



# Evaluating normative capacity through Arctic environmental governance

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## Abstract

International cooperation in the Arctic is largely operationalised through environmental governance in a constellation of institutions that promote scientific knowledge of the Arctic region. While the Arctic Council is placed at the centre of this network for environmental protection and resource management across the region, other institutions play critical roles in facilitating scientific knowledge production that promotes the security and development of the region and its resources across national boundaries. Evaluating the role of environmental protection in Arctic governance within models of science diplomacy, this paper argues that the assumption of environmental responsibility should act as a normative operator for Arctic environmental governance, shaping the relations between actors in this regional network and legitimising decision-making by Arctic states as they socially construct the mechanisms and regional exceptionalism of Arctic governance. However, environmental responsibility falls short of acting as a normative operator for environmental protection that also prevents the impact of climate change on the Arctic environment, excluding its function as an overarching normative operator for the international system, reducing state legitimacy for regional decision-making in extra-territorial spaces.

**Keywords** Arctic region · Governance · Science diplomacy · Environment · Responsibility

## 1 Introduction

For the last 35 years, international cooperation in the Arctic region has centred on protection of the environment, bringing about transboundary concerns such as environmental pollution, biodiversity loss and climate change. In many ways, this cooperation has been exceptionally successful. At its genesis, it provided a focus for cooperation beyond hard security by former enemies, and it has expanded the collection of data related to Arctic ecosystems filling in the “white spaces” of the scientific map and accelerating understanding of the relationship between the region and global climate. It has also resulted in several soft law instruments that have environmental protection at the heart of their rationale and

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finally, it is a dawn in bringing international recognition to the importance of indigenous peoples as critical actors in this decision-making and knowledge production.

This cooperation is unique in its pivot around the environment, rather than economy, security, culture or more simply, geographical circumstance, in its organising rationale, a feature which has served as a key factor of region-building in the Arctic. This region-building around the environment is based on “choice[s] made on specific historical and political grounds” (Keskitalo 2007, p. 188) and over the years “there have been advancements along the continuum from intergovernmental cooperation towards regional integration” (Sørensen 2013, p. 172). This regional integration comes from a variety of actors working towards common goals in Arctic fora, from the diplomatic level appointments from the Arctic states, indigenous groups and NGOs to organisational administrators who represent the state in working groups and committees. The result of this cooperation is an enormous machine producing scientific knowledge and applying this knowledge to initiatives that protect the Arctic environment.

While this cooperation is contextualised in the protection of the Arctic environment and climate change, it remains to be understood if the environment and the assumption of environmental responsibility in the region act as a normative operator for Arctic environmental governance or whether this can simply be framed as an arena of science diplomacy. As such, the research behind this paper asks how pervasive is the environment as a normative operator in Arctic governance and what is the effectiveness of this normative operator in shaping decision-making on the Arctic environment, including the environment in its relationship with the global climate. The core objective of this paper is to evaluate whether “environment” is a normative operator for Arctic governance that legitimises Arctic state decision-making over the region.

## 2 The science diplomacy model and IR theory

The use of the environment as a common arena for cooperation can be seen as an ontological space for cooperation between actors through science diplomacy with Arctic governance and its associated fora as the arena for interaction. The models of cooperation within science diplomacy are a useful heuristic tool for evaluating how particular actors (i.e. states or organisations) achieve their goals in international affairs at the intersection of science and diplomacy. As a form of soft power, a strength of science diplomacy lies in its ability to “mitigate political differences” (Copeland 2016, 629), often at times when relations between states are otherwise strained.

As a domain of international relations, science diplomacy has emerged over the last decades as a subtopic of study within diplomatic studies, focussing on the deployment of science as a tool of foreign relations via three distinct objectives, including *science in diplomacy* where science informs foreign policy, *diplomacy for science* where diplomatic measures are used to advance scientific objectives and finally, *science for diplomacy* where science acts as the diplomatic bridge between countries (The Royal Society 2010). Science diplomacy is seen as “the use of scientific collaborations among nations” to address common problems faced by humanity while building “constructive international partnerships” (Fedoroff 2009, 9).

While models of science diplomacy provide the methodological framework for evaluating the effects of cooperation around the environment in the Arctic, this research is theoretically contextualised within social constructivist perspectives of international relations. This

approach emphasises the importance of rules in framing understandings of the behaviour between states in the international system and with interests and identity shaping these rule-building norms of states as the primary agents in the system. Rules, or norms, exist as both social and legal codes as intersubjective understandings that are a “statement that tells people what we should do” (Onuf 1998, p. 59). The international system, and more specifically, the system of Arctic governance is constructed through a changeable set of rules and institutions that determine both the normative operators and the normative behaviour of states within this construct where agents coproduce knowledge about normative expectations through information exchange and by performing rule-governed behaviours (Wood-Donnelly 2020).

Rules, or normative operators, are critical for creating predictable patterns of behaviour and in producing stability in the relationships between agents within a system. In this action becomes meaningful “by placing an action within an intersubjectively understood context” (Kratochwil 1989, p. 24). Stability in a system creates security and produces an environment where agents can continue making additional linkages between one another, up to the point where a complex network of nodes has been established to connect the actors. Arctic governance, while starting as a simple network between agents by establishing expectations to cooperate on very specific matters, has evolved to become a “web of relations” (Hansen-Magnusson 2019). While rules are often malleable and subject to normative evolution—based on practice or codification—a sudden breaking of the rules causes insecurity and instability in the relations between agents.

While rules can be codified in regulatory mechanisms, they also can emerge in written or spoken imperatives (Kratochwil 1989), which persuade actors to adopt certain behaviours. It is the exchange of information, and repetition of ideas and practices which forms the “structure of discursive action” (Kratochwil 1989) of rulemaking and ultimately generates rules that inform behaviour. In this regard “the very act of saying something...does what that act says it does” (Onuf 1989, 236) and through this “if successful, they [assertives] do not merely describe a state of affairs, but make the addressee believe and accept that it exists” (Zehfuss 2002, 178). In this way, norms, and the reality that emerges from their expression, create socially constructed structures.

In this line of theoretical reasoning, the combined intentions, statements and practices of agents in Arctic governance based upon the protection of the environment should result in the creation of a normative operator around environmental protection, which could place Arctic environmental cooperation within diplomacy for science, with the scientific objective being the protection of the Arctic environment. Given that the Arctic Council and its associated actors cooperate around governance in spaces that are frequently beyond the sovereign jurisdiction of states, it is imperative that authority is created through legitimacy and the assumption of responsibility and stewardship in the extra-territorial spaces of the Arctic, and the assumption of responsibility creates an opportunity for extra-territorial decision-making. If responsibility for the environment is a normative operator or a rule for Arctic governance, then all (or at least most) organisational energy and objectives of Arctic governance actors should work towards the protection of the Arctic environment.

### 3 The environment in Arctic governance discourse

Just before the onset of the political cooperation that united around Arctic governance, Young identified that the “Age of the Arctic” had come, in part because of technological advancement related to hard security, but critically, related to environmental security

for the rapidly increasing industrial infrastructure (1985). In the period between Gorbachev's Murmansk Speech and the Arctic Environmental Protection Strategy (AEPS), Osherenko and Young (1989) were promoting the idea of an international regime that could tackle the environmental problems found in the region, already noting concerns about the impact of climate change on the Arctic environment. In this promotion of an international regime for cooperation around environmental issues, Young frequently recalled Bloomfield's (1981) suggestion for the Arctic as an opportune laboratory for governance, especially for cooperation in matters of science (1992). This section demonstrates how the environment is situated within the ongoing discourse of Arctic governance, providing the indicators for which solutions could have emerged within normative practices in Arctic governance.

With the environment as a significant focus of many institutions active in Arctic governance, discourse on environmental governance in the region also frequently appears in studies of Arctic governance, more broadly. While it can be difficult to separate these discourses—which likely deserve separate attention but for lack of space will be converged in this article, several themes emerge in the intersection of literature on the environment and governance in the Arctic. These include climate change, pollution, resources and the role of indigenous peoples in Arctic environmental governmental governance. Commonly identified drivers of these themes include climate change as the main factor, but also increased human activity such as resource extraction, shipping and tourism. This next section identifies scholarship within common themes although space prevents mention of every scholar within every topic, and or even mention of all the works of scholars notable in the field such as Young, Kouvirova or Stokke. As such, this literature review can only provide a taster into the great constellation of scholars who have been building the discourse of Arctic governance for the last three decades.

A significant feature in the literature of Arctic governance focuses on the pivot institution of the region, the Arctic Council, while only formally acting as a forum for cooperation it has grown into a governance body orchestrating agreements for issues in the region. This literature discusses the temporal development of governance through the council (Koivurova et al. 2008, Koivurova and Molenaar 2010, Loukacheva 2014, Stephens and VanderZwaag 2014, English 2016, Knecht 2016, Nilsson et al. 2016, Wilson 2016, Lackenbauer et al. 2017), discussions of reform (Molenaar 2008; Conley and Melino 2016; Herrmann and Martin 2016; Smieszek 2019) and the future of the council (Axworthy et al. 2012; Pedersen 2012; Dodds 2013; Nord 2019). Others still discuss the broadening of the concept of security (Ingimundarson 2014, Durfee and Johnstone 2019a, Durfee and Johnstone 2019b, Steinveg 2021) and the overall effectiveness of governance (Kankaanpää and Young 2012; Spence 2017; Barry et al. 2020; Rottem 2021).

The literature on climate change is notable in the exacerbated impact on the Arctic environment (Jeffers 2010), the erasure of the cryosphere (Stephens and VanderZwaag 2014), challenges to biodiversity (Trouwborst 2009) and the critical need for adaptation (Humerich and Wolf 2012). While early mentions of climate change in the Arctic were connected to the global conversation on atmospheric pollution as part of the modern environmental movement that led to several international agreements, by the early 1990s, the conversation on climate change exhibited strong concerns by natural scientists about the relationship between climate and environmental change (i.e. Chapin 1992; Wadhams et al. 1996). This scientific discourse becomes the background for scientific collaboration in the Arctic through science diplomacy and governance fora that surged at the end of the 20th century, with mentions of climate change consistently supporting both rationale for extra-territorial regulatory protections in the high North and, in contraction to the effects of climate

change, increasing accessibility for some economic activities, such as shipping or hydrocarbon extraction.

Pollution control features frequently within discussions of Arctic environmental governance as a classical issue of international cooperation in the region (Stokke and Hønneland 2007). This includes a focus on the Arctic Council's several action plans to remove pollution from the Arctic and the creation of the working group Arctic Monitoring and Assessment Programme (AMAP) established in the early days of Arctic international scientific cooperation. The literature in this area features discussion on the historical development of scientific cooperation, linking it to broader global trends in environmental cooperation related to particular existing sources of pollution and whether it affected land, air or sea (Archer and Scrivener 2019; Soroos 1993; Young 2005; Nilsson et al. 2016). Another strand of the conversation includes law and governance from marine traffic (Huebert 2001; Pietri et al. 2008; Koivurova and Molenaar 2010; Stokke 2013; Kaufmann 2017).

The literature on resource governance falls within several broad categories. There are, of course, familiar references to resources as being a driver of interests and cooperation in the Arctic region. However, more interesting discussions of resources and governance are those works specifically related to law and governance of living resources (Trouwborst 2009; Stokke 2016; Wegge 2016; Min 2017) or non-living resources, including minerals and energy (Pettersson 2009; Arruda 2015; Claes and Moe 2018; McCauley et al. 2022). Finally, we find a range of discourse that focuses on non-Arctic state interests in Arctic resources, such as China and other Asian states (Chaturvedi 2013; Stokke 2014; Peng and Wegge 2014; Lajeunesse and Whitney Lackenbauer 2016; Li 2019) or from the EU (Jokela 2015; Stepien et al. 2016; Liu 2017).

A final theme within the literature on Arctic governance and the environment considers the inclusion and participation of Arctic indigenous peoples within governance processes. This includes a discussion on the uniqueness of a governance constellation that includes this group of actors with higher priority than non-Arctic state actors (Shadian 2006; Humrich 2017; Wood-Donnelly and Ohlsson 2023), the role of indigenous actors in governance (Heinämäki 2009, Arruda and Krutkowski 2017), rights of indigenous peoples (Bratspies 2015, Durfee and Johnstone 2019a) and climate change or sustainable management of resources (Martello 2008; Shadian 2013; Nuttall 2021).

#### 4 The environment as a normative operator in Arctic governance

Governance of the Arctic emerged in a moment of global normative transformation in the international system. In the period that birthed international Arctic governance, beginning in the last decades of the 20th century, the normative operators for the Arctic were undergoing a rapid transition. Some of these normative operators were based on subjective ideational understandings between actors in the international system, while others were the result of customary transactions. Longstanding normative operators such as the imperial rules for territorial acquisition that divided Arctic territory between states evolved as changing understandings of the physical geography limited territorial expansion and separated the Arctic into national and international spaces. As the international spaces of the Arctic emerge, governance of the region materialised to project state authority over the territory and resources of this region in response to three major shifts within normative operators framing the construction of governance for the region.

The normative operator affirming the divide between national and international spaces of the Arctic emerged in the law of the sea. Since the legal debates on maritime sovereignty emerged from Grotius and Seldon hundreds of years earlier, the freedom of the seas was regarded as a dominant normative operator in the international system. Respect for this customary rule of international law even had the effect of stagnating state claims to the North Pole in the realisation that the pole was located in the middle of the ocean, even when that sea physically manifests itself as traversable ice. While the freedom of the seas continues as a normative operator for maritime spaces, new corollary normative operators have emerged for ordering the maritime spaces of the world, including those in the Arctic.

The first major shift in normative operators for the Arctic occurred when new conceptions of territory and associated rights developed, facilitated by advancing technological capabilities which made it possible to expand commercial exploitation of maritime resources. This capacity resulted in the emergence of territorial categories of the continental shelf and of the exclusive economic zone where exploitation rights were allocated to the littoral state. While these were initially restricted to 200 nm, in the 1982 Convention on the Law of the Sea (UNCLOS 1982), the potential limits of continental shelf expanded to 350 nm, subject to strict parameters. In UNCLOS 1982, the Arctic states also are given legal support for jurisdiction and projection of authority over maritime spaces beyond the boundaries of the territorial sea in Article 234, which introduces environmental protection as a normative operator within international law for the maritime Arctic, although limited specifically to ice-covered waters.

A second major shift for normative operators ordering the behaviour of states in the Arctic is found in the dissolution of the Cold War. As a socially constructed reality, the hallmarks of the Cold War as a normative operator were materialised in the arms race that produced increasingly sophisticated commercial and military technologies and suspicions of either side's intentions when contextualised within ideological tenets. This combined insecurity and technological advancement converged in the militarization of the Arctic region, perceived both as a route of attack and as a theatre for conflict given that along the geodesic, the Arctic route was the shortest distance from Moscow to Washington. As this normative operator dissolved, it created the opportunity to reframe the Arctic as a region of cooperation, not around traditional forms of security but rather through concerns underpinning human security and environmental protection.

The final major shift in normative operators is the movement towards recognising indigenous rights and self-determination in national and international areas, sometimes in tangent with decolonisation. Although the grassroots of this movement was seeded in earlier periods, this normative operator gained more prominence with the working group on indigenous rights with the UN's Economic and Social Council, eventually culminating in the UN Declaration on the Rights of Indigenous Peoples in 2007. Accession to this morally binding declaration has been slow, uneven and sometimes entirely ignored, across and within the domestic frameworks of the Arctic states. However, there has been a normative shift in the spaces of Arctic international governance, where Arctic indigenous groups are included as permanent participants of the Arctic Council—after first participating as observers in the preparations for the Arctic Environmental Protection Strategy (Arctic Council 1991). While this shift for indigenous participation as a normative operator is imperfect in its current form, it yet represents advancement within the international system and international governance (Wood-Donnelly and Ohlsson 2023).

## 5 Models of science diplomacy within Arctic cooperation

In the same period, a new focus for international governance was emerging, centred on environmental concerns and the protection of the environment from anthropogenic harms, such as pollutants and biodiversity loss. Embedded in a long history of multiple waves of the environmental movement, such as those that saw the creation of the UN Environmental Programme in 1972, governance of the Arctic emerged in an era immediately following the discovery of a human-caused hole in the ozone layer over the Antarctic and the resulting agreements such as the Vienna Convention 1985 and a plethora of bi-lateral and multi-national environmental agreements. Within the text of these documents emerges a legal and moral obligation for environmental protection, such as seen in the Montreal Protocol for parties “to take appropriate measures to protect human health and the environment against adverse effects resulting or likely to result from human activities” (UN 1989). The influences of a now transnational environmental movement and legal developments were successful in introducing environmental stewardship as a norm of the international system (Falkner and Buzan 2019).

Situated in this timeline, the 1987 Murmansk Speech is widely considered the catalyst for Arctic international governance (Åtland 2008, Koivurova 2012, English 2016, Gjørsv and Hodgson 2019, Wiseman 2020) when Gorbachev referred to the Arctic as a “weather kitchen” that affected parts of the global climate, although this comment was framed against the “freezing breath” of the US Arctic strategy (Gorbachev 1987). However, in this same speech, Gorbachev opened the door to international environmental cooperation between the Arctic states by setting this within a list of priorities, saying “we attach special importance to the cooperation of the northern countries in environmental protection. The urgency of this is obvious” (1987). He further suggests a jointly prepared, comprehensive and integrated “plan for protecting the natural environment of the North” including “the nature of the tundra, forest tundra and the north forest areas” (Gorbachev 1987). Moreover, Gorbachev situated a move towards environmental protection as a normative operator by stating “The Northern European countries could set up an example to others by reaching an agreement on establishing a system to monitor the state of the natural environment and radiation safety in the region” (1987). This launched the potential for science to act as a tool for solving the major problems of the Arctic environment—by starting with science as a bridge—builder between nations.

From this point followed a rapid proliferation of cooperation around environmental protection as the pivot of Arctic international relations, with research and monitoring as a clear priority (Rothwell 1996). In the background, organisations developed to support these priorities, such as the International Arctic Science Committee (1990). In 1991, the AEPS emerged linking responsibility for the prevention of pollution in Arctic ecosystems by states in the region together with the knowledge and experience of indigenous people in nature and resource stewardship. More organisations appeared, such as the WWF’s Arctic Programme in 1992 or the Circumpolar Conservation Union in 1996 advocating for more cooperation on the Arctic environment while the need for knowledge sharing and trans-boundary challenges became more apparent. In 1996, the Arctic Environmental Protection Strategy evolved into the Arctic Council, with eight members in the Arctic states, six indigenous groups included as permanent participants and in years following, an ever-expanding list of observers including non-Arctic states, NGOs and intergovernmental organisations.

The Arctic Council is “to promote cooperation, coordination and interaction” on “issues of sustainable development and environmental protection in the Arctic” (Arctic Council

1996). While the council is frequently considered the premier organisation in this region's governance and has now coordinated several soft law instruments for the Arctic, it is certainly not alone in its ambition to protect the environment. The interaction and overlap of governance in this region have been described as a web of responsibility where 'in different forms, responsibility for security and for sustainable development has become institutionalised in the Arctic region' (Hansen-Magnusson 2019,152). As has been suggested, the Arctic Council is unable to unilaterally address all governance needs of the Arctic, but not has it attempted to do this (Exner-Pirot 2016), raising the importance of other Arctic fora as actors. Critical in evaluating normative capacity is in ascertaining whether the normative vision embedded within Arctic governance arrangements has resulted in those norms being put into action, moving beyond science as a bridge builder, to the establishment of the Arctic Council as diplomacy for science and knowledge building.

If the environment is a key normative operator for Arctic governance, then cooperation around the environment should go beyond the use of science in and for diplomacy in Arctic governance. The dominance of the Arctic Council among the primary Arctic governance fora suggests the use of a combination of legal and diplomatic approaches to address environmental issues. In practice, this approach may not be suitable for the majority of environmental problems, many of which are concerns that transgress national boundaries, such as pollution, climate change, extractive industries (mining and oil drilling) and fishing, if thinking of Arctic governance cooperation around the environment as diplomacy for science, where "the environment" could be seen as a successful introduction of a new normative operator for the international system. However, as this section will discuss, these issues are a long way from being able to be considered success stories of Arctic science diplomacy.

The widely agreed success of the Arctic Council in addressing pollution, compared with its perceived inability to develop a clear lead on climate change, provides a useful case study on the effectiveness and limitations of current Arctic governance structures. Research by Nilsson et al. (2016) notes that a main factor in this success was that at the time of the launch of the AEPS tackling pollution was already being addressed by individual states and the international community. The twin environmental disasters of the *Exxon Valdez* oil spill and the sinking of the Russian nuclear-powered submarine *Komsomolets* in spring 1989 (Humrich 2016) were timely if stark, reminders of the need for Arctic cooperation on conservation. Hence, the Arctic Council was going very much with the grain of international consensus and opinion. Also, protocols for regular communication between the scientific community, indigenous groups and policymakers already existed, and many of the same individuals who had been involved in previous pollution prevention work contributed to the AEPS.

The scientific research and AMAP established by the AEPS did represent a genuine success in understanding the causes of pollution by the Arctic Council. The first AMAP report identified that a significant amount of pollution was generated by local sources within the Arctic, as opposed to being transported into the region by hydrological and meteorological effects. This contradicted the prevailing scientific opinion at the time and focused attention on local sources of pollution resulting in the Arctic Council Action Plan to Eliminate Pollution of the Arctic (Arctic Council 2000). However, it is increasingly apparent that pollution of the Arctic Ocean remains a significant concern, which means that while soft law instruments of the Arctic Council may improve the prevention measures and response for accidents such as oil spills, it has not been effective in preventing issues such as micro-plastics.

The success of the Arctic Council in countering the effects of pollution can be summarised by observing that firstly, the Council was able to take advantage of existing



diplomatic and social activities by the international community to raise awareness of the specific problems that pollution caused for the Arctic. Secondly, the Arctic Council was able to establish a scientific programme to properly identify the significant causes of pollution affecting the Arctic. Thirdly, where the scientific programme was able to identify local sources of pollution, the Arctic Council was able to use its diplomatic and legal capabilities to address the causes of pollution.

In contrast, efforts to address the effects of climate change on the region are considered to have been less successful. The original AEPS declaration stated that climate change (then referred to as *global warming*) and depletion of the ozone layer represented the main significant threats to the Arctic environment (Declaration of the Protection of the Arctic Environment 1991). Surprisingly, no Arctic-specific strategy was developed to address these two main threats as the AEPS argued that efforts being developed to understand the causes and effects of climate change and ozone depletion were being developed by other international programmes and organisations. An early AMAP assessment (Weatherhead 1998) referred to climate change and suggested Arctic states should address the threat through the United Nations Framework Convention on Climate Change (UNFCCC).

Nilsson et al. (2016) argue that the AEPS approach of transferring responsibility for addressing climate change to international fora was undermined by the Arctic Council's scientific research that highlighted the Arctic-specific effects of climate change and social concerns raised by indigenous groups. The findings of the resulting Arctic Climate Impact Assessment report (2005) were politically difficult for all Arctic Council member states to accept, leading to a lack of consensus on how to respond to climate change other than to revert to the original APES approach of relying on the initiatives of other international fora to lead on the formulation of a strategy to mitigate the effects of climatic change. Unlike the issue of pollution, there is no clear political consensus on how to respond to the challenges of climate change. Although the Arctic Council has been criticised by some authors for deferring to the international community to take the lead on climate change, it should be remembered that this strategy worked well for the issue of ozone depletion, the other significant environmental threat to the Arctic identified by the original AEPS.

Many of the factors that made international efforts to address ozone depletion successful also supported the Arctic Council's success against pollution. There was scientific agreement as to the cause and effects of ozone depletion, the release of chlorofluorocarbons (CFCs) into the atmosphere. Consensus among policymakers on the need for action along with socially acceptable alternatives to CFCs made diplomatic and legislative initiatives to limit emissions of CFCs into the atmosphere achievable (Andersen et al. 2002). Similarly, when addressing pollution, the Arctic Council was able to utilise scientific agreement, obtained where necessary through initiating further research and data sharing; consensus among policymakers; and the availability of socially acceptable solutions.

None of these success factors is present in the case of climate change, although, scientific opinion is generally in agreement over the role of anthropologically produced carbon dioxide in increasing global temperatures (IPCC 2007). The exact nature of the effects on the earth's climate is complicated by the range of other influences on temperature and the feedback mechanisms that result from such temperature increases, such as the role of cloud production in either mitigating or exasperating climate change. Equally, there is only limited consensus among policymakers in the international community as to how to respond to climate change. Largely, this lack of agreement is driven by the absence of widely socially acceptable solutions to climate change. Given these difficulties, it is perhaps unsurprising that the Arctic Council has been unable to make any substantial headway on developing a policy response to climate change.

The Arctic Council and Arctic governance institutions have achieved certain success in supporting international efforts to understand climate change. In particular, the working groups of the Arctic Council were able to provide regional scientific knowledge identified by the Intergovernmental Panel on Climate Change (IPCC) (Nilsson 2009). The scientific relationship between the Arctic Council and IPCC also produces benefits for the Arctic Council, providing a process of conducting regional science that is considered legitimate by the international community (Nilsson 2009).

Overall, the Arctic Council has facilitated negotiation for treaties on pollution, accident prevention/mitigation through the SAR treaty and a moratorium on fishing, which all support environmental protection. However, in all these cases, environmental protection and research have been conducted concurrently with the economic development of the Arctic, since the foundation of the Arctic Council's Sustainable Development Working Group (SDWG), following ministerial meetings in Nuuk in 1993. The 2000 meeting of the Arctic Council in Tromsø, which produced treatises on Oil Pollution Preparedness and Response (MOPPR) and Search and Rescue (SAR) to provide legal protection for the environment, but at the same meeting, also declared that economic cooperation was to be at the top of the Arctic Council's agenda.

This tension between conducting both scientific activities and political cooperation to mitigate against locally occurring damage to the environment, while at the same time, increasing these risks through the economic development of the Arctic is likely to create a paradox in the coherence of Arctic governance with environmental responsibility as a normative operator. This paradox is magnified when taking into account that much of this economic development exacerbates the issues of carbon emissions, such as through hydro-carbon exploration and development, desires to increase shipping traffic which is a notorious polluter of both water and air and finally, expanded mineral extraction. If responsibility for environmental protection was a rule for Arctic governance regarding these indicators, then actions in contradiction to this rule would be politically and diplomatically unviable options.

## 6 Conclusions

The Arctic States and the governance institutions it has created and financially supported had a period of 30 years to establish normative capacity by introducing rules or normative operators for Arctic international relations. Starting as scientific bridge builders during a time of international tensions, Arctic governance institutions have strong foundations with an environmental focus in their rationales and regular operations, with the potential to take responsibility for the Arctic environment and a real drive for regional cooperation. Yet, there is an issue in how states use environmental governance as a normative operator in this space. As an arena of science diplomacy, Arctic governance has made considerable gains in improving cooperation between states and achieving diplomatic objectives in the region.

One of the key objectives of state actors includes legitimising control over extra-territorial spaces beyond national boundaries in the Arctic region. In this regard, considerable gains have been made for using environmental protection as a normative operative by centralising the Arctic Council as the premier institution of regional governance and the primary forum imbed the generation of soft law instruments. However, it has been less effective in realising the level of environmental protection needed to enable the

protection of the Arctic environment in the way that it relates to global climate change. In this regard, the normative capacity of environmental governance to promote climate change mitigation has been diverted, or at least, obscured by material motivations—many of which are in fact, counterproductive to climate governance (McCauley et al. 2022; Wood-Donnelly and Bartels 2022).

So while worldwide environmental issues such as the impacts of climate change are of concern, climate change disproportionately affects the Arctic with the region warming four times as fast as the rest of the globe (Rantanen et al. 2022). The effectiveness of relying on existing Arctic governance fora, whose membership is limited to the Arctic states to address these concerns is questionable while the normative operators being promoted do not reach the full potential for the region as a laboratory for governance. The success of the Arctic Council in addressing both local and global sources of persistent organic pollutants suggests that widening the role of one of the advocacy, while being supported by the web of governance relations in other Arctic fora, could elevate concerns for the region to the international community, not least within centres of power for the Arctic states. This may prove the effectiveness of Arctic governance in fulfilling its remit to protect the Arctic environment and show strong normative capacity for this region and its governance fora.

Environmental protection serves as a primitive and initiating normative operator for the Arctic region, although at present, this environmental protection does not extend to climate protection and certainly does not reach the status of environmental responsibility. While Arctic environmental governance initially emerged for political expediency, such as cooperation potential and territorial advantage, the reality is that this environment has a critical connection to the global climate, making it a critical region for mitigating climate change. While Arctic governance institutions focus on environmental governance, the Arctic policies of Arctic states teeter between effective environmental responsibility and the pursuit of resource exploitation that contradicts the real protection of the environment by continuing to protect and pursue activities that result in negative feedback loops for the climate, the ultimate protector of the Arctic environment. Without climate integrity, the Arctic environment cannot, in fact, be protected. If Arctic environmental governance is to achieve its objectives of responsibility for environmental protection, it must include climate within the objectives for environmental responsibility and exercise the full potential of its normative capacity. If responsibility for Arctic environmental protection has reached the status of a normative operator, then action towards this scientific objective would be evident both within the governance of the Arctic and in governance from within the Arctic states domestic actions for issues that affect the Arctic.

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