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The Shortest Nuclear Route to Climate Change to Great Power Competition: Tracing Arctic Security

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Abstract

Arctic security has been growing in popularity across academia, policymaking, and news media. However, this popularity has come with a notable question: What does Arctic security mean, and how/what knowledges underpin it? This study traces the discourse on Arctic security from the Cold War to the present examining the emergence of different types of security which range from more traditional variants to wider and deeper readings such as environmental and comprehensive security. I identify key strands of Arctic security discourse, trace their interaction over time, and periodize the region. While the Cold War era was dominated by nuclear and traditional security logic, there have been three main shifts since then including (a) the 1990s–2007, (b) 2007–2019, and (c) 2019–present. This research finds that Arctic security knowledge follows global security trends. Thus, as security has widened and deepened globally, so too have the potential meanings of Arctic security expanded. However, there is a clear hierarchy in today's general discourse with what issues take center stage for the Arctic such as great power competition and climate change. This is in contrast to the Arctic Council, which takes into account all but military security definitions for Arctic security and integrates them in a relatively balanced way. This has implications for ocean governance institutions and the degree to which traditional military security concerns should be left out of broader ocean governance.

Keywords

Arctic; Arctic Council; governance; knowledge production; security

1. Introduction

From the *New York Times* headlines portending a new Cold War in the Arctic to the vast expansion of online panels and conferences where experts debate what should be done about Russia, China, and climate change,

Arctic security has gained significant traction in recent years (Kuus, 2023; Steinveg, 2021). However, this popularity has come with a notable caveat, the question of what knowledges underpin the concept of Arctic security and how that process of knowledge production conditions how we think about Arctic security today. In this article, I trace the production of different types of Arctic security knowledge—with many diverging meanings that mean anything from food security, increasing great power competition on the world stage, a warning sign for climate security, and many other definitions. By showing how knowledge has been produced around Arctic security, we can better see what, if any, hierarchies exist within these different sub-types of security and how their integration into ocean governance structures such as the Arctic Council can provide lessons for ocean governance writ large. Ocean governance here is defined as the social processes, rules, laws, norms, institutions, and discourses that shake our behavior, decisions, and actions surrounding the ocean (Partelow et al., 2023). By its very definition, this includes land-based society, how this society uses the ocean, and the physical characteristics of the sea itself. Ocean governance is a broad term and encompasses many different topical areas including fisheries, marine spatial planning, seabed mineral resources and mining, shipping, the costs of pollution, and scientific research amongst many others. The diversity of topics is only exceeded by the number of actors and systems that are also involved including individuals, companies, states, international organizations, and systems that take part. Tracing Arctic security discourse has important takeaways for the broader study of ocean governance as it is through the understanding of discursive trends and shifts that the dynamics of power that underly all governance structures can be made visible, both exposing their biases and also the conditions under which they operate.

For this article, I periodize Arctic security dynamics into four times: the Cold War, the 1990s–2007, 2007–2019, and 2019–present. Such periodizations reflect not only the work of other Arctic security scholars but also reflect key moments in the Arctic, such as the creation of the Arctic Council, the planting of a flag at the North Pole on the sea floor (2007), and the Pompeo's 2019 speech at the Arctic Council calling the region a zone of competition (Huebert, 2019). Importantly, such periodizations often co-exist and are dialectical in nature.

Unsurprisingly, I find that Arctic knowledge has been produced in many different ways—changing over time and place. Since the Cold War, there has been a steady trend towards increasing types of Arctic security knowledges produced, beginning with simply traditional hard security concerns and moving to including environmental security, human security, comprehensive security, and even food security. The production of these different types of knowledge is conditioned by geopolitical circumstances (Andreeva & Hønneland, 2023). While the Cold War limited the production of Arctic security knowledge to matters of nuclear weapons, the end of the Cold War opened the door for different types of knowledge production. The institutions that formed in the wake of the Cold War, specifically the Arctic Council, have expansively integrated these knowledges into their governance structures. Environmental dimensions of Arctic security—particularly that of climate change—are a central part of the Arctic Council's work. Similarly, human and comprehensive security have entered the repertoire of the Arctic Council and are key parts of the reports that the Council produces. That being said, the production of Arctic security knowledge began to center around great power competition and climate change from 2007 onwards and has revolved primarily around these two types, leaving others on the periphery when it comes to scholarly discussions and national Arctic policies. The link from knowledge production to governance integration is certainly an important liminal space to investigate. However, given the limitations of this article, I have left such research to future scholars of Arctic expertise and ocean governance.

Understanding and tracing the production of Arctic knowledge and its integration into the Arctic Council has particular resonance today when the structural conditions of great power competition seem to have dominated the usage of the term security even outside of the Arctic region. Acknowledging other types of security is more important in this environment filled with geopolitical tension, particularly illustrating the potential benefits of keeping hard security matters out of ocean governance structures. Moreover, the exercise of tracing the concept of Arctic security provides historical context and grounding for today's regional security debates, giving more agency and voice to other types of Arctic security that otherwise have become sidelined in the academic literature on the topic.

In Section 2, I begin with a brief overview of my methods as well as an explanation of different types of security logic that I used to shape my results. Then, I turn to my different periodizations: the Cold War, the 1990s–2007, 2007–2019, and 2019–present. I finish with a discussion describing how there are serious implications for the hierarchical centering of great power competition and climate change as how we understand Arctic security in general discourse today, but that the Arctic Council's lack of military security in their mandate may provide lessons for how to avoid hierarchical integration in ocean governance structures.

2. Knowledge in Politics

Scholars have observed the increasing importance of knowledge in politics as modern society has grown more technological and complex (Christensen & Holst, 2017; Douglas, 2009; Fourcade, 2006; Kitcher, 2011; Markoff & Montecinos, 1993; Turner, 2003). Knowledge has always been important to decision-makers in security politics, whether one considers how states decide to invade which territory, which regions to colonize, or what weapons to build. There are serious questions that are raised when one is asked how knowledge is produced when it comes to matters of security and whether and how they become integrated. Knowledge in ocean and polar governance is even more complex, with a variety of different issue areas overlapping such as economic issues, security disputes, geopolitical conflicts, and environmental crises—all of which compete for attention in these increasingly important regions of the world (Otto & Menzel, 2024; Wehrmann & Zimmermann, 2022). While the integration of knowledge would have overall positive benefits for ocean governance in general, understanding how such knowledge is produced and then integrated is still under study (Paola et al., 2021).

To better understand how knowledge is produced and integrated surrounding the concept of Arctic security, I turn to concept tracing. Tracing the history of a concept is a time-tested method in international relations, specifically through exploring the role of discourse. Rather than taking a sociolinguistics approach or a poststructuralist approach, this research follows in the steps of Hansen (2006)—specifically her work understanding how NATO member states began to understand the Balkan war and interpreted the Balkan as violent. There are certainly alternative approaches to the analysis of discourse such as that of sociolinguistics which privileges the structure of language and the social, cultural, and political aspects of language and that understands language as having meaning only in and through social practices (Gee, 2005, 2011). Others may take a critical discourse analysis approach that emphasizes the dialectical relationship between discourse and society, understanding discourse as "devices that can foster common perceptions and understandings for specific purposes" (Howarth & Stavrakakis, 2000, p. 3). In short, for these scholars, discourse can have a causal effect. Poststructuralist approaches to discourse analysis suggest that there is no distinction between discursive and non-discursive realms (Laclau & Mouffe, 2001). However, Hansen's (2006) work—which

builds on a poststructuralist approach—is particularly useful for the research on concept tracing as it attempts to uncover how meaning behind discursive representation is produced and what meaning underlies them. Thus, tracing a concept such as "Arctic security" and attempting to understand how its meaning has shifted over time falls in this theoretical tradition. I define discourse here as "a system producing a set of statements and practices…construct the reality of its carriers and maintain a certain degree of regularity in a set of social relations" (Dunn & Neumann, 2016, p. 125). As I was interested in understanding the production and integration of Arctic security knowledges, I incorporated both academic discourses from the scholarly community as well as relevant state behavior documented in key texts, and critical governmental documents.

For this review, I used a variety of different databases searching for the term "Arctic security" including Web of Science, ProQuest, and Google Scholar, as well as searched through presidential libraries (where available online), openly available information on the CIA's reading room, and specifically explored the libraries of key Arctic think tanks such as The North American and Arctic Defence and Security Network (NAADSN) and the Arctic Institute. By using broad databases such as Web of Science, ProQuest, and Google Scholar and an approach that only privileged the term "Arctic security," I aimed to cover as many documents as possible. I was particularly interested in the academic discourse in question and thus I aimed to look primarily at academic sources to emphasize how the discourse on Arctic security in the scholarly community has developed. Other discourse on Arctic security in newspapers and more public discourse settings has tended to be more reactive in the past and does not fully encompass the nuance of the academic discourse on the topic. Moreover, when presidential libraries had online resources, I searched using "Arctic security" again as a concept to see how meaning was produced. To specifically find discourse that might not be present in academic sources, I also gathered documents from two key Arctic think tanks including NAADSN and the Arctic Institute. In total, I assessed 265 articles, of which 12 fell into the Cold War period, 36 fell into the 1990s–2007 time period, 89 fell within the 2007–2019 time period, and 128 fell into the 2019–present period. Importantly, the collection of these articles was stopped in mid-2023 as the article was being drafted and thus many more articles have likely been published since then. Selected key documents are cited below.

Once I collected the documents, I read through each and categorized each through an inductive manner for specific themes that emerged such as maritime issues and the centrality of nuclear weapons as well as the meaning of security that underlined "Arctic security," for example whether the security encompassed questions of environmental, comprehensive, military, human, and food objects. Each document could have more than one code. Once I coded each document, I classified them based on the time period in question and analyzed the extent to which some meanings of security competed with or self-reinforced the overall production of the concept of "Arctic security." To explore how these discourses integrated into Arctic governance, I analyzed the publications from the Arctic Council to see to what extent the produced meaning of security was found in public-facing publications and the general zeitgeist of the era in question.

3. Cold War

3.1. Production

During the Cold War, traditional security knowledge shaped how the Arctic was understood as a military front (Østreng, 1989). Arctic security thus was about the place (Nieminen, 1991) it played in the rivalry between the US and the Soviet Union whether through aerial bomber routes, submarine capabilities, the development

of radar systems across the North, and alliances like the North American Aerospace Defense Command. Thus, the primary type of knowledge produced around Arctic security was dominated by concerns about how to produce knowledge about nuclear weapons in the Arctic and defending from nuclear weapons primarily due to the hegemonic nature of the Cold War.

Characterized by being the only region that lay directly between the Soviet Union and the US, Arctic security was ruled by certain types of traditional security knowledge (primarily nuclear security) during the Cold War. Scholars and practitioners alike understood the region as a theatre of competition between the US and the Soviet Union—one where strategic bombers and nuclear-armed submarines could deliver nuclear weapons to their opponents (Jalonen, 1988; Østreng, 1991). As the technological development of nuclear submarines accelerated, the region transformed from one characterized by aerial defense and offense to that of submarine warfare. This was particularly important for the Soviet Union, as such changes in technology meant that they too had to modernize their submarine strategic nuclear weapons that were hosted with the Northern Fleet (Critchley, 1984; Østreng, 1991). Knowledge production around Arctic security was limited to topics including the importance of power projection, deterrence, and naval interaction among the great powers (Miller, 1992; Osherenko & Young, 1989). In tandem with the development of these weapons, so too came the rise of radars and alliances such as the North American Aerospace Defense Command to detect them, which began to litter the North (Charron & Fergusson, 2020; Sokolsky, 1986).

Some have suggested the region was narrated through particular concepts: (a) the Arctic as an aerial attack corridor, (b) the Arctic as home to a second-strike nuclear-powered submarine force, and (c) the Arctic as home to a series of radar systems (Frederick, 1987). In other words, "security considerations were cast only in military terms" (Huebert, 2000, p. 101). Further, the "gradual inclusion of the North into Cold War strategic planning made most governments conceive of Arctic security solely in military terms" (Østreng, 1999, p. 22). When discussing Arctic security in their seminal 1989 book *Age of the Arctic*, Osherenko and Young primarily focus on questions of nuclear weapons, emphasizing the narrative of the Arctic being the shortest air route between the US and the Soviet Union in the early days of the Cold War, the maritime areas of the Arctic as key strategic areas for ballistic missile nuclear submarines and high endurance manned bombers equipped with air-launched cruise missiles (Osherenko & Young, 1989). Griffiths' 1992 *Arctic Alternatives*, a second key book that outlines the Cold War era thinking of the Arctic understood security and Arctic militarization as being driven by extra-regional security requirements of the US and the Soviet Union. In other words, even though the Arctic wasn't the source of military security issues, it was militarized by the East–West conflict, the development of military technology (Griffiths, 1992), and the geostrategic conditions of the Arctic—visible in the shift in aerial to submarine technology.

3.2. Integration

During the Cold War, there was no region-wide Arctic governance implementation. Nonetheless, there is evidence that the production of this knowledge that surrounded traditional security made its way into states. When looking through the Eisenhower, JFK, and Truman presidential libraries, the only time the Arctic came up was in reference to nuclear weapons—whether in reference to concern about Soviet nuclear long-range bomber flights in 1958 or to Soviet nuclear-powered submarines in 1963 (Central Intelligence Agency, 1958). Similarly, Danish and Greenlandic understandings of the Arctic were primarily shaped around Greenland's strategic location as it had to do with global nuclear defense (N. Petersen, 1988). The *Canadian*

White Paper on Defence (Government of Canada, 1987) characterizes the Arctic Ocean as a region of strategic importance, specifically as it relates to the Soviet nuclear capabilities. Not only does the document call the Arctic an "operating area for submarines" but it also calls it a "battleground" linked in tandem with the development of nuclear power (Government of Canada, 1987, p. 50). Only concerns about nuclear weapons—both in the air and under the sea—and some rhetoric around radar systems are integrated into the limited documents available on Cold War Arctic thinking, suggesting that the geopolitical constraints from the US–Soviet Union ideological conflict made only certain types of knowledge palatable for states.

4. The Immediate End of the Cold War: 1990s–2007

4.1. Production

With the end of the Cold War, so too came the emergence of many different types of Arctic security knowledges. Some suggest that this shift in this thinking came from Gorbachev's seminal Murmansk 1987 speech, the international shift towards a comprehensive view of security, and the shift from an East–West dichotomy in the Arctic to a regional understanding of security (Østreng, 1999).

Perhaps the most distinct change was the sharp increase in concerns about environmental security and calls for increasing knowledge on the issue. Arctic security knowledge was produced more surrounding issues of environmental degradation and pollution, pointing to concern regarding the melting of permafrost, sewage, Arctic haze, and pollutants (Eriksson, 1995; Lamb, 1994; Østreng, 1991). It wasn't until the 2000s that environmental security began to include specific articulations of threats to the climate and the health of Arctic residents (Huebert, 2000). Some language also began to emerge around climate change as a threat multiplier to the Arctic, alongside specific issues that were again tied to access such as the opening of the Northwest Passage, the Northern Sea Route, and the access to natural resources (Goodman, 2017).

Other subtypes such as comprehensive and human security knowledges, while not popular, began to emerge during this era as well. Comprehensive security was originally formulated in the Brundtland Commission in the late 1980s while human security was written about first in the United Nations Development Programme 1994 report. Academic literature on human security and comprehensive security, however, is difficult to find in this early era. Instead, it appears that while different types of concerns—environmental, health, energy, and economic—were recognized as problems in the Arctic, they were not understood as distinct forms of knowledge.

This increase in concerns about the Arctic environment was also blended in some cases with traditional security logics—suggesting that measures should be taken to form institutions to protect both. This is not to say that traditional security knowledge that was produced on Russian military actions in the Arctic went away (Huebert, 2000; Lamb, 1994), but rather that their emphasis on deterrence and military build-up transformed into knowledge that instead emphasized the building of regional security alliances and institutions to create security (Young & Cherkasov, 1992). In tandem with this turn to knowledge integrated into regionalization, there was also a shift towards the production of knowledge that brought together concerns about environmental and traditional security concerns. Huebert wrote in 1999 that while questions of environmental security were becoming central for the Arctic such as the protection of the environment, traditional security concerns didn't go away in its wake. Rather these issues transformed into

questions of arms control, nuclear waste, and military technology development (Huebert, 1999). One specific case of how traditional security logics shifted into a more environmentally minded type of concern is that of nuclear waste. Some were explicit that the largest threat to security in the Arctic was the storage, handling, and disposal of nuclear waste in the Russian Arctic (Abelsen, 1999). They suggested that nuclear waste on the Kola Peninsula was not stored properly, that liquid and solid waste were dumped into the Barents Sea and if unmonitored could lead to catastrophic environmental results.

4.2. Integration

The end of the Cold War saw the explosion of regional initiatives in the Arctic, many of which integrated certain types of knowledge that were being produced around Arctic security. The end of the structural constraints of the Cold War as well as the vast expansion of different types of Arctic security knowledge made the further integration of many of these knowledges possible. Much of this integration came from the formation of the 1991 Arctic Environmental Protection Strategy—later the Arctic Council—which by its very nature leaves out discussions on military security. By contrast, cooperative security knowledge was used in promoting the Arctic Council as "exceptional" and the region as "exceptional" in tandem with the rise of liberalism (Koivurova & VanderZwaag, 2007; Stokke & Hønneland, 2007; Young, 2005). Similarly, specific knowledge on Arctic environmental security threats was produced and integrated into key reports on nuclear-ecological problems in the Arctic including an influential International Institute for Applied Systems Analysis 1996 report (Andresen, 1996), and an Arctic Council Arctic Monitoring and Assessment Programme report from 1997 and 2002 (AMAP, 1997, 2002). A 2004 report from the Arctic Council even mentions that there are serious concerns about nuclear-ecological problems in the Murmansk and Arkhangelsk regions including nuclear submarines, nuclear weapons testing on Novaya Zemlya, nuclear power plants on the Kola Peninsula, and waste in the Barents and Kara Seas (Arctic Council, 2004). Human security, while absent in this particular wording, is also present in the Arctic Council's *Arctic Human Development Report*—written and researched from 2002–2004. Some even conceptualized the Barents initiative as a type of comprehensive security that included "military, environmental, economic, cultural, political, and other issues" (Eriksson, 1995, p. 262). In short, the very creation of the Arctic Council as one that left out military security discourse allowed for the vast expansion of security discourse, ultimately permitting the institution to cover the vast number of issues included in discussions of ocean governance without forcing them to compete with one another for dominance.

The end of the Cold War heralded a new type of Arctic security knowledge, one that emphasized the importance of environmental concerns—particularly those of climate change. However, rather than fading away entirely, the discourse of Arctic security that focused on traditional threats and logics shifted to blend towards an environment-traditional discourse that opted for different types of responses to regional threats. Institutions instead of nuclear submarines. Security alliances rather than militarization. That traditional threats and logics did not disappear entirely is particularly notable as it illustrates that the region was not obliquely ignoring the very real issues at play but rather this era offered an opportunity for the inclusion of new securities in tandem with old concerns. The rise of comprehensive and human security in the Arctic, while early, also pointed towards the expansion of knowledges at play, some of which were integrated into Arctic governance arrangements.

5. The Beginning of an Arctic Boom 2.0: 2007–2019

5.1. Production

While it appeared that traditional security knowledge had faded into the background for the Arctic in the wake of the Cold War, it came roaring back with a vengeance (Kraska, 2011). Much of this can be attributed to how states behaved in the Arctic. Russia restarted their long-range bombers patrols which triggered states like Norway to reevaluate their Arctic policy with a new High North Initiative. However, it was Russia's flag planting on the "North Pole" in 2007 as a claim to part of the continental shelf that kickstarted much discussion of territorial ambitions and resource claims. These expanding types of security knowledges were mirrored in discourse which was dominated by the reemergence of great power competition and scramble narratives as well as the looming threat of climate change. However, this era also saw an increase in the discourse of Arctic human security. Expanding types of Arctic security knowledge can be directly connected to changing global security realities—not the least of which was the 2014 Crimean Annexation and increasing tensions between China, Russia, and the US.

The two most prominent scholars that exemplify this expanding interest in Arctic security are the knowledge debates between Canadians Rob Huebert and Whitney Lackenbauer, who stood on different sides of the Arctic security debate. Huebert and those who used the language of traditional Arctic security emphasized the importance of hard security challenges and climate change, exploring how warming temperatures and accessibility could be drivers of military competition (Gorenburg, 2012; Huebert, 2010, 2011, 2018; Huebert et al., 2012). These scholars also emphasized the role of China as a potential threat and Russia as a continuing threat (Flake, 2017; Konyshev et al., 2017; Lasserre et al., 2017; Lundestad & Tunsjø, 2015; Sergunin & Konyshev, 2014). By contrast, Lackenbauer suggested that Arctic scramble rhetoric used scare tactics to justify investments in national defense, serving short-term military interests rather than the longer-scale threats of climate change and human security, arguing that there was no Arctic race and true boundary disputes (Lackenbauer, 2010, 2014). This debate around the nature of Arctic security knowledge met what Griffiths (1992, p. 26) called "purveyors of polar peril"—those who linked the melting of sea ice, the new availability of natural resources in the region, and rising great power competition as part of a "scramble for the Arctic" (Borgerson, 2008; Murray, 2012; Sharp, 2011).

Climate change also continued to become more central to how most understood Arctic security—as both a homeland and national security issue as well as a bellwether for how climate change would shape global geopolitics (Avango et al., 2013; Gerhardt et al., 2010; Keagle & Mann, 2012; Lanteigne, 2016). For most, this meant prioritizing climate change as the main threat to the Arctic but tying it closely with geopolitical issues (Nicol, 2020). More accessibility due to melting sea ice would mean more oil and gas, shipping, and fishing—all with security consequences, both hard and human security in nature (Goodman, 2017; Lackenbauer, 2011).

Human security knowledge related to the Arctic also saw an enormous increase during this time (Nicol & Heininen, 2014). From 2007–2009, a project at Tromsø University specifically focused on human security in the Arctic led by Hoogensen Gjørv (Hoogensen Gjørv et al., 2009). She and others developed a multidimensional picture of Arctic security, drawing together strands of threats to the Arctic environment identity, food supply, community health, economic opportunity, and political stability (Hoogensen Gjørv et al., 2013). By 2019, human security had become a key part of the discourse surrounding Arctic security as

was particularly clear in the Arctic Yearbook's 2019 issue where an entire section touched on human security approaches (Goes, 2019; Middleton, 2019; Vuillerme, 2019; Zojer, 2019). The language that alluded to comprehensive security continued to be used across most of the other schools of Arctic security thinking although it was found far and in-between such as one article on why a comprehensive security approach was best suited for Arctic analysis (Hoogensen Gjørv & Hodgson, 2019), a conceptualization of human security (Heininen, 2014), and a project on a comprehensive approach to Canadian Arctic security (Ackren & Jacobsen, 2014).

Other very specific types of security knowledge began to emerge including food security. However, interestingly, the literature is quite divorced from other Arctic security texts and makes up its own relatively small corpus. Food security scholars emphasized resource sharing in Nunavut (Harder & Wenzel, 2012), food insecurity in the North American Arctic (Cruickshank et al., 2019; Loring & Gerlach, 2015), and Inuit food security—tending to emphasize Indigenous perceptions of insecurity (Ford & Berrang-Ford, 2009; Ford et al., 2006). Importantly, this is not to imply that there wasn't insecurity for Indigenous People before this time, but rather the language of security was beginning to be used rather than that of environmental resilience, economic development, and cultural identity.

5.2. Integration

These expanding knowledges were taken up in many cases by the Arctic Council. Environmental knowledge has always been a part of the Arctic Council given its history as the Arctic Environmental Protection Strategy so it is no surprise that climate change, environmental degradation, permafrost measurement, and tools for adaptation come up often in the reports from the Council during this era (Arctic Council, 2016). The boom in human security knowledge was also mirrored in the Arctic Council, specifically in its 2010 *Arctic Human Development Report* as well as the 2015 AMAP *Assessment on Human Health* and the 2017 *One Health Report*. These reports all illustrate that human security needs were being incorporated into the Council's work. While comprehensive security as a term was not used in Arctic governance, the recognition that Arctic security must incorporate multiple types of security knowledge was clearly there and played a role in the Council's work. As expected, the Council does not include military security as part of its mandate so knowledge on great power competition and hard security are not visible. The vast number of reports—of which only a few notable ones are mentioned in this section—does much to illustrate the productivity of the Council, notably showing that the expansion and inclusion of additional securities did not hinder its capacity to create new knowledge. The lack of military security perhaps actually was permissive in allowing this enhanced emphasis on human security even while geopolitical tension occurred outside the Arctic.

Marked by many significant geopolitical events, this era showed definitively that Arctic security discourse was inherently linked to geopolitical conditions. Moreover, this expansion of different types of Arctic security knowledges was met by a division between two hegemonic sub-types of knowledge, those surrounding great power competition and climate change. By contrast, many other types of knowledge such as human, comprehensive, and others tended to be less integrated although environmental and human security knowledges were clearly part of Arctic governance.

6. Explosion: Arctic Security 2019–Present

6.1. Production

Since 2019, Arctic security knowledge has again shifted alongside global security trends with knowledge production on the rise (Aksnes et al., 2023). Concern around global great power competition inordinately conditions how Arctic security discourse handled threats in the region—with many focusing on Russia and China. Paired with this is climate change as an important type of threat to the Arctic environment. States have primarily turned to these two drivers of Arctic security as the primary concerns, which has in some cases left out other types of securities such as human security and Indigenous security from governance integration.

The most dominant Arctic security knowledge produced since 2019 draws upon great power competition and the role of global strategic rivalry (Dean & Lackenbauer, 2019; Huebert, 2019; Lanteigne, 2019; Østhagen, 2020; Wither, 2021). Interestingly, such threats are also expanding and now include literature on hybrid warfare and the information domain (Bouffard & Carlson, 2023; Kertysova & Gricius, 2023; Lackenbauer et al., 2022; Østhagen, 2023). One of the more influential pieces by Lackenbauer (2021) distinguishes between threats through the Arctic (i.e., great power competition and global security dynamics), and threats to and in the Arctic (i.e., climate change). China's expanding geostrategic interests that include the Arctic are also a central topic in debates on Arctic security arguing that global competition between China and the West could spill over into the Arctic (Brady, 2019; Lackenbauer et al., 2022; Lajeunesse & Choi, 2020). However, Russia is also a central concern—particularly its military modernization and expansion (Buchanan, 2023; Lagutina, 2021; Lanteigne, 2019; Moe, 2020; M. Petersen & Pincus, 2021).

However, those approaching Arctic security through a traditional security lens also acknowledge that the region is vulnerable (in a security light) to climate change (Bouffard et al., 2020; Nicol & Chater, 2021; Østhagen, 2021) which has downstream impacts on Arctic residents and maritime security including search and rescue, sea conduct, and fishing (Huebert, 2021; Lanteigne, 2019). In other words, traditional and environmental security are no longer different types of security, but rather two sides of the same coin (Nicol, 2020). That being said, language on climate change as a threat multiplier is also present in the majority of pieces that touch on Arctic security—both in a traditional and environmental sense. This threat multiplier can be linked to natural disasters, infrastructure, governance, resource scarcity, shipping, economic opportunities, and military operations. Climate change drives environmental changes and ecological changes that can be negative for the Arctic. However, there has also been a rapidly expanding body of work that brings specific attention to the human and environmental security nexus (Greaves, 2021; Lanteigne, 2019).

Many reports since 2019 have taken an obliquely comprehensive approach acknowledging the role of political, environmental, economic, energy, human, and technology-based security (Bouffard et al., 2020; NAADSN, 2020; Zandee et al., 2020). This is a relatively steady trend that can be found both rhetorically in most texts and directly in others. Since Russia's invasion of Ukraine in 2022, some are drawing connections between Russia's war in Ukraine and its ability to project power or reach its economic and energy goals in the Arctic or whether cooperation in the Arctic to solve broader security concerns can happen at all (Koivurova & Shibata, 2023; Sukhankin, 2022).

Human security perspectives have also continued to proliferate, taking an ever-wider picture of what security looks like in the Arctic including questions of resilience in the face of communities to disasters and cybersecurity (Gricius, 2021; Kikkert & Lackenbauer, 2021). Indigenous perspectives also take on an increasing role here that use direct security discourse, particularly in regard to climate change (Dorough et al., 2020), energy security (Kvern et al., 2022), and food security (Borish et al., 2022; Natcher & Ingram, 2021; Ross & Mason, 2020). Importantly, although these perspectives may seem "new," such issues have been central to Indigenous survival for decades including concerns about environmental protection, the preservation of Indigenous identity, and restoring Indigenous rights and self-determination (Kuokkanen & Sweet, 2020).

6.2. Integration

The steady increase of Arctic security knowledge has reached an all-time high since 2019. Much of this has been driven by an increasing turn to the Arctic by states themselves. For example, the US—which had last published an Arctic strategy in 2013 (although has since published a 2022 version)—released Arctic policies across each branch of the armed forces from 2019–2021, the first time such an event happened in its history. Similarly, Canada released the *Arctic and Northern Policy Framework* in 2019; Norway released a policy in 2021, and the US and Russia released their whole-of-government approach in 2022. However, what is a commonality of most Arctic security texts during this time is the emphasis on great power competition and climate change, although there is recognition that Arctic security is growing increasingly complex.

The Arctic Council is a particularly good example that illustrates how the different types of Arctic security knowledge are being integrated into governance arrangements. As in the above Sections 4 and 5, climate change and knowledge about environmental security issues have continually been a central part of the Arctic Council's work. During this era, many reports call upon the shockingly quick pace of warming in the region, and draw attention to persistent organic pollutants (AMAP, 2021a, 2021b), and concern about how the region will become more resilient (AMAP, 2019). Human security was also increasingly a topic in the Arctic Council, but many reports also integrated this type of knowledge with concerns about Indigenous security with reports covering a broad spectrum of topics such as engaging with Indigenous People, local communities, connectivity, gender equality, and food security. Other reports also explored youth engagement and a blue bio-economy in the Arctic. This was also the case with reports on food security, specifically the *2021 Indigenous Food Security in the Arctic* report and several others including the *2019 Arctic Food Innovation Cluster* that combined knowledge on food security, Indigenous security, and human security. Comprehensive security language again was not included per se but there were several reports that illustrated the comprehensive nature of security knowledge that the Council was taking into account such as the *2020 Arctic Resilience Forum* report which dealt with resilience for Indigenous youth, food security, renewable energy, human health, connectivity, gender equality, socio-ecological resilience, and infrastructure. In other words, the expansion of Arctic security discourse was met with the same type of expansion in governance. Similarly, military security knowledge was not included.

7. Discussion and Conclusion

The analysis of how Arctic security knowledge has been produced and integrated suggests two lessons: (a) general knowledge production on Arctic security has become hierarchical—centering those types of knowledge that address great power competition and security as geopolitical conditions have changed—;

while (b) the Arctic Council integrates human, comprehensive, and environmental security in a relatively balanced way and is resilient to shifts in global geopolitics. This has implications for how ocean governance institutions should prioritize different types of knowledge.

First, the general discourse on Arctic security is conditioned by geopolitical events, leading to a hierarchy of what types of Arctic security knowledge are centered. While in the Cold War, only traditional security knowledge was produced and counted as Arctic security knowledge, it faded into the background upon the end of the Cold War. As great power competition heated up globally, so too did traditional security re-enter the realm of Arctic security. This vulnerability to outside influence suggests that knowledge production on Arctic security is reactive to global happenings. This is not all bad. For example, the rise of climate change as a central concern in Arctic security has merits for how Arctic states and communities will address it as a key threat. That being said, this reactivity to global geopolitics also implies that some types of Arctic security have become more central and sedimented over time. Great power competition and climate change have become hegemonic ways of defining Arctic security since the mid-2000s. Although other types of Arctic security knowledge have been developed that take more of a human, comprehensive, or even food-based approach, they are not central in the main security debates over how knowledge is produced. This hierarchy and sensitivity of Arctic security discourse likely also has implications for who has the authority to produce such knowledge. For example, it may be that academic journals such as *Polar Journal* and *Polar Record* have been home to more traditional security debates during the Cold War rather than other security knowledges. Structural academic conditions surely also play a role such as the disciplinary nature of the political science field in particular that has conditioned what is security, as well as placing the Arctic as a case into broader questions of global environment and security—leading to this geopolitical sensitivity. There is also certainly a role for understanding the key institutions and universities that also play a role in this knowledge production such as research groups including the NAADSN and the Fridtjof Nansen Institute, universities such as the Royal Danish Defence College and the University of Lapland, and state-sponsored centers such as the Ted Stevens Center for Arctic Security Studies—such an analysis of this constellation deserves its article rather than a marginal analysis here.

Second, while the general discourse on Arctic security is reactive and hierarchical—the Arctic Council's integration of different types of Arctic security knowledge does not appear to be so. The Council has, since its onset, largely integrated human, comprehensive, and even food-based knowledges around the region in its many reports in a relatively balanced way. While the Council is limited in that it does not incorporate military security as part of its mandate, this may be a strength not only for diplomacy between Arctic states but for the very nature of Arctic security knowledge itself. When scholars and states describe and act on Arctic security, traditional military security tends to be predominant alongside climate change—a norm that is difficult to unseat. By contrast, the Council has the freedom to set aside military security and emphasize the interconnectedness of many other types of security knowledge, making it more resilient to the hierarchy of security knowledge otherwise present and the moods of structural geopolitics. This is certainly not to imply that other hierarchies do not exist within the Council. Many scholars have written about the hierarchies between the permanent participants and the Arctic Eight and the role of Indigenous people as actors in the Council via the lens of structural injustice (Wood-Donnelly, 2023). Future work might interrogate how a more expansive notion of Arctic security is not met with a similarly expansive and inclusive governance approach.

Together these findings have some implications for how ocean governance institutions should prioritize and integrate different types of knowledge. First, because general discourse on Arctic security is conditioned heavily by geopolitical events and leads in many cases to the sedimentation of a hierarchy of some types of security, it begs important questions of how different securities are put into a hierarchy in a maritime capacity. For example, in discussions on ocean governance, how do environmental security concerns such as those surrounding pollution or ocean acidification compete with military security questions such as those surrounding piracy or counterterrorism operations? The findings from the above analysis across the entire article suggest that such competition might be sedimented over time as well and that structural factors such as that of the Cold War and increasing geopolitical competition will also impact what topical issues ocean governance institutions can focus on. For example, the UNCLOS encompasses many different types of security discourse including the differing priorities of an environmental security perspective—understood through discourse on protecting the marine environment—and an economic security perspective—understood via access to marine resources and regulations on seabed mining, fishing, and oil extraction. UNCLOS also underlies the establishment of exclusive economic zones, which has military security implications. Likely these types of security compete with one another for dominance and geopolitical competition as a security discourse is extending to even UNCLOS. In 2024, Russia considered exiting UNCLOS and in 2023, the US announced an extensive continental shelf claim. Although the UNCLOS remains a central institution in ocean governance, the extent to which it can remain outside competitive discourse remains to be seen. Similarly, the International Maritime Organization (IMO) is faced with competing security discourses. While parts of the organization handle military security threats such as piracy, other parts handle environmental security issues including oil spills and emissions, and others still emphasize economic security regarding the IMO's mandate to ensure safe and maritime transport. However, here again, geopolitical competition as a structural variable may have serious consequences on how these securities compete, particularly given Russia's ousting from the IMO Council in 2022. In response, Russian ships, in some cases, are no longer complying with IMO requirements—making shipping more dangerous. Last, the shifting role of actors such as the EU and its increasing focus on ocean governance begs the important question of what security will the EU prioritize and to what extent will it be conditioned by structural factors and not allow for more nuance in its discussions of security in the world's oceans.

Second, the vast difference between how Arctic security is understood via general discourse versus the Arctic Council offers insights for governance institutions writ large. By their nature, ocean governance institutions are faced with a myriad of different knowledges and must make choices about which to prioritize. Should trade between countries and economic issues take center stage or military security threats or environmental concerns? When military security is a part of an ocean governance institution's mandate, it often ends up taking a central role. Thus, other issues are sidelined. As one example during the Cold War, there was little to no discussion on ocean governance regarding the many oceanic issues that plagued the Arctic Ocean including weapons dumping, overfishing, and other concerns. Due to the hegemony of traditional security discourse, other securities such as those of environmental issues were simply not part of the equation. A second example regards the pause of the Arctic Council in the wake of Russia's 2022 invasion of Ukraine. In the wake of the pause, all cooperation regarding climate and environmental security concerns was entirely paused. Suddenly, sharing data to deal with the threat of climate change was no longer an option for Western scientists, leading to a real failure of ocean governance to balance the different discourses of security, when the discourse of great power competition as a security discourse so clearly became dominant. Previously, the Arctic Council had been considered different in that military security was avoided at the onset of the institutions in the

mid-1990s. This ability to sidestep current geopolitical concerns and tensions between states has made it resilient to shifts such as the 2014 annexation of Crimea and even to some extent, the 2022 full invasion of Ukraine. While the Council did pause for a year, it has recently restarted the work of the working groups that draw upon human, comprehensive, and environmental knowledges. Even with this restart of relations, there is something dominant about military security discourse that enables it to overcome the importance of other securities. This has implications for ocean governance institutions in general and exploring to what extent military security is incorporated into other governance institutions such as the IMO and whether it has hindered the resilience of these institutions in the face of increasing geopolitical competition. While this is just one institution under analysis, future research could explore other ocean governance institutions to determine if indeed taking out military security as a type of knowledge has overall positive impacts for these institutions, leaving such discussions to military-based fora. Similarly, future research could also explore whether the vast number of ocean governance institutions tend towards specialization of certain types of securities or whether there are some similar to the Arctic Council and attempt to cover the vast breadth of issues inherent in an ocean context.

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Conflict of Interests

The author declares no conflict of interests.

Data Availability

The data that support the findings of this study are available from the corresponding author.

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