

Explaining Arctic peace: a human heritage perspective

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Abstract

The Arctic is on fire. Warmed by the world's soaring greenhouse gases, its ice cap is melting, and it is heating twice as fast as the rest of the planet, deepening the earth's climate crisis. As its ice thaws, buried resources, trade routes, and new tourist opportunities are suddenly accessible. The borders of the earth's two largest nuclear rivals, the US and Russia are less than 3 miles apart in the Arctic region and their hostility is growing. Seeking new trade routes and investment opportunities and rapidly rising above its rank as the earth's third most powerful country, China, has declared itself a 'near Arctic state' and is exercising a voice in Arctic affairs. Russia and Arctic NATO members have expanded their military presence in the far North. Despite potential tensions and rapidly melting ice, there is no effective overarching governing regime in the region that can mitigate the climate crisis or manage conflicts were they to arise. Nonetheless, the Arctic remains free of interstate violence. The explanation for the absence of violent conflict cannot be found in traditional International Relations (IR) Theories. Looking below the radar of IR theory and expanding the Human Heritage approach, I show that the region contains a web of overlapping local, regional, national, and pan-Arctic institutions and agreements, built on both traditional and Western knowledge and often steered by indigenous knowledge holders in Arctic governance. This informal web of governing regimes manages Arctic resources to protect human heritage and guard human security. In doing so, it creates a cooperative environment which guides dispute settlement among Arctic states. It is the power of these networks, their normative commitments, and the knowledge that informs them that help to explain the absence of violent interstate conflict in the region.

Keywords

Arctic, global commons, indigenous peoples, Russia, TEK, US

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Introduction

The Arctic is on fire. Warmed by the world's soaring greenhouse gas emissions, its ice cap is melting, and it is heating twice as fast as the rest of the planet. As its ice thaws, buried resources, trade routes and new tourist opportunities are suddenly accessible. Seeking new trade routes and investment opportunities, China has declared itself a 'near Arctic state' and seeks to exercise a voice in regional affairs. Some coastal Arctic states even seek territorial extensions into the Arctic Sea. Russia pushed its territorial boundary almost to the North Pole, a designated global commons area, off limits to all countries. Quarrels among Arctic states involve fishing rights, disputes over the continental shelf, and jurisdiction over the seabed in the Central Arctic Ocean. Arctic countries have expanded their military presence. While the region holds global commons resources necessary for the existence of all life on earth, there is no effective *overarching* governing regime that can mitigate the climate crisis or manage conflicts were they to arise. Nonetheless, despite current hostility between the West and Russia, tension between the West and China, and intermittent land, sea, and resource disputes, the Arctic remains free of interstate violence. Some pundits have suggested that this is 'exceptional',¹ in the sense that in other world areas, these changes and disputes might lead to violent conflict. What accounts for the absence of dangerous interstate violence and regional cooperation in the absence of an overarching Arctic governing regime?

The search for answers to this question is theoretically significant, empirically important, and policy relevant. The borders of the earth's two largest nuclear rivals, the US and Russia are less than 3 miles apart. China, rapidly rising above its rank as the earth's third most powerful country, declares itself to be a 'near-Arctic state' with international rights to traverse Arctic waters. But its coveted trade routes lie within the territorial control of sovereign nations who protest China's intrusion. Although this may be a recipe for conflict, as yet no conflict has emerged. Moreover, traditional IR theories fail to provide an explanation for regional cooperation in numerous issue areas and the continued absence of violence. While some scholars and practitioners have made the empirical connection between the challenges of melting ice, economic competition, and territorial and resource disputes,² few have puzzled over the continued absence of Arctic violence. With notable exceptions,³ even fewer have offered viable governance solutions for the region. None have noted how current Arctic arrangements preserve human heritage and natural resources *and* provide mechanisms to tamp down related conflicts among Arctic actors.

Long shrouded behind an 'icy curtain', the Arctic has no history of requiring or seeking regional integration under a common regime. Nonetheless, I will argue here that while eschewing overarching governance, the Arctic is ruled by *networks* of overlapping local regimes and states engaged in environmental co-management, economic development, scientific and security cooperation, and more. These networks alone cannot stop ice from melting. But they play an outsized role in protecting the environment and shaping the nature of cooperation and peaceful settlement of disputes throughout the region. I look to these governance networks and their membership to develop a perspective that contributes to an understanding of the absence of violence. This study therefore has crucial relevance, not only for policies to confront environmental threats and preserve 'human heritage', but also for national and regional peace and stability.

My argument proceeds as follows: I begin by showing that existing IR theory provides only elliptical answers to the question of continued Arctic cooperation and absence of violence. I then look below the radar of IR theory to decentralized governance, indigenous participation, and hybrid knowledge base which have helped to create a unique Arctic security environment.⁴ I expand Riddervold and Newsome's Human Heritage Approach to the Global Commons,⁵ arguing that traditional knowledge, indigenous participation, and informal and formal Arctic governing networks at the local and regional levels contribute to protecting the natural environment, safeguarding human security, preserving the Arctic's human and environmental heritage, and creating a cooperative environment that provides strong incentives for dispute settlement. It is the power of these networks, their indigenous participants, normative commitments, and the knowledge that informs them that help to explain the absence of violent conflict and the protection of natural and human heritage in the region.

Theoretical perspectives on Arctic peace

Structural realism

Neo-Realist theory⁶ cannot explain the absence of Great Power conflict in the Arctic. Relying on assumptions of states' rational self-interest, realist theorists look to underlying structural conditions, such as global anarchy and the absence of authority over sovereign states to explain inevitable power competition, conflict, and the outbreak of violence. According to the theory, anarchy breeds insecurity among self-interested and self-reliant states, driving a need for self-protection, and rendering alliances tenuous. Insecurity provides fertile ground for the emergence of a 'security dilemma' among states. Security dilemmas lead to arms races and war. Ironically, when states build up their defensive resources and weapons to protect their own security, their competitors and adversaries see these buildups as *offensive* moves. Why? The distinction between defensive and offensive weaponry and troop strength is often murky, and new defenses can signal that the builder is preparing both for attack *and* for the protection of its assets and citizenry from a counterattack. This triggers the adversary to increase his own military power, thus confirming to the initial builder of defensive resources that there is indeed a threat and that more military might is needed to bolster 'security'. Such security bolstering is a fool's errand, because it appears even more threatening to others, making them feel more insecure. Before long, an arms race ensues, then a rush to attack *first* to gain an offensive advantage. War is the inevitable outcome.

Some Arctic commentators, and responsible officials echo the tenets of structural realism; some even using its theoretical terminology, when they warn that Arctic conflict could be in the offing. U.S. Secretary of State Anthony Blinken protested in May 2021 that Russia has made unlawful Arctic maritime claims⁷ and warned that with Arctic warming, 'Russia is exploiting this change to try to exert control over new spaces. It is modernizing its bases in the Arctic and building new ones, including one just 300 miles from Alaska. China is increasing its presence in the Arctic, too',⁸ Jennifer Walsh, a senior U.S. Defense Department policy official suggested that Moscow's objective might be to simply bolster its territorial defense in the arctic, but, she asks 'how far will it go to

increase its oversight or control of northern sea routes'.⁹ Anna Wieslander, director of the Atlantic Council's Northern Europe program went further to drive the realist point home when she states that in the Arctic: 'You have so many components for a classic security dilemma increasing . . .'.¹⁰ Jens Stoltenberg illustrated the inevitable potential consequences, according to realist theory, of an Arctic security dilemma: 'Increased Russian presence . . . has also triggered the need for more NATO presence, and we have increased our presence there with more naval capabilities, presence in the air, and not least, the importance of protecting transatlantic undersea cables transmitting a lot of data', The Russian Foreign Minister responded: 'this is *our* territory, this is *our* land. . .'.¹¹ Given these authoritative pronouncements, one might expect the tit-for-tat military buildup to increase.

The evidence for realist claims and their echoes among policymakers is mixed. The structural realist assumption about the violent consequences of international anarchy is weakened by the fact that anarchy and the absence of overarching regional governance reigned in the Arctic for two centuries, and nation states in the region maintained peaceful relations among themselves, even during the height of the Cold War. (There has been horrific violence in the Arctic against indigenous peoples, perpetrated by white settler imperialists, a topic that deserves a paper of its own.) The focus here is *inter-state violence*. And recently, the Arctic region has indeed seen a flurry of military activity. Russia's military has rebuilt and expanded numerous facilities in and around its northernmost territories. It has opened previously abandoned Cold War-era military installations and its aircraft and submarines have more frequently intruded into or close to other countries' Arctic spaces. It has increased trans-Arctic radar coverage and developed systems for radio-electronic jamming of foreign aircraft and vessels.¹² As Stoltenberg notes, the U.S. and NATO Allies have responded to heightened Russian military activity with beefed up military operations of its own. The number of U.S. military operations in the Arctic has increased and they have grown larger. The US Navy's Second Fleet has been improved; the U.S. revived abandoned facilities in Keflavik, Iceland, and finalized plans for the construction of new icebreakers. In response, Russia's complaints about Western encroachment on its territory and interests have become more strident. Nonetheless, this challenge and response does not amount to an Arctic arms race, and there is little danger of military confrontation, at least for the foreseeable future. As I discuss below and as a number of scholars have shown,¹³ there are no new territorial disputes, and Arctic states adhere to UNCLOS rules for dispute settlement. Russia's posture in the Arctic is not new. Russia's territory covers 80% of the Arctic region. Its current posture may, however, signal a return to a Cold War of beefing up protection of its ballistic missile submarine fleet and operations in the North Atlantic in case of a war in Europe.¹⁴ And, as Marc Lanteigne argues persuasively, despite the Ukraine conflict beginning in 2014, which ushered in frosty relations between Russia and the U.S., a tacit agreement among Arctic states separates non-Arctic political and security concerns from the Arctic Council's deliberations and overall Arctic diplomacy.¹⁵ As I shall show below, the Arctic environment is not anarchic, and if there is indeed a 'security dilemma in the region, it does not appear to be leading to heightened conflict that could become violent'.

Liberal institutionalism

Liberal Institutionalism¹⁶ suggests reasons for why many conflicts around the globe have remained peaceful. According to this approach, rather than just building up their military power, rational, self-interested states reduce uncertainty in their environment by constructing and joining international institutions to manage their interdependence, and enforce a common set of norms and rules. Environmental regimes provide an illustration. Recognizing that pollution, pandemics, ozone depletion, and global warming transgress national boundaries, liberal institutionalists show that states create international institutions to protect the natural environment as well as their own economic power and security. Haas et al.¹⁷ focus on the importance of scientists and NGOs, in creating and maintaining these environmental institutions. He argues that these non-state actors represent the ‘convergence of political and technical consensus about the nature of environmental threats’ that leads to governing solutions.¹⁸ Scholars have used this approach to analyze the Mediterranean Action Plan,¹⁹ the Convention on Long-Range Transboundary Water Pollution,²⁰ the Montreal Protocol on Ozone Depletion, and other agreements.²¹ Their investigations conclude that these institutions have led governments to enact domestic rules and statutes to protect the environment. Some scholars note that these environmental ‘regimes’ can work to prevent violent conflict among their members.²²

While not an ‘environmental regime’, the UN Convention on the Law of the Sea (UNCLOS) is the one international legal institution relevant for the peaceful settlement of Arctic boundary disputes. It sets the rules marking boundaries of coastal states’ territorial waters and exclusive economic zones. UNCLOS members adhere to these rules in settling their territorial disputes and submit to the adjudication decisions of UNCLOS officials. But UNCLOS was not constructed to address all issues that nag at the icy top of the world; its principles and legal norms were developed to govern the deep sea, not rapidly melting glacial masses. UNCLOS has no material or legal power to enforce its decisions, and it cannot facilitate agreements for environmental protection. The US is not a party to the treaty, and without US participation, UNCLOS’ hands are tied and would remain on the sidelines were violent conflict to arise. Nonetheless, UNCLOS has established entrenched norms that all Arctic states adhere to, and its normative power is crucial to the regulation of territorial disputes.²³

In addition to UNCLOS, whose Arctic jurisdiction is fairly narrow, the only other pan-Arctic multilateral organization is the Arctic Council. It is not a treaty organization or governing body but rather a *discussion forum* that seeks to promote dialogue and bilateral agreements between Arctic States. And as we shall see below, it has been successful. Since 2013 it has had a permanent secretariat, but has no stable budget, serves no regulatory function, and plays no role in adjudicating conflict. Any focus on military security is excluded in its mandate. Its funding is entirely voluntary. As Paul Berkman writes, ‘There are forums for international cooperation in the Arctic, most notable the Arctic Council, but peace in the Arctic Ocean has yet to be explicitly established as a common interest because of the long-standing military presence. Risks of political, economic, and cultural instabilities are inherent consequences’.²⁴ Nonetheless, its normative power is substantial, and it may one day indeed develop into a regional governing body.

Some argue that Arctic states should correct the current governance deficiency by creating an international treaty organization, possibly along the lines of the Antarctic Treaty.²⁵ Much of this argument is based on the assumption that the Arctic, like Antarctica or the deep seabed, is a ‘global common’²⁶ which can be governed as such. A global common is defined as an area outside state boundaries to which all states have access. In fact, except for the area around the North Pole, the Arctic is not a global common in international law. But Arctic states harbor global commons resources required by life on earth. In the same way that Amazon countries harbor rainforests which provide oxygen, Arctic states harbor ice which regulates the Earth’s temperature and carbon sinks that help prevent global warming. They can legally let ice and tundra melt in order to uncover lucrative non-renewable resources which redound to their benefit but harm the global climate. Legal experts²⁷ therefore distinguish between common *areas*, and those ‘commons goods/resources’ that are located both outside and inside state territory.

Recognizing that the Arctic is not a global commons area, but rather a location of global commons resources within state boundaries, other scholars have suggested a number of other governing solutions: the creation of a looser Arctic regime or the enhancement of the current legal regime – including UNCLOS,²⁸ integration of the Arctic into other existing global regimes or a ‘regime complex’²⁹ of institutions governing specific issue areas. As we shall see below, many aspects of a regime complex in the Arctic are already in place.

Constructivism

Constructivism offers three valuable insights into possible causes of Arctic cooperation and non-violent dispute resolution.³⁰ First, Constructivists,³¹ like ‘regime complex’ theorists, suggest a focus on the influence of non-state actors on both the state and on international relations. Secondly, many constructivists offer a new understanding of the non-state actors and states’ relationship to the natural environment and how that focus spurs their cooperation.³² Third, constructivists have argued that norms and identity can trump self-interest to account for actors’ international behavior.³³ Norms fostering cooperation and diplomacy can trump military solutions to interstate problems. The activity of the Arctic Council, for example, is driven by ‘soft law’ norms promoting peace, environmental justice and protection, respect for indigenous people’s rights, sustainable development, and concern for human security and ‘human heritage’. Much of its work is science-based, and its working groups seek to fill the gaps in existing northern circumpolar knowledge. As I shall show here, the diffusion of its norms and the normative focus of its activity *is* influential in all levels of Arctic governance. As we shall see below, the role of indigenous culture and identity has become increasingly important in Arctic governance, a role largely ignored in the other two schools of thought.

Expanding the human heritage model: the role of knowledge, indigenous participation, and networked decentralized institutions

Each of the above perspectives provides some insight into the causes of Arctic peace, and each leaves explanatory gaps. I close those gaps by looking at the Arctic through a

constructivist lens that builds on Riddervold and Newsome's human heritage model. Situating their model within a constructivist framework, they begin with the assumption that actors can be motivated by goals other than simple self-interest; they can be 'ultra-social'³⁴ in that they are empathetic, cooperative, and other-regarding; they construct norm-based policies and governing institutions with the health and safety of future generations in mind, particularly with regard to protecting the environment. They admit, however that an 'alternative mode of global governance to the current regime organized mainly around state sovereignty is seldom operationalized in the literature'.³⁵

In this article I expand their model and operationalize such an alternative form of governance by focusing on indigenous non-state actors, their knowledge, culture, norms, and identity, and an alternative form of governance. To do the latter, I employ a modification of liberal internationalism focusing not on overarching regimes but on networked local governance that fosters cooperation existing below the radar of IR theory. I argue that Arctic governance is a network of decentralized and overlapping 'common property regimes',³⁶ a hybrid web of state, local and regional governing institutions whose 'soft law' norms and practices build on indigenous ultrasocial cultural cooperation to ensure Arctic human and environmental security and the preservation of 'human heritage' in the face of the climate crisis and potential military instability. I show how this web of institutions, policies, and activities can help to mitigate conflict among Arctic states.

This focus on alternative governance within an expanded human heritage approach can also be read as an amendment to Peter Haas' idea of the role of epistemic communities.³⁷ Haas defines an epistemic community as 'a network of professionals with recognized expertise and competence. . .and an authoritative claim to policy relevant knowledge. . .' ³⁸ To explain why and how interconnected common property regimes are shaped by 'human heritage' norms, and practices fostering cooperation, I look to the role of hybrid knowledge and indigenous knowledge holders in Arctic governance as participants in 'epistemic communities'. That is, I include in Arctic epistemic communities not only professional western scientists but also resource users engaging in participatory and community-based action³⁹ who have relevant knowledge within a particular domain. In the Arctic, these users include indigenous peoples of the region. They possess what I will describe below as 'traditional ecological knowledge' (TEK)⁴⁰ and interact closely with western scientists and other actors in shaping policy in governing institutions. Three significant characteristics of Arctic science have proved effective in governance: *First*, the integration of TEK into scientific recommendations; *second*, integration of Arctic *people* in scientific research and institutions;⁴¹ *third*, *engaging* local communities in knowledge production, transfer, and sharing.⁴²

While nation states exercise dominant control over territory and exclusive economic zones that jut into the Arctic Ocean, and often support private companies itching to exploit Arctic resources for profit, successful land claims and extended rights empower indigenous peoples to be independent political actors who spread their knowledge and practices within and beyond the nation state. Indigenous stewardship over, knowledge of, and claims to natural resources make them powerful stakeholders in Arctic governance at all levels. The victory in an April 2021 Greenland election of a coalition of environmental parties, headed by the Inuit Ataqatigiit party provides a good example of the international power of indigenous governance. Inuit Ataqatigiit advocated for

environmental sustainability since its founding in 1976. Its constituency is largely made up of the Inuit population of Greenland, and is now the largest party in Greenland's parliament. Its 2021 platform included stopping a massive rare earth mineral mining operation in southern Greenland, which was to be led by an Australian company backed by Chinese investment.

The common-property literature⁴³ provides a useful description of the power that these actors can hold within those governing institutions in which the collective use of a resource is embedded as a triad of interests, knowledge, and the resource itself. Arctic state governments still exercise final control but increasingly bow to the knowledge of epistemic communities which include indigenous peoples. Arctic states work peacefully with them and with each other. The section below looks more closely at these governing networks and their influence on peaceful resolution of Arctic disputes.

Governing common pool resources

Although some observers in the Liberal Institutional School believe that appropriate governance to ensure Arctic peace is lacking, in fact Arctic governance is thriving. Elinor Ostrom's theory of common pool resources (CPRs) and common property institutions⁴⁴ provides insight into the stability and effectiveness of Arctic governance. Common pool resources overlap with global commons resources, and, depending on the prevailing character of property rights, they are treated as local resources outside private property boundaries needed by more than one user. Many forests, rivers, and wildlife are CPRs. Both common pool resources and global commons resources are subject to Hardin's 'tragedy of the commons', which posits that all actors will attempt to exploit commons areas and resources for their individual gain until the commons and its resources are destroyed.⁴⁵ Ostrom⁴⁶ echoes Hardin when she argues that an unregulated, open access common-pool resource is likely to be overused or destroyed if it generates highly valued products is likely to be overused if not destroyed. But for her, unlike for Hardin, privatization is not the solution. She argues that between the alternatives of global/regional authority and local resource privatization lie hybrid arrangements which are common in modern societies and that local common-property institutions/regimes can effectively govern common pool resources in the absence of privatization, sovereign resource control, a global regime or regional integration.

One important characteristic sets common property institutions apart from governance of global commons areas: they exert stewardship over a resource while *excluding* others from its use. Indigenous sovereignty over numerous tracts of Arctic land provides an example. Although these tracts share several characteristics with private property – Hardin's preferred solution to the tragedy of the commons – they also create binding and authoritative rules and means of enforcement within the community in order to protect common pool resources. If these local institutions pursue policies to protect the environment and network with one another, the region's common pool resources begin to be protected and their members learn to cooperate.

There is another important component of local common-property regimes that makes them successful: size. Global commons like oceans, rainforests, climate, and the natural environment are large, complex, and widespread. International regimes governing global

commons areas like these are notorious for their weakness. Because they are so large, members lack full commitment to their goals. Many participants in the global climate accords, for example, have resisted transparency, and find it easy to cheat, making enforcement difficult. In smaller areas, it is easier to detect threats to a resource, like the spread of disease in a fishery or a bark beetle infestation in a particular forest, both of which are linked to global warming.⁴⁷ In local common property regimes, it is easier to communicate those threats among members and adopt rules to mitigate them more quickly. Because local common-pool resources are in a relatively small well-defined area, those who use them have developed knowledge about their characteristics and best practices for sustainability. Defection from small groups has high reputational costs and is therefore more difficult. Participative governance in small groups generates trust and reciprocity, and both are crucial for cooperation.⁴⁸ Local common-property regimes reverse the relationship between the individual and the group. While private property excludes the community in favor of individual benefits, individuals, organizations, or companies can be excluded from the use of common property if they violate common interests.

Local common property regimes tend to be especially effective when they are embedded in traditional communities with a high degree of ultra-sociability. Violating rules is especially costly in these communities because in addition to losing a share of a resource, they lose social recognition and respect. In the Arctic, these communities are composed primarily of the indigenous peoples who have inhabited the region for thousands of years. They see themselves and their own survival as part of the natural environment and its survival. As subsistence communities, they possess knowledge about environmental protection inaccessible in regimes where they are not represented. By granting secure resource rights to these stakeholders, local common-property regimes can enhance the security of livelihood, protect human heritage, and limit destructive resource use.

How can the advantages of small groups and traditional communities be employed to solve global problems like climate change and international security? First, participants and stakeholders need to achieve consensus on priorities and have accurate information about local resources and global *and* local conditions. Second, they need to recognize their common priorities and have multiple channels of contact.⁴⁹ Third, because Arctic governance is composed of organizations that are networked across all levels, from local to pan-Arctic, they need to share that information across governance structures.⁵⁰ These priorities are met, for example, through local representatives' participation in issue-specific regional/pan-Arctic governance regimes. Participants meet with one another to share and diffuse knowledge, goals, problems, and experience. Examples include the Circumpolar Conservation Union, the International Arctic Research Center, and the Arctic Institute, to name just a few. Local participants share their local knowledge in these fora and bring back knowledge gained there to their local communities.

Most Arctic governing institutions work on a consensual basis, and local representatives are engaged at all levels. Collaboration among participants in local common property regimes and participants in other levels of government focuses on environmental issues and sustainable development, couched in terms of 'Arctic security'. Consensus at all levels about the priority of these issues in enhancing security aids their collaboration

and sense of a common Arctic identity that demands cooperation in order to survive the harsh and changing Arctic environment.

Arctic governance at all levels is less hierarchical and more decentralized than conventional governance. Because the stakes are high, given the extreme conditions and the importance of the environment for survival, consensus, engagement, and consultation are more important than trading votes to achieve policy goals.⁵¹ The inclusive approach to decision-making has produced a flattened hierarchy where a diverse collection of stakeholders, including representatives from the private sector, are engaged in the decision-making process. Military organizations of Arctic states are also participants in local and regional Arctic governance. They create employment in Arctic areas where military bases are located and, guided by environmental regulations created at the local level, build infrastructure throughout the region. Through the process of adhering to local policy, NATO, The Arctic Security Forces Roundtable, the Arctic Coast Guard Forum, and the Barents Euro-Arctic Council, have all come to see climate change and environmental security as 'soft' but crucial military security issues. The Arctic Council, whose formal mandate excludes military security from its agenda, has become a fount of information and a forum for intense discussion on these 'soft' security issues.⁵²

The integration of these stakeholders into governing regimes at all levels is dependent on epistemic communities as participants. They produce the knowledge, both indigenous and western, required for policy at all levels of decision-making. It is the role of these epistemic communities in governance that is the focus of the discussion below.

Local knowledge and Western science

I turn first to the role of indigenous knowledge, now known as traditional ecological knowledge (TEK). TEK is defined as knowledge, practices, and beliefs of traditional communities that span national boundaries and are intricately connected to the land and water in the ultrasocial communities noted above. TEK is gathered by those whose lives depend on understanding the dynamic relationship of living beings with one another and with their environment. Knowledge about that relationship is cumulative; it has evolved by adaptive processes and handed down through generations.⁵³

TEK and modern science complement one another. Arctic indigenous people often have an impressive ability to detect changes in their environment, for example, shrinking reindeer herds, decline in fisheries, or the changing abundance of brush cover. Because their observations are often more sensitive than modern scientific methods, they detect climate changes that western science cannot see. Western scientists are increasingly recognizing that a traditional holistic understanding of the eco-system requires the integration of Western scientific and traditional knowledge.

Nevertheless, the epistemologies of TEK and Western science are distinct. Western science depends on structured experimentation guided by abstract theories and rigid methodology; TEK is experiential knowledge encoded in historical traditions, cultural rituals, and spiritual practices. While Western science has devised methods to unearth 'neutral facts' in 'value free' inquiry, TEK consists of accumulated observations that constitute the observer's relationship with the environment. Western science sees the environment as a laboratory; TEK sees knowledge about the environment as a survival

tool and the environment itself as part of their culture and of human heritage more broadly.⁵⁴ While Western science sees itself as objective and apart from individual cultures and societies, the ethos of TEK sees the community's treatment of the environment as indicative of how people treat each other. Huntington et al. show that the Yupiit people, for example, *believe* that fish are, like humans, sentient and social beings and that how people communicate with the fish is indicative of ways people should or should not communicate with each other. It is that belief that contributes to norms shaping communal behavior. They believe that that how people communicate with the fish can either strengthen or weaken the human communal bond. At one time, for example, western scientists recommended the imposition of quotas to preserve Arctic fish stocks. The Yupiit and many indigenous people were appalled by this idea because they believe that speaking about fish stocks decline is the same as causing it, and fishing limitations are seen as disrespecting a fish that has given itself to the fisherman. Because fish are sentient, the Yupiit believe, they understand what is said about them and must be spoken about only in positive terms. This keeps up their morale so that they will continue to give up their lives for the sustenance of the people. Similarly, recommendations for limiting hunting are sometimes seen as breaking the human-animal bond.

Despite their differences, western science and TEK are brought together by common values of sustainable development and environmental security in the face of the Arctic's changing climate and resource depletion. Both want to preserve the polar bear population by preserving the ice that it depends on. Both want to save the melting tundra, which provides food for the caribou, so crucial in the indigenous diet, and helps protect the earth from rising CO₂ levels. Both wish to halt the pollution caused by increased mining and drilling, which harms the human and animal population and speeds ice melting.

These common values make hybrid epistemic communities, which include both western scientists and indigenous representatives in Arctic governance, unique among all forms of global, regional, and local governance. *There is probably no other area of the world in which both western and traditional knowledge plays such a large role in shaping policy, from shipping regulations to resource development.* It is to this interaction of knowledge and governance that the discussion now turns.

Knowledge and governance to preserve human heritage and foster cooperation

Local common-property regimes and empowered indigenous people are crucial in the circumpolar north. In rural areas, mixed subsistence-market economies are typical, and public and communal forms of land management and resource allocation are dominant. In Alaska, only 1% of the land is privately owned, and in Greenland private property is unknown. Throughout the Arctic, state and local legislatures and indigenous organizations play a central role in decision-making, particularly about concessions for the oil and mining industries, regulation of fisheries, and wildlife management. Heterogeneous resource management regimes have evolved over time, resulting in complex institutional webs spanning all levels of governance.

The influence of indigenous people in these networks, and thus the influence of TEK, has increased since the 1970s after long legal battles over claims of traditionally used land and the bid for self-determination.⁵⁵ In Alaska, the US Congress settled Native land claims throughout the state, giving Alaska natives title to 44 million acres (roughly a 1/9 of the Alaska territory) and a payment of roughly a \$1 billion in exchange for oil exploration and drilling tracts. In 1989, the Norwegian government created a Sami Parliament to advise the Norwegian legislature. In 1999, the Inuit in Canada won extended say in the government of the federal Northwest territory, whose population is 80% Inuit, and where almost half of the Inuit population of Canada lives. Greenland's population is composed of 88% Inuit people, who have achieved a form of 'home rule'. And in Russia, the Chukchi people have gained extended rights of self-determination.⁵⁶ Clearly not all of this territory will be under environmental protection, but many, guided by TEK will work toward that protection within local and regional governing frameworks.

Many indigenous governance regimes are hybrids that sustain both traditional internal structures and administrative and legal capacities to cooperate with or confront non-native counterparts. Canada's co-management regimes or Greenland's home rule are examples in which native people and modern administrations work closely together. Under home rule, indigenous peoples have adopted an identity as a traditional nation-state to justify assuming state-like responsibilities, while simultaneously taking on an indigenous identity to legitimize their hunting, whaling, or sealing rights, which ordinary nation states are not privy to. And because they provide a model for promoting the self-determination of indigenous peoples, they have spread TEK and its respect for 'human heritage' and 'human security' throughout the Arctic.

With the growing power of indigenous people in resource management, other stakeholders have come to recognize the importance of TEK.⁵⁷ For example, the Traditional Knowledge Working Group in Canada's Government of the Northwest Territories is tasked with recommending policy changes that will integrate traditional knowledge into resource policy. Bielawski quotes the Canadian Minister of the Environment in this telling statement: 'our task going forward is to integrate traditional knowledge and science'.⁵⁸

Lessons from conflicts between Western science and TEK

Despite sharing a common value of sustainability, however, these two communities' discrete ways of knowing and their conflicting goals can lead to direct conflict between them. And cultural clashes and western scientists' opposition to traditional resource management strategies has sometimes obstructed institutional integration. In caribou regions of Alaska and Canada, for example, Western scientists blamed caribou population decline on resource overuse; indigenous people blamed it on scientists' disturbance of hunting lands.⁵⁹ In some cases, western 'resource management' in Alaska has threatened the food security of the Inuit inhabitants.⁶⁰

The case of bowhead whale quotas illustrates this conflict. In 1977, the International Whaling Commission (IWC) voted to halt bowhead whale hunting, based on scientific observations that suggested a declining whale population. The whalers, however, argued that the population was higher than the IWC recognized and that it was growing. They

focused on currents, wind strength and direction as key determinants of migration patterns. Their observations confirmed the existence of a 'sub-population' of Bowhead whale stock.⁶¹ To 'test' whalers' observations, US and the local governments worked with the Alaska Eskimo Whaling Commission to conduct studies that lasted 20 years. Those studies showed that the population was indeed larger than estimated and that it was growing.

Knowledge integration and co-management in Arctic governance

Above I noted three characteristics of Arctic science that have improved the effectiveness of governance: TEK's integration into scientific recommendations, Indigenous people's integration into research institutions, and local communities' engagement in knowledge production and diffusion. All three are evident in the Arctic governing environment. Higher education institutions have begun to integrate indigenous people into scientific research, creating new centers for dialogue between different knowledge forms. The number of permanent scientific and educational institutions and the number of indigenous students is increasing. Examples include the Alaska Native Knowledge Network at the University of Alaska and the concentration of capacities in a circumpolar university collaboration network called University of the Arctic. Indigenous graduates of these institutions are employed at all levels of Arctic governance.⁶²

As indigenous peoples became co-managers of the local commons, they created hundreds of local and regional common property regimes.⁶³ Beluga whale management is a good illustration: As a result of the case described above, a co-management regime, the Alaskan Beluga Whale Committee, for managing the bowhead whale population was created,⁶⁴ followed by a wider Canadian Beluga Whale Management Plan.⁶⁵ Previous management had focused only on hunting quotas; the co-management regime focuses on maintaining a thriving population of beluga in the Beaufort Sea and providing for optimal Inuvialuit beluga harvest. Canada has similar co-management regimes for harvesting and conserving grizzly bears. When the Canadian government expressed concern over the decline of the grizzly bear population, it turned to indigenous hunters for advice. Hunters' observations became the basis of a co-management plan and the creation of a local regime to protect the bears. Hunters designed culturally acceptable regulations enforceable under government statutes.

Facilitating Arctic institutional integration: the Arctic Council

Despite the success of these local co-management initiatives and the prevalence of Arctic common property regimes, most resource management problems must be solved through transboundary collaboration. This has spurred Arctic countries to engage in resource management collaboration for both environmental protection and sustainable development across state boundaries. The Arctic Council coordinates this collaboration.⁶⁶ Its strength has been its creation of 'soft law', that is, quasi-legal but non-binding instruments employed across the region. 'Soft law' is *politically* binding in that it produces normative pressures to commit to peaceful cooperation on a regional scale. *Unique to the Arctic, 'soft law' focuses on sustainable resource management and addresses the*

*problems of climate change and environmental degradation in human security and human heritage terms.*⁶⁷

This provides new opportunities for non-state actors at all levels to engage in regional policy formulation and for states to establish mutual trust through collaboration. The role of indigenous people in the Arctic Council is a prominent example. As permanent participants, their organizations are regularly consulted for all decisions by the Arctic states. This has developed as an informal practice that gives them de facto veto power to reject proposals,⁶⁸ and they have become a role model for acknowledging the right of self-determination of indigenous people and the value of their knowledge on an international scale.⁶⁹ These groups sit at the same table with governments and, although they do not have voting rights, they can make table proposals. The Council also produces knowledge informed by its norms of preserving human heritage⁷⁰ and human security⁷¹ in its resource assessment processes. It creates international communities of scientists (both traditional and western), economic stakeholders, and decision-makers who then share this knowledge within their own local governance regimes.

Council publications inform policymakers, companies, and other stakeholders across all levels of governance, with regard to pollutants, natural conservation, and marine environment, and these stakeholders rely on Arctic Council reports. The shared world view of protecting Arctic common resources for future generations and bolstering Arctic security has normative power that informs and connects all levels of governance.⁷² Finally, the Council has made remarkable strides in facilitating regional interstate cooperation. Under its auspices, members have negotiated legally binding agreements on cooperation in search and rescue (SAR), marine oil pollution preparedness and response, and cooperation to enhance international Arctic scientific cooperation. The SAR agreement, which serves humanitarian goals, is notable for its security implications not captured by the realist model. Arctic SAR equipment like helicopters and icebreakers are used to detect and apprehend criminals, smugglers and those who are fishing illegally. To date, Arctic nations have been conducting training exercises and sharing data about the complex environment – bringing eight different communication and coordination processes together – in which actual joint operations will take place. In 2020, these exercises were interrupted by the COVID 19 pandemic, but parties to the agreement are holding an online ‘Arctic Guardian 2021’ exercise to begin to merge processes in a hypothetical case that follows a scenario in which an oil tanker and cruise vessel collide.⁷³ When implemented, the agreement can both save lives and address security threats without creating an Arctic ‘security dilemma.’⁷⁴

Conclusion

Covered by impenetrable ice sheets for hundreds of years, much of Arctic states’ territory is fuzzy and sometimes contested. With no overarching authoritative regime to manage and protect vital Arctic resources and mitigate conflicts, the Arctic appears to be in a state of global anarchy. But if the surface of apparent anarchy is peeled back, we can see the deep structure of a well-functioning grass-roots governing network infused with indigenous knowledge that feeds national and regional institutions, influences the

policies of Arctic states, and provides informal arrangements that nurtures cooperation and dampens Arctic conflict.

An even closer look at why this is so reveals an ethos of resource management that focuses on protecting human heritage and guarding human security. To translate this ethos into successful policy, local and regional common property regimes rely on scientific insights, both traditional and modern. While the idea of a global commons is closely connected to western scientific knowledge, networked common-property regimes in the Arctic are guided by local forms of TEK, which are often more valuable than western science in directing the management and protection of local resources. Because most disputes concern sovereignty over natural resources, the role of indigenous participation in governance is invaluable. The growing power of indigenous Arctic communities has provided Arctic governance at all levels with a holistic perspective based on traditional knowledge. Dispute negotiators bring that perspective to the table when they negotiate natural resource and boundary disputes. It promotes communication, constructive approaches, and conciliatory solutions, thereby greasing the wheels of cooperation between Arctic states. Cooperative practices carry over to interstate negotiations and therefore promote Arctic peace.

Radical changes in the Arctic over the last five decades – accelerated global warming, widespread non-renewable resource exploitation, and indigenous emancipatory movements – have raised the profile of TEK, its focus on preserving human and natural heritage, and its role in the kind of cooperative governance needed for a peaceful environment.

Co-managed common property regimes, new forms of knowledge production, and the Arctic Council as a model of an international collaboration based on ‘soft law’ all show that institutional change is required and possible in order to accommodate other forms of wisdom in the service of human and natural heritage and peaceful dispute resolution.

The world needs a proliferation of these kinds of regimes and communities who care about the long-term effect of environmental degradation, human security, and human heritage. The development of soft-law institutions and the inclusion of non-government actors in the Arctic are still unique but can become a role model for other world regions, if global commons are to be protected and peaceful. The preservation of Arctic peace can show the way.

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Notes

1. The “Arctic exception,” Article 234 of the 1982 UN Convention on the Law of the Sea is intended to give coastal states of ice-covered sea areas the necessary powers to control vessel source pollution. This is different than so-called “Arctic exceptionalism,” U.S. Senator

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