The Future of Science Diplomacy in Arctic Law

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With its unique natural characteristics and global significance in supporting Earth's systems, the Arctic has been crucial in translating science-based knowledge into a regulatory framework. The implications of change in the Arctic are profound, both within the region and globally, as evidenced by numerous research-based scientific findings. Global warming and its disproportionate impact on the Arctic—the increase in temperature is four times faster than the global average[1]—is causing rapid thawing of the cryosphere. Given the cryosphere's role as the regulator of the Earth's climate systems, its continued decline will bring harsh consequences not just for the Arctic but for the planet as a whole. Indeed, developments in the Arctic have brought a range of adverse global impacts: sea levels are rising with the melting glaciers; ocean circulation has altered; and extreme weather events are intensified. The scientific evidence for the Arctic's interconnectedness with the rest of the world is crucial to understanding the global climate and environmental regime. Hence, the promotion of science and science-based knowledge has become vital in the political cooperation frameworks among the Arctic actors.

The establishment of the Arctic Environmental Protection Strategy (AEPS) in 1991 was one of the first initiatives for a political process that would integrate a science-based approach into a structure designed for inter-state cooperation.[2] This framework later transformed into a more structured institution—the Arctic Council, a high-level intergovernmental forum of the eight Arctic countries.[3] In its engaging Indigenous peoples' representation, the Arctic Council has pioneered the inclusion of valuable evidence-based Indigenous knowledge developed through experience. Indigenous peoples' knowledge encompasses changes in the Arctic's natural environment based on long-term

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[1] Rantanen, M., Karpechko, A.Y., Lipponen, A. *et al.*, "The Arctic has warmed nearly four times faster than the globe since 1979. *Commun Earth Environ* 3, 168 (2022). https://doi.org/10.1038/s43247-022-00498-3.

[2] Declaration on the Protection of the Arctic, Arctic Environmental Protection Strategy (AEPS), Rovaniemi, Finland (1991). https://library.arcticportal.org/1542/1/artic_environment.pdf.

[3] Ottawa Declaration (1996). Declaration on the Establishment of the Arctic Council. Joint communique of the Governments of the Arctic Countries, Ottawa, Canada, September 19 (1996). https://oaarchive.arctic-council.org/server/api/core/bitstreams/bdc15f51-fb91-4e0d-9037-3e8618e7b98f/content.

observations spanning generations.[4] Such a body of alternative knowledge validates, legitimizes and augments the comprehensive findings on change in the Arctic gained through scientific endeavor.

Today, the Arctic Council is the central forum through which the eight Arctic states promote inter-state cooperation for environmental protection and sustainable development. Environmental protection and sustainable development in the Arctic call for a governance framework in which scientific findings translate into legal norms. The Arctic Climate Impact Assessment (ACIA), an Arctic Council initiative carried out in 2004/5 and one of the first studies of its kind, represents a ground-breaking work.[5] It has provided evidence-based information on changes in the Arctic, including the impacts of climate change, and has implications for societies, both within and beyond the region. The Arctic Council, through its six Working Groups, produces science-based knowledge and assessment reports that shape policies for Arctic states and other stakeholders and serve to enhance systematic collaboration. Importantly, the Council's endorsement of the reports, findings, and subsequent policy recommendations produced through the political decision-making process takes on the status of "soft law."[6] Although not strictly legally binding, soft law is crucial in setting standards and shaping the behavior of state and non-state actors. While the Arctic model for cooperation reflects the search for practicable solutions to Arctic problems, today many non-Arctic countries worldwide have embraced values that the Arctic Council promotes, and participate as observers in the Council-led governance framework. Over the years, the Council's efforts have been widely recognized as a successful model for inter-governmental cooperation.

Significantly, this science-based approach to cooperation has also led to the establishment of formal legal mechanisms. For example, the Arctic states adopted a set of legally binding instruments under the auspices of the Arctic Council, with these primarily based in assessment reports and findings produced by the Council in response to the most urgent Arctic

[4] Houde, M., Krümmel, Eva M., Mustonen, T., *et al*., "Contributions and perspectives of Indigenous Peoples to the study of mercury in the Arctic", *Science of The Total Environment*, 841, (2022). https://doi.org/10.1016/j.scitotenv.2022.156566.

[5] The Arctic Climate Impact Assessment (ACIA). "ACIA Overview report" (2005). *Cambridge University Press*. 1020 pp.

[6] Escudé, Camille, "The Strength of Flexibility: The Arctic Council in the Arctic Norm-Setting Process". *Arctic Yearbook* (2016): 49.

problems. The Arctic Search and Rescue Agreement of 2011,[7] the Arctic Oil Spill Agreement of 2013,[8] and the Agreement on Enhancing International Arctic Scientific Cooperation of 2017[9] are successful examples. They have served to shape an even stronger cooperation model among the Arctic nations, one relying on and promoting a coordinated approach and legal commitment. Additionally, the Arctic coastal states, along with some of the Council's non-Arctic observer states and the European Union (also an observer), adopted the Central Arctic Ocean Fisheries Agreement in 2018 (entered into force in 2020),[10] which prohibits unregulated fishing as long as there is no scientific data available that would ensure the feasibility of sustainable fishing in an area. The Agreement is driven by the precautionary principle; that is, it avoids potential harm to the Arctic ecosystem given that comprehensive knowledge is lacking on whether or not sustainable fisheries resources are available. What is more notable is that the Agreement recognizes the value of Indigenous knowledge and of incorporating this into understanding ecosystem behavior. Moreover, by including Indigenous peoples in the negotiation process and incorporating their voices in the law-making process, the Council has further acknowledged Indigenous peoples as legitimate actors in the Arctic governance framework. These examples indicate how a science-based framework supplemented by evidence-based Indigenous knowledge systems has greatly enhanced – and will continue to enhance – regulatory norms for a transnational governance framework applicable to the Arctic.

The Arctic governance framework soon became a model arguing for value-based cooperation among nations in other areas of Arctic politics, despite prevailing challenges. The cooperation has long been persuasively described as "Arctic exceptionalism."[11] The obsession with "Arctic exceptionalism," although shaken

[7] Agreement on Cooperation on Aeronautical and Maritime Search and rescue in the Arctic. Arctic Council, (2011). Arctic Council Secretariat, Tromsø: Norway.
[8] Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic. Arctic Council (2013). Arctic Council Secretariat, Tromsø: Norway.
[9] Agreement on Enhancing International Arctic Scientific Cooperation, signed at the Fairbanks Ministerial meeting, 11 May (2017). Arctic Council Secretariat, Tromsø: Norway.
[10] Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean (Ilulissat, entered into force in 2021). https://www.mofa.go.jp/files/000449233.pdf.
[11] Debanck, Lena, "Arctic Exceptionalism under Scrutiny A qualitative content analysis of the increasing securitisation in the European Arctic". CERGU Working Paper Series 2 (2024). University of Gothenburg . https://www.gu.se/sites/default/files/2024-04/CERGU%20WP%202%202024_Lena%20Debanck.pdf.

slightly after Russia's invasion of Crimea in 2014, continued until Russia launched a full-scale invasion of Ukraine in early 2022. In response, seven of the eight members of the Arctic Council paused cooperation with Russia; the Council's activities literally came to a standstill. It should be noted that Russia was its Chair at the time. Although Norway took over the Chairship in 2023 from Russia, no official communication with Russia has resumed. Russia's not participating complicates the functioning of the Arctic Council in its existing form, as the Ottawa Declaration provides that all decisions of the Council are to be consensus-based.[12] In one symptom of the delicate relationship between Russia on one side, and the seven other Council members on the other, in February of this year (2024) Russia threatened to withdraw from the Arctic Council if its work did not align with the country's interests.[13]

The current institutional framework of the Arctic Council ceased to exist without Russia, although a new form might take shape among the seven Western Arctic states. However, with the prevailing atmosphere, the obsession with "Arctic exceptionalism" has literally come to an end. In fact, one might question whether cooperation as built in the Arctic constituted "exceptionalism" in the first place untouched by global power politics. Although the Arctic cooperation model incorporates fundamental environmental values, such as protecting the environment and promoting sustainable development, Arctic governance cannot be separated from the global political ecosystem; in particular, it must take into account the great power game, inasmuch as the Arctic states include two major superpowers – Russia and the United States. A wide range of tensions now weigh upon the Arctic cooperation model: Russia's ambitions to remain a player – or regain its prominence – in global power politics, China's growing presence in Arctic affairs, competition among the great powers, as well as the expansion of NATO to include all the Arctic countries (but Russia) and the consequences for the dynamics of the power balance.

Although the mandate of the Arctic Council is limited to cooperation related to environmental matters, thus excluding issues of "military security",[14] the concept of security has been transformed, particularly since the end of the Cold War.

[12] Article 7, Ottawa Declaration (1996). *Supra* n. 3.
[13] Jonassen, Trine, "Russia Threatens to Withdraw From the Arctic Council". *High North News* (2024). https://www.highnorthnews.com/en/russia-threatens-withdraw-arctic-council.
[14] Ottawa Declaration 1996. *Supra* n. 3.

The root causes of insecurity increasingly stemmed from non-military threats that have placed the human security agenda at the forefront of the Arctic cooperation framework. For example, the motivation for the Search and Rescue Agreement – the first Arctic-specific international legal instrument concluded under the auspices of the Arctic Council – is to promote coordination among the Arctic states to effectively respond to emergencies in Arctic conditions. The particular challenges facing rescue operations in the region include remote locations, harsh weather conditions, long darkness during the winter months and operational challenges linked to the impacts of climate change, such as thinning of the sea ice.

Security concerns stemming from the risks associated with the Arctic's environmental changes and the divides in the political arena between the West and Russia—the latter controlling over half of the Arctic—will likely remain despite the virtual resumption of Arctic Council meetings at the working group level. The absence of data from and on the Russian Arctic on permafrost thaw, wildfires, polar bears, and transforming ecosystems will hamper efforts to accumulate comprehensive collective knowledge on the Arctic change; a particular liability will be the lack of coordinated Arctic research on the risks posed by climate change.[15] It would appear that resuming effective science cooperation with Russia within the Arctic Council framework will not be possible in the foreseeable future. This said, however, international governance regimes, applicable to the Arctic, such as those concerned with climate change, the law of the sea, regulations on maritime shipping, and activities of the IMO, will proceed along their conventional routes. Although Russia threatened to withdraw from the UNCLOS in the Arctic at the beginning of 2024, this was probably no more than a tactic to attract attention in the face of diminishing partnerships in the Arctic. In the end, Russia's potential withdrawal from the UNCLOS would be pointless, given that such an action might not better serve any interests of Russia. It also merits mention that within the framework of the Central Arctic Ocean fisheries agreement Russia participated in the first in-person meeting of the Conference of the Parties (CoP), which took place in November 2022. At the meeting the CoP Rules of Procedure was adopted by consensus, reflecting Russia's continued engagement in the international legal framework despite the prevailing

[15] Devyatkin, Pavel, "Can Russian-US Scientific Cooperation Be Restored as Arctic Warming and the Ukraine War Intensify?" https://www.thenation.com/article/world/russia-global-warming-science-diplomacy/

anxiety and tension.[16] Moreover, despite ongoing turmoil, bilateral cooperation has continued between Russia and the Arctic states on many occasions. For example, Norway collaborates with Russia on fisheries and maritime border issues in the Barents Sea and coast guard rescue operations. Similar initiatives exist between Russia and the United States. Examples are the continuation of the respective coast guards' line of communication on both sides of the Bering Strait to protect people and marine resources and the commitment to enduring agreements on search and rescue and emergency operations, although joint exercises are currently on hold.[17]

In sum, the role of science diplomacy in translating science-based knowledge into a regulatory framework is crucial for Arctic governance. The law is often an inflexible tool for an adjustment in response to the dynamics of changes. This highlights the Arctic Council's role in formulating reflexive assessment and policy tools with recommendations constituting soft law, often found authoritative for an effective governance mechanism. Without Russia's engagement, the production of Arctic science within the Arctic Council processes will become fragmented and uncoordinated, eventually challenging efforts to build the comprehensive knowledge framework essential for a uniform approach to understanding Arctic science. Given the uncertainty of the full resumption of Arctic cooperation in its customary form as per the Ottawa Declaration, it is crucial to explore avenues to develop a framework for science cooperation that is removed from political antagonism. This undertaking could probably be built around the Arctic Scientific Cooperation Agreement of 2017, adopted by the Arctic countries under the auspices of the Arctic Council.

[16] Koivurova, T. and Shibata A., "After Russia's invasion of Ukraine in 2022: Can we still cooperate with Russia in the Arctic?" *Polar Record* 59(e12): 1–9. https://doi.org/ 10.1017/S0032247423000049
[17] Devyatkin, Pavel, *supra* n. 15.