facilitation. As an integral source of soft power, it can enable building substantial and long-term science dialogue ranging from global to national actors. Since being such an overarching instrument, the process of science diplomacy experiences paradigm shifts driven by the multidimensional and multilateral changes. Therefore, apart from negative views envisioning potential conflicts in the region, science diplomacy offers resolutions to unite all actors within the Arctic. For instance, the 389-day MOSAIC expedition, started in 2019 with the initiative of the Alfred Wegener Institute based in Germany and the participation of 442 experts from 20 countries (www.mosaic-expedition.org), has become one of the most successful examples of Arctic science diplomacy and underlined the international interest pertaining to the Arctic. Eventually, it is a well-known fact that scientific achievements depend on political cooperation to be fully effective. Therefore, international research stations can be a constructive example to address the junction between climate change, science diplomacy, geopolitics, law and globalization that will shape the future of the Arctic in the coming years. In order to overcome persistent global challenges, governments are required to integrate science into both their domestic and foreign policy agendas.

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