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Arctic science diplomacy in new geopolitical conditions: From "soft" power to "hard" dialogue?

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Commentary

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Abstract

Recent years have shown that international science dialogue exists at the edge of turbulence and is disturbed by different geopolitical events. The notion of science diplomacy has taken the critical discourse to different levels of actors. Such a discourse exposes the epistemological ambivalence and methodological imbalance of both science and diplomacy in this phenomenon. Current geopolitical conditions have revealed new edges of science diplomacy instruments that spread from "soft" to "hard" practices. Different levels of dialogue and cooperation have shown different examples of resilience and adaptability (or the opposite) to the external turbulence. The phenomenon of regionalisation in science diplomacy is facing criticism from the science community while the current geopolitical situation has dramatically influenced the Arctic science dialogue, as well as governance practices. This commentary discusses particular examples of existing Arctic science diplomacy practices in current geopolitical conditions which are reflected in the Arctic theoretical and practical discourse.

Introduction

International scientific cooperation has become one of the most important components of international relations. This trend has directly affected the sphere of international cooperation in the Arctic, where scientific cooperation from the very beginning has played a key role both directly in the development of the Arctic territories and in laying the foundation for the system of international cooperation and governance in general. For example, the involvement of many non-Arctic countries in Arctic affairs was possible due to a large extent to their contribution to Arctic science and research.

Today, scientists from different countries study the Arctic through different lenses including the consequences of climate change, the structure of the ice and its melting, issues of resource management, the problem of reducing biodiversity, the traditional way of life of indigenous peoples, health and urbanisation, etc. A comprehensive system of international scientific cooperation in natural, technical, and socio-humanitarian sciences, which goes hand in hand with traditional knowledge, has been established in the Arctic. At the same time, the role of scientists and researchers has in recent years moved far beyond the limits of purely their research fields towards active roles in diplomatic activities, influencing the connections between countries and nations. Scientists and scholars have increasingly taken on the functions not only of collecting and processing information and producing new knowledge, but also of promoting the interests of the country they represent in various international fora, implementing international cooperation at the bilateral and multilateral levels, and even making recommendations to foreign policy agencies. It is becoming obvious that science is taking an active part in the Arctic governance. This has give rise to a new regional phenomenon of *Arctic science diplomacy*. The scientific discourse when discussing this practice is not consistent regarding the strict regionalisation of the theoretical discourse of science diplomacy process, even though the regional institutions of international cooperation exist and operate quite successfully in practice (Barents Euro-Arctic region cooperation, BRICS, The Shanghai cooperation organisation, etc.).

The institutes of cooperation, including science cooperation in the Arctic, are known as successful platforms which are having multiplicative effects on all aspects of Arctic livelihood from everyday life, science to economics and geopolitics. This underlines the high social relevance of science and, thus, science diplomacy as the overarching platform of the latter. In this article, we define Arctic science diplomacy as a form of new diplomacy and/or regional governance tool, the strategic goal of which is to develop, maintain, facilitate, and promote international scientific cooperation to mitigate and overcome the specific Arctic problems on the way to sustainable development, as well as to promote a positive image of the state using "soft" power tools (joint scientific projects, publications, international scientific conferences, round tables, educational exchanges, etc.). The institutional basis for such a diplomacy is the

architecture of international scientific cooperation which is characterised by great connectivity between existing and emerging institutions.

In our view, the emphasis on scientific cooperation in international relations in the Arctic has long allowed Arctic states to successfully avoid the "spillover" of a negative world political agenda into international relations in the Arctic and to maintain the Arctic as a "zone of peace and cooperation." Science diplomacy was successfully used by Arctic states as a confidence-building means to support cooperation, mostly in the fields of low politics. However, the situation has changed dramatically after the events of February 2022, when, for the first time in the history of modern international relations (starting in the 1990s), all ties between the Arctic states, including in the scientific sphere, were severed. The sanctions policy of Western countries against Russia has affected the sphere of scientific cooperation. In our opinion, this has led to changes in a number of important content characteristics of science diplomacy in the Arctic.

In this commentary, we discuss the practices and conditions of science diplomacy at the current time of Ukrainian-Russian crisis which has dramatically influenced Arctic science cooperation and can thus be evidence of the existence and importance of such a regionalism.

In this discussion, the authors comment on the subject through the lenses of the current situation and through the position of participant observation, which shows that geopolitical events of 2022 have created turbulent conditions in which international scientific and technological cooperation is undergoing a transformation of institutional systems, as well as of the ways in which the Russian research community is integrated into them. The existing traditional institutions of science cooperation have shown their practical effectiveness, but with the onset of the critical geopolitical situation, have lost flexibility in decision-making – with regard to the Arctic discourse, many of them have either suspended cooperation with the Russian representation (e.g. Arrctic Council and its Working Groups, University of the Arctic) or significantly reduced it (e.g. International Arctic Science Committee). Such decisions, despite historical precedents in the past (the Cold War of 1947–1991), were unexpected and emotional for members of the scientific community involved in long-standing partnerships.

The situation described above depends on many components, including an extensive architecture of international scientific cooperation in the Arctic, which is defined by diverse components from infrastructural and financial mechanisms, to the functioning of international processes in the legal field of a particular state. An example in the financial sphere might be the well-functioning cross-border cooperation programmes facilitated by the European Union (e.g. Kolarctic CBC, Karelia CBC, etc.), which actively existed in the practice of regional international cooperation and were suspended in 2022 (Kolarctic website – https://kolarctic.info/). The ISIRA (International Science Initiative in the Russian Arctic – https://iasc.info/our-work/isira) Advisory Group of IASC (International Arctic Science Committee) has been an active communicative science institute since the year of its development in 1993 and currently is going through a reduction of its activities. Infrastructural scientific cooperation also has different components, from laboratory complexes and field research stations to icebreaker fleet capacities. For example, the INTERACT project (International Network for Ground-based Research and Monitoring in the Arctic) under the EU Horizon 2020, which has a pan-Arctic character and has been conducted since 2011 in several phases, was suspended with regard to the Russian partners, but serves as a clear example of how the practice of isolationism affects the capacities of projects. Here, the Russian stations in the project constituted 21 out of the 89 stations among the 15 participating states, which led to comparative project losses of 25% of the infrastructural capacity and about 50% of its access to the Arctic in territorial terms (INTERACT website – https://eu-interact.org/). This also questions the holistic nature and view to the Arctic research which is the fundamental characteristic of all changes happening in the Arctic and thus, directly or indirectly, influences the sustainable development of the Arctic, security and livelihood.

Science as a "soft" power tool

The concept of science diplomacy has gained momentum over the past twenty years in a public discourse that brings together science policy and international affairs (Flink, 2020). A fair number of papers have already been published on science diplomacy in general (Berkman, 2020; Fedoroff, 2009; Krasnyak, 2018; Ruffini, 2017), on Arctic science diplomacy in particular (Berkman, Kullerud, Pope, Vylegzhanin, & Young, 2017; Gutenev & Sergunin, 2022; Goodsite, Bertelsen, & Pertoldi-Bianchi, 2016; Wood-Donnelly & Bartels, 2016) and related Arctic governance discourses (Berkman, 2019; Caymaz, 2021). Most of these works are devoted to conceptualising the phenomenon (defining the concept, its content, reviewing forms and mechanisms). The authors pay attention to the definition of key actors, levels of cooperation, problem field, and many more for the phenomenon.

The approaches presented in the scholarly literature give us grounds to highlight important conclusions regarding "science diplomacy." Firstly, science diplomacy is classified as a form of public diplomacy (Bukalova, 2018; Vasilyeva, 2019) and an instrument of "soft power" of a country's foreign policy, which includes three areas: science in diplomacy, science for diplomacy, and diplomacy for science (The Royal Society, 2010). Secondly, along with the traditional actors of international cooperation (states and international organisations), we have a group of actors – scientists and scholars who have begun to perform diplomatic functions as well; as well as private foundations and scientific and technological cooperation organisations. Thirdly, science diplomacy is aimed at finding scientific approaches to solving regional and global problems.

The theoretical development of science diplomacy includes the formation of its own practical tools at the intersection of science and diplomacy, which include strategic tools (policy documents that aim to give directions to what actors want to achieve and how to realise their policy goals), operational tools (bilateral and multilateral agreements on science and technology (S&T) cooperation, S&T advisory boards at the level of states, S&T advisors attached to embassies, creation of national and regional funds to support S&T cooperation, opening of national or regional research funding schemes to third party researchers), and, finally, support tools (training activities regarding science diplomacy, various scientific and educational international platforms, involving scientists and diplomats, joint expert meetings, etc.) (Langenhove, 2017). We should also add to this list another important tool that is actively used in both science and politics: dialogue and discussion, which provide an opportunity not only to exchange information, opinions and ideas, but, most importantly, allow the parties to hear each other and, if possible, come to a common consensus. This tool is rarely noticed in the discourse as it represents the basics of cooperative practices and is usually

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implied. The approach presented reveals a wide range of tools of science diplomacy of a formal and informal nature, but all of them usually belong to the "soft" power instruments.

Arctic science diplomacy, as a kind of science diplomacy conducted in the Arctic region, has entered the academic and political lexicon of Arctic and non-Arctic countries promoting their interests in the High North. Such non-Arctic states as Great Britain, Germany, Japan, Switzerland, China, and South Korea cite their considerable scientific and financial potential for large-scale Arctic research as an argument for their presence in the Arctic. They largely identify their Arctic strategies by conducting Arctic science diplomacy in this region. A number of Arctic states (Canada, Norway, Finland, and Sweden) have also begun to bring to the forefront of their Arctic policy the tasks of conducting a variety of Arctic research in the natural as well as in the social and human sciences. However, it would be premature to assume that the Arctic science diplomacy phenomenon itself is adequately understood from a theoretical point of view and that all Arctic policy actors have fully understood the need for it and have clearly formulated their priorities in this area. However, scientific cooperation is undoubtedly one of the foundations of international cooperation in the Arctic with the participation of Arctic and non-Arctic countries. In practice, most Arctic countries already have a polar research infrastructure that serves as the basis for their diplomacy practices, including research institutes and universities, field stations, and icebreaker fleets.

Arctic science diplomacy: from "soft" to "hard" edges

Until recently, the countries participating in international Arctic cooperation managed to keep the Arctic far from the world's geopolitical collisions and transformations. It is important to note that the events of 2014 and the COVID-19 pandemic have had some negative impact on cooperation between Arctic as well as non-Arctic countries in the region: many international economic and infrastructure projects in the Russian Arctic, including their scientific component, have been discontinued; a number of research projects in the Arctic Council's working groups have been terminated or postponed; the COVID-19 pandemic has led to the cancellation of a number of polar sea and land expeditions, as well as the joint work of scientists at research polar stations and institutes. International conferences were transferred to an online format that could not replace the live communication of Arctic scientists among themselves. However, there was no total cessation of scientific cooperation in the Arctic. The Arctic and non-Arctic countries tried to adopt to the new conditions. Unfortunately, the events of February 2022 led to the partial freezing of contacts between Russia, the largest Arctic power, and a group of Western Arctic countries, putting the work of the Arctic Council "on pause."

In fact, the architecture of international scientific cooperation is characterised by a great connectivity of institutions – organisational connectivity. On the one hand, this is a positive aspect, contributing to the continuity of the scientific agenda in the global arena, but on the other hand it leads to the formation of new interaction practices, which are not always within the interests and competence of scientific organisations, such as the practice of stating and declaring an organisational position on a particular, often political, agenda.

The International Council for Science, for example, which has expressed support and solidarity for both Russian and Ukrainian scientists (ISC website – https://council.science/), is a striking example of such practices at different levels in the current period. The International Arctic Science Committee (IASC) has condemned the current geopolitical conflict and reduced, but not suspended its work with the Russian representation. This is an important example, because as an international organisation, the IASC adheres to its statutory principles, which proclaim that "the IASC Council will perform its functions by consensus, taking into account the regional interests of the eight Arctic countries." These principles are reflected in the founding articles establishing the IASC by the eight Arctic states in 1990, including the USSR (IASC website – https://iasc.info/about/626-iasc-history). An interesting example is also the University of the Arctic (UArctic), which has completely suspended its work with a wide network of Russian partners (UArctic website – https://www.uarctic.org/). Although UArctic is a network of Arctic educational and science institutions and was created by the endorsement of the Arctic Council, its administrative and managerial resources operate within the legal framework of the state of Finland, which was also one of the factors in making relevant decisions, as well as the decisions made within the Council. The Arctic Council itself, by decision of seven of the eight Arctic countries, suspended its activities on March 3, 2022 (Joint Statement of March 2022), and partially resumed them on June 8, 2022 (Joint Statement of June 2022), in those projects where the Russian Federation is not involved even though Russia chairs the Arctic Council in 2021–2023.

At the same time, the events of 2022 showed that science can also be used as an instrument of "hard" force: by imposing sanctions and restrictions on scientific ties and contacts, joint projects, isolating scientists of the country against which sanctions are imposed from the world scientific community, closing their access to world information databases, terminating cooperation agreements, banning the official affiliation of Russian scientists at major international venues, etc. In most cases, Western countries try to maintain personal scientific contacts with Russian researchers, mostly outside the institutional frameworks. But a number of difficulties arise. Travel restrictions caused by the ban on working with Russian institutions, the temporary suspension of visas and restrictions on other immigration rules for Russian citizens, limited flight options, and restrictions on financial transactions make scientific exchange in the Arctic region extremely difficult. The conflict between Russia and the countries of the so-called "collective West" has shown how security issues can lead to the interruption of knowledge and data sharing through political action.

In the current geopolitical conditions that have emerged since 2022, issues of competition and national interests have become prevalent in all discourses and at different levels of the international Arctic scientific arena, even getting confrontational in nature. For example, through the whole period there was an active semantisation of organisational rhetoric, followed by the declaration of the position of one or another organisation on issues outside the sphere of priorities and competence of cooperation institutions and their members, which led in some moments to a policy of isolationism of the Russian scientific community. Also in 2022, the so-called "diplomacy of coercion" enters theoretical discourse and practice, which in the scientific sphere is expressed, for example, in the formation and support of institutional barriers of a technical and logistical nature; reduced mobility of scientists due to forced economic restrictions, as well as popularisation of the phenomenon "independent scientist" in the practice of the Russian scientific community (which is not common there). Such phenomena potentially expels the inclusive manner of the science communities nowadays and creates conflictogenic situations due

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to formation of selective approaches to cooperation groups – e.g. dependent Russian scientists, independent Russian scientists, and Russian scientists with foreign affiliation. These and other examples serve as a vivid manifestation of the components of "confrontation and competition" in the Arctic international scientific dialogue, slow down the effectiveness of existing cooperation institutions, and lead away from a balanced Arctic dialogue not only in the scientific scope but also in other areas, affecting environmental issues and security of life in the region for the countries and peoples inhabiting the Arctic space.

It is clear that global interests comprise integrational efforts and goals which imply the cooperation component while national interests mostly set the competition narrative or confrontation as of the current period. The geopolitical crisis has formed an open space for theoretical scientific discourse within the concept of "global interests = cooperation" and "national interests = competition" to discuss strategic directions of further balanced development not only in the Arctic region but also in international and global space. It is undoubtable that science cooperation, including that in the Arctic, has passed through the large historical venues and modalities of its existence, from the eras of tragic and heroic explorations through competitive notions to the times of successful cooperative examples (e.g. International Polar Year).

Setting methodological questions

The present commentary aims to discuss examples of the existing Arctic science diplomacy practices under current geopolitical conditions by briefly touching some theoretical and practical aspects as they form a holistic view to the observed processes.

An analysis of the theoretical aspects of science diplomacy and a theoretical synthesis of its practical examples indicate that science diplomacy as a research concept is currently undergoing a number of changes. The importance of studying science diplomacy as a phenomenon is caused both by its constant internal methodological transformation and by the active development of new ways of practical application of knowledge in this field, including global processes and processes in specific regions, including the Arctic. In today's rapidly changing world, the phenomenon of science diplomacy is being filled with new volumes and facets, changing its paradigmatic foundations (Zaika, Ryabova, & Sergunin, 2023).

This paradigm shift in science diplomacy is what we are witnessing today. The issues caused by the epidemiological and geopolitical events of recent years (such as temporarily closed national borders, limited mobility and the transition to online formats of communication, filling scientific interaction with political components, developing new forms and instruments of scientific dialogue, diversifying the familiar geographical areas of cooperation) develop new directions of science diplomacy in general and in particular in the Arctic. Many of these directions have emerged in response to the rapidly changing realities of recent times. Such trends can be roughly summarised into the following new trends, each of which may be of great interest for further research into the phenomenon of Arctic science diplomacy.

First, there is the *institutionalisation of virtual forms* of scholarly dialogue and science diplomacy. The institutionalisation of online conferences and discussions with active dialogue through online platforms and social networks has become a global practice and a bright new trend. For example, the social network Twitter has contributed to the development of so-called Twitter diplomacy (*Twiplomacy*), which is connected to the public and science diplomacy directly and is actively supported by the scientific and diplomatic community (Chhabra, 2020). With limited mobility due to the COVID-19 pandemic, new forms of transnational access during the field season have emerged – "remote access" and "virtual access," which allow to maintain consistency in collaborative scientific fieldwork, follow a protocol of work without data loss, and broaden the circle of interested stakeholders by involving them in scientific projects, including in the Arctic. Reliable access to Arctic research infrastructure is critical to the future of polar science (Ruck et al., 2022).

Second is the emergence of *new forms of diplomacy on the continuum of urgency*, that is, in the process of making informed urgent decisions to address immediate and long-term challenges (Young, Berkman, & Vylegzhanin, 2020). The need for urgent decisions during a pandemic created a continuum of urgencies, affecting not only the world of diplomacy but also the mounting tensions and rivalries in international relations. At the same time, the situation underscored the importance of science on a global scale. In particular, the outbreak of disease pointed to the urgent need to involve medicine, science, engineering, and the humanities in all forms of scientific convergence in the fight against the pandemic. This has led to the development of a new form of diplomacy, which currently straddles the two paradoxes of Vaccine diplomacy and Vaccine nationalism (Lee, 2023; Su et al., 2021). These two phenomena have been actively reflected not only in academic discourse but also in official UN publications, as they clearly reflect the two opposing sides of scientific diplomacy: the general and national interests, opposing each other in a time of global pandemic. An interesting avenue for future research could be the study of the peculiarities of these processes in the Arctic.

Third, as mentioned above there is a shift in the focus of discourse priorities in the field of science diplomacy from studying cooperation to studying *cooperation-competition issues*. The trend of "vaccine diplomacy" and its existence in the "vaccine nationalism" paradigm has renewed scholarly debates about the dualistic nature of international cooperation on the cooperation-competition frontier and thus the dual dialectic logic of science diplomacy as a process. There are practices of science diplomacy in countries that seek to gain a scientific advantage over others, inspired by a competitive spirit. In addition to supporting international scientific cooperation, diplomatic apparatuses pursue policies aimed at attracting foreign talent and access to scientific resources internationally or exert influence through scientific assets and research programmes (Rüffin & Rüland, 2022). Examining these processes in the Arctic, especially in the context of recent geopolitical changes, is an important task for future research.

Fourth, there is the increasing consideration of *science diplomacy as a form of Arctic governance* in the current science discoure. With the rise of non-state actors in recent decades, science diplomacy has gradually become one of the most sought-after forms of external influence on sovereign states and societies in other countries. Arctic science diplomacy within this approach is an effective and attractive instrument of foreign policy influence in the region, and attention to this instrument, especially in the current geopolitical conditions, should be considered in the Arctic research discourse. This methodological aspect supports the inclusion of regionalisation to the science diplomacy debate.

Finally, there is a trend towards increased *epistemological ambivalence in science diplomacy*, that is, an increase in both ambiguity in the understanding of the underlying concepts and contradictory processes of science diplomacy implementation.

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Science diplomacy is an interdisciplinary and international process that involves making informed decisions to balance common and national interests for the benefit of the world or specific regions of the planet, such as the Arctic. The theory and methods of informed decision-making operate on a "continuum of urgencies" from security to the scales of temporal sustainability at both the national and global levels (Berkman, 2020). This ambivalent nature of science diplomacy at the borderline of global and national interests gives an idealised view of the phenomenon, whereas today's practices and logic of science diplomacy theory point to a comprehensive process of politicisation of the academic space, intensified by the geopolitical events of 2022. The existence of such ambivalence in the philosophical and methodological basis of science diplomacy as scientific knowledge makes it difficult to formalise its conceptual apparatus, methodology, and tools, but further work in this direction is necessary and essential especially in Arctic affairs (Zaika et al., 2023).

Conclusions

To summarise, science today is certainly a social construct that boosts the resilience within socially ecological systems but also is an important element of countries' foreign policies. Until recently, science was the most important factor in the "soft" power of states, contributing to the effective development of international cooperation at all levels: national, regional, global.

International science cooperation has a very complex architecture that includes structural, organisational, financial, logistic levels with their relevant regional peculiarities. The above-mentioned examples and practices of science diplomacy in the Arctic have revealed the importance of a regional approach to the science diplomacy practical discourse and theory which strengthens at times of paradigm shifts.

Today, we are witnessing such a shift in (Arctic) science diplomacy from "soft" power indicating "global interests" to "hard" power indicating "national interests." The current practices and "hard dialogue" tools became the new reality for the western part of the international research community. Nevertheless, such tools have regional implementation and influence which relates to natural ecosystems of the Artic and the world, as well as the livelihood and well-being of more than 4 million indigenous and non-indigenous people of the Arctic.

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