

Review Article

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Scoping Arctic expertise: The mismatch between traditional theories of expertise and Indigenous expertise

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Abstract

While much work on expertise has explored the mobilisation and production of knowledge, the development of epistemic communities, and the mechanisms through which expertise operates – little work has been done exploring how expertise is understood across academic literature on particular regional cases such as the Arctic. In this article, I scope a broad literature review of the Arctic, seeking out how expertise has been depicted and framed in academic and theoretical literature. The results are framed around five different themes: (1) expertise serving the interests of great powers, (2) recognition of the overall importance of expertise in Arctic governance, (3) the purpose of experts, (4) science diplomacy and expertise: a murky barrier, and (5) how to study experts, but also find that Indigenous knowledge is often left out of literature that relies upon Western frameworks of expertise. This incongruity suggests that there are two competing conceptualizations of Arctic expertise, one in theory and another in practice – which has consequences for how the region and its expertise are narrated.

Introduction

The scholarship on expertise is by no means a new phenomenon in political science. Past work has conceptualised the existence of epistemic communities, expertise as a social relationship, and practice-based approaches (Adler & Haas, 1992; Berling & Bueger, 2015). However, little work has been conducted exploring how expertise is understood in specific regional cases such as the Arctic. Given the complexity of the Arctic, whether one discusses a security dilemma between Russia and the United States, the technicalities of climate change, or the advent of new shipping – expertise is a necessity in almost all discussions that have to do with the region. Thus, a review of how expertise has been understood and framed is an important first step to unpacking potential hierarchies in types of knowledge, unspoken biases in knowledge production, and possible points of contestation. This work understands expertise as broadly being understood as a performance and struggle through which knowledge claims become considered authoritative (Sending, 2015). Expertise is particularly important in the Arctic given the elevated status of science diplomacy as a key part of the region's history during the Cold War as well as the important role of expertise in its key governance structure, the Arctic Council, and Arctic environmental research.

In this article, I undertake a literature review of Arctic expertise, highlighting the common themes within this small but growing body of work. However, when conducting the review, I found that when using search terminology that drew upon Western frameworks of expertise and knowledge, Indigenous knowledge systems were often not included. Importantly, this is not to state that Indigenous scholarship and recognition that Indigenous knowledge and the political role of Indigenous People are not central in the Arctic. Yet, this literature does not utilise concepts and citations that more traditional works on science diplomacy and scientists adopt. This comes into contrast with a practice-based understanding of the Arctic, in which Indigenous knowledge is central to governance in the Arctic Council, national policymaking in Canada, and the Arctic Circle Assembly. I suggest that there are two different conceptualisations of Arctic expertise, one in theory and another in practice. These differences imply a mismatch between the two definitions, which has implications for scholars who – by leaving out Indigenous expertise as a central and critical role to every level of Arctic policymaking – may reinforce a hierarchy of how the South and Northern politics are understood, reflecting the often-colonial nature of expertise and are missing an important part of how Arctic politics plays out.

Conceptualising expertise

The study of expertise and expert communities has vastly evolved over time. First-generation scholars tended to emphasise the contribution of science and technology to cooperation and peace (Haas, 1958), the epistemic community framework (Adler & Haas, 1992), and understood

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experts as distinct actors. A second-generation approach emphasised the broader meaning of expertise, asking how different types of expertise produced an understanding of world politics, specifically in the realm of global governance (Kennedy, 2001; Kennedy, 2005). A more recent third generation has split the difference, combining the study of experts' practice, and their situatedness in historical and material arrangements alongside the importance of agency (Berling & Bueger, 2015). Alongside these scholars sits the work of science and technology scholars who have drawn distinctions between expert status as being produced via (1) a status or attribute conferred when someone's expertise is valued (Shapin, 1994) or (2) whether expertise is the outcome of successful boundary work where the expert has been able to build social capital and those who have not are marginalised (Evans, 2015). The continued research on expertise and expert communities is of particular importance in the modern world given the proliferation of misinformation and the rise of distrust in authority.

Perhaps one of the most traditional frameworks used to study expertise was through the language of "epistemic communities" that tried to determine whether such groups existed by arguing that a shared community of experts should share particular characteristics such as a shared commitment to a common causal model and set of political values (Adler & Haas, 1992; Cross, 2013). Other words have also been used that indicate a similar type of community of experts such as transnational communities (Djelic & Quack, 2010; Stone, 2017), communities of practice (Bueger, 2015; Adler & Pouliot, 2011) transnational guilds of professionals (Bigo, 2011), or transnational advocacy networks (Seabrooke, 2014). The concept of epistemic communities has shifted over time to explore more nuanced types of expertise as the original concept did not explore how such communities emerge, competition between them, and how consensus formed – particularly important questions that should be asked given that today's globalised world has presented problems that are increasingly complex and technical, requiring experts. This led to increased emphasis on the framing of expertise as a social relationship. Thus, expertise was not measured by attributes or characteristics (i.e., publications) that one has, but instead, it is something that one uses or performs (Kuus, 2014). This performance of expertise is a struggle for authority and can play out through a variety of different approaches.

As one example, some have emphasised how expertise is mobilised and produced, while others adopted field-theoretical approaches, and still, others explored what the mechanisms are through which expertise operates. As one example, Merje Kuus (2014: 3) explored how policy professionals mobilised expertise in Brussels to influence decision-making in Brussels, and argued that expertise is a social process "by which certain knowledge claims come to be considered authoritative." Another example is research conducted on the drafting of the Constitution for Europe in 2002–2003 (Cohen 2010). The author argued that legal professional communities were able to mobilise expert knowledge to put certain issues on the agenda. Field-theoretical approaches that rely on the frameworks of Pierre Bourdieu are also prevalent. Such an approach sees fields as social spaces where actors compete for recognition. For example, Trine Berling (2015) wrote convincingly on the North Atlantic Treaty Organization's (NATO) transformation in the 1990s, suggesting that NATO had to fight for its own survival in a changing European security field by drawing upon different expertise from think tanks. The study of how the mechanisms of expertise operate is a similarly interesting vein of study. Annabelle Littoz-Monnet (2022) argued that in the realm of

mental health, expertise moves through circular and exclusive patterns via frontier journals, boundary expert groups, and research clusters. In short, expertise on mental health was produced in a space that only produced orthodox and exclusive forms of knowledge that by their very nature excluded and marginalised others. Rather than taking a particular position on a type of expertise or framework, I am interested in how this broader literature on expertise, experts, and epistemic communities is found in an Arctic context, whether some key frameworks such as epistemic communities or communities of practice are used in the Arctic, and specifically if particular knowledges are marginalised when the language of expertise and experts is used.

Expertise in Arctic literature

Given that a significant amount of scientific cooperation has occurred in the Arctic, particularly during the Cold War, it is perhaps surprising that relatively few have written using the frameworks of literature on expertise and experts in the region. What has been written using this theoretical framework, I outline in a series of five themes: (1) expertise serving the interests of great powers, (2) recognising the overall importance of expertise in the Arctic across governance, the Arctic Council, and key technical areas, (3) the purpose of experts in the Arctic, (4) the murky barrier between science diplomacy and studying experts, (5) how to study groups of experts in the region, and (6) Indigenous knowledge systems.

To explore this literature, I used Google Scholar to search for "Arctic" + ("Epistemic Communities," "Transnational Communities," "Communities of Practice," "Professional Networks," "Adler and Pouliot," "Sending 2015," "Seabrooke," "Expertise," "Experts," "Guilds of Professionals," "Scientific Experts," "Scientists," "Indigenous," "Cross 2013," "Wenger 1998," "and "Haas 1953"). This vast diversity of both words and key scholars in the literature on expertise was used in order to capture all the different variants through which experts were studied. Regardless, it was difficult to find many examples of this body of work.¹ Importantly, the key citations that were searched for including Adler and Pouliot, Sending, Cross, Wenger, and Haas were included in the search parameters as they are central figures in the literature on epistemic communities and expertise. Thus, it was expected that a work that engaged seriously with traditional academic scholarship would include such scholars as part of a broader literature review. Although this literature review engages with expertise as a performance of knowledge that becomes considered authoritative, I did not search for terms such as "knowledge" or "authority" or "legitimacy" as I was particularly interested in scholarship that already identified or categorised particular knowledges as existing expertise rather than the process of gaining legitimacy or authority as part of the performance process.

Expertise serving the interests of great powers

First, there is literature that describes epistemic communities and groups of experts and expertise as merely serving the larger interests of states as part of the larger dynamics of state power transition (Bertelsen, 2020). These works described the work of experts and science diplomacy as mechanisms for non-Arctic

¹Two pieces of scholarship were left out in the below review. Iskanis & Pohjola, 2016 and Bertella, 2011 applied Wenger's "Communities of Practice" framework but focused on university-industry collaboration and tourism rather than through the lens of experts

states to collaborate or gain legitimacy. In other words, experts were involved in the Arctic, but they were instruments that states could use for their own purposes. For example, Rasmus Bertelsen (2018) explored how actors such as China use transnational knowledge networks and epistemic communities to build parallel channels for communication and trust between itself and the West in the Arctic. Bertelsen (2018a) similarly suggested that the Arctic has lessons for managing complex processes of power transition, specifically that knowledge networks may be impacted by geopolitical struggles such as increasing distrust towards Chinese investment in the Arctic.

Bertelsen also questioned whether some transnational knowledge networks met the high theoretical threshold that epistemic communities require and continued to suggest these networks are part of the interests of great powers (Bertelsen, 2019a). The author explored how transnational knowledge networks appeared in the case of Arctic shipping governance, suggesting there were many overlapping networks and epistemic communities that were all central to figuring out complexities that were not regulated by international law. These types of transnational knowledge networks varied across fields and states, particularly in the apparatuses of Russia, China, and the Gulf Cooperation Council states (Bertelsen, 2019). This theme seemed to emphasise formal groups of experts such as academics and the relationship between states and experts, a rather narrower conception of expertise that was restrictive. Further, this corpus of literature did not include Indigenous knowledge as part of these descriptions of transnational knowledge networks, nor were Indigenous knowledge holders part of the conversation.

Recognising the overall importance of expertise in Arctic governance

Second, a different group of scholars acknowledged that experts played a particularly important role in the development of Arctic governance with a more inclusive approach to expertise that conceptualised expertise as more than simply serving the interests of great powers (Chuffart et al., 2022). As one example, Gaute Friis (2017) argued that epistemic communities played a particularly large role in the development of the Arctic Climate Impact Assessment Report. Knecht & Albert (2022) took a broader approach, suggesting that the Arctic Council's Protection of the Arctic Marine Environment Working Group is a good example to show how scientists could engage in the spatial making of the Arctic. Koivurova et al (2015) argued that regional environmental governance in the Arctic can offer key lessons on governance elsewhere. The authors thought through the Arctic Council as a broad epistemic community that created knowledge about the Arctic. Such thinking that experts and expertise play an important role in Arctic governance is not just limited to the above example.

Overarchingly, it is acknowledged that experts are key players in Arctic governance, but how they are meant to interface with politics and diplomacy is still under debate and contestation (Rowe, 2018). Rowe (2018) further argued that there are significant examples of science-political competitions for authority in Arctic cross-border governance that these competitions constantly change, and that power is constantly redefined. The redefinition occurs not only across the Arctic but is used in reference to specific examples as below.

For example, Prior (2013) considered the role of polycentric governance around Persistent Organic Pollutants in the Arctic, recognising the role of science, expertise, epistemic communities,

and traditional knowledge in this particular issue area. Byers (2017) specifically mentioned the role of experts on technical issues including international law and geology as essential for how states make extended continental shelf claims as well as fisheries claims such as the Norwegian-Russian Fisheries Commission. Mason & Soilkova (2012) introduced new thinking about experts in the Arctic, specifically using ethnographic work to consider liquified natural gas production in the Arctic and energy development, drawing upon how experts build conceptual terminology and behaviour that conditions how this issue area has evolved. Although one of these examples does touch on traditional knowledge, the majority here do not use the term "expertise" to refer to Indigenous knowledge and more often than not reference Indigenous knowledge as part of the conversation but as a separate actor from scientists and "experts."

That being said, the role of experts and science diplomacy in the Arctic Council is a particularly heavily studied arena – in which Indigenous People play a central role (Binder, 2016; Koivurova et al., 2015). For example, Clemens Binder (2016) assessed the current state and future of scientific cooperation in the Arctic Council, arguing that science cooperation is a key part of the Council. Another scholar considered the diplomats of organisations like the Arctic Council as epistemic communities in themselves and part of the complex interdependence that makes up the Arctic region (Byers, 2017). Other literature suggested that this influence of experts largely came from the experience and success in assessments (Koivurova et al., 2015), but another suggested that this influence is contested – as it raises important questions like who speaks for the Arctic Council? Whose science is presented as predominant (Rowe, 2018)? On a meso-level, some looked specifically at key Arctic Council Working Groups and Task Forces as epistemic communities on particular issue areas (Byers, 2017; Friis, 2017; Bertelsen, 2018a). While Indigenous People are certainly mentioned across this particular branch of scholarship, they are often framed as rights holders and part of the conversation but again not the same as scientific experts.

Additional literature explored the ways in which experts play important roles in the Arctic, particularly focusing on conferences like Arctic Circles and Arctic Frontiers. Steinveg (2021) pointed to Arctic Circles and Arctic Frontiers as contrasting examples of arenas where epistemic communities frame debates, set the agenda, and bring science into the policy process. While Arctic Frontiers (2007) acts under a geopolitical paradigm, Arctic Circles (2013) operates under a global commons paradigm. Here, experts shed light on issue linkages, frame the debate, identify state interests, help form policies, and articulate cause-and-effect relationships. Again, the framing of experts here highlighted the interface of expertise in Arctic governance rather than a broader conception of expertise that might include non-traditional actors such as Indigenous People.

The purpose of experts

Third, experts are often studied as to their role in international politics, specifically in building East-West cooperation in the Arctic both historically and in today's world. For example, Wood-Donnelly & Bartels (2022) argued that science diplomacy is key for Arctic cooperation, specifically for issues related to climate governance. The authors drew upon the example of the United States' Geological Survey reports on oil and gas resources in the Arctic to show how "science" was transformed into common knowledge in Arctic state policy and discourse. As another

example, Berkman et al (2017) argued that the Arctic Science Agreement was an important signal for how science can be a tool for diplomacy when East-West cooperation was difficult to obtain through traditional channels. The authors further suggested that polar scientists are key actors in Arctic governance. These scholars explored how scientists have a particular purpose in Arctic governance, which often is as a tool for diplomacy, and left out of these conceptions of scientific experts the role of Indigenous People.

Similarly, Goodsite et al (2015) suggested that Arctic research stations played a particularly important role in connecting scientists across geopolitical changes in the international system. Historically, other scholars have explored how networks of scientists during the 1930s and 1940s in the Soviet Union and Europe played important roles in connecting both regions (Lajus & Sörlin, 2014). These purposes tended to match up with the importance of sub-national activism and human agency in relation to larger trends of geopolitics and similarly to previous sections, seemed to emphasise scientists and Western science as the brokers of knowledge and describe Indigenous People as important parts of the conversation, but not as brokers of knowledge or expertise holders in of themselves.

Science diplomacy and expertise: a murky barrier

Fourth, there was a huge overlap between the literature on groups of experts and science diplomacy in the Arctic. However, they broadly both tended to draw upon how science diplomacy was key for building relationships and as a mechanism for legitimacy. Methodologically, it was difficult to disaggregate the two from one another. Science diplomacy was often described as a new form of governance in the Arctic and mechanism that builds trust (Su & Mayer, 2018). As one example, Su & Mayer (2018) suggested four mechanisms that produce trust in Chinese science diplomacy. Another scholar, Sergunin (2022) suggested that there are different ways that Russian scientists approach science diplomacy, as either a technical approach, a regional soft power instrument or a norm of public diplomacy. Another specific example comes from Berkman (2014), who provided a useful descriptive article that explores how science diplomacy has contributed to Arctic stability and peace from 1920 to 2014, as key to building peace. These specific examples, drawing upon a science diplomacy framework, relied heavily on the idea of scientists as Western scientists rather than taking a broader conception of knowledge brokers or experts that would also include Indigenous People in the Arctic.

Svalbard emerged several times across the analysis (Chuffart et al., 2022). Caymaz (2021) conceptualised science diplomacy as a new form of governance in the Arctic, using Svalbard as a specific example of science cooperative research in the Arctic. Ruffin & Ruland (2022) analysed Arctic strategies and used two cases of Arctic science diplomacy (namely the Agreement of Enhancing International Arctic Scientific Cooperation and research activities on Svalbard) to argue that science diplomacy presents mechanisms for collaboration and competition. Indigenous People were not included in these works, but given that there are no Indigenous People on Svalbard, this is not surprising.

Perhaps most interesting was commentary on science diplomacy as a tool for China. Chinese science diplomacy is important to pay attention to because it shows how Chinese scientists have developed networks of trust, very much in contrast to the high suspicion that often forms around Chinese political behaviour in the Arctic. For example, Bertelsen & Su (2017) argued that Arctic

knowledge-based institutions are key regional institutions for Sino-Arctic engagement as they help China switch its image from an ambitious rising power to a science-based actor. However, internal Chinese transnational knowledge networks and epistemic communities are difficult to study and thus it is hard to make conclusions on the role of science diplomacy in domestic Chinese contexts (Bertelsen, 2019a). Science diplomacy and expertise – while difficult to disaggregate – still drew attention to Western scientists and I found little evidence of other actors across this literature apart from mentions of Indigenous Peoples as knowledge brokers, rather than including them as experts themselves.

How to study experts

Fifth, there were a few examples of scholarship that explored how expertise and groups of experts should be studied in the Arctic. Two authors chose particular material examples such as spectacle, charisma, key networking events, and the role of the handshake as examples of how bodily ethnographic work can reveal how expertise operates (Mason & Soilkova, 2012). Another scholar focused on the role of research stations as other material locations through which the interaction of experts can be studied (Goodsite et al., 2015). A more historiography approach has also been taken that explored long histories of the ways that experts interfaced with Arctic politics and diplomacy (Doel et al., 2014). The authors undertook a comparative analysis of Arctic knowledge production across the 20th century, showing how science has transitioned across the Arctic including professionalisation processes, investments, and how knowledge was produced on a national level. This theme relied on a meta-theoretical approach in these few cases that was interested in explaining how one should study the phenomenon of expertise. However, as above, there was little evidence that Indigenous People were included as the experts that these scholars were interested in studying.

Indigenous knowledge systems

Perhaps one of the most interesting phenomena found during the literature review was the difficulty in finding sources that identified Indigenous knowledge as expertise. It became clear during an early analysis that merely looking for literature based on keywords that relied upon Western concepts of expertise and knowledge was leaving out key actors in the Arctic – namely, Indigenous Peoples. As one example, Inkeri Koskinen (2016) argued that epistemic communities may be difficult to conceptualise when taking Indigenous knowledge into consideration as they do not fit into a limited objective view of science and academia.

This dearth of scholarship conceptualising Indigenous knowledges as expertise was interesting given that there is a vast amount of scholarship that explores the centrality of Indigenous knowledge to the Arctic. There is a significant number of pieces that, for example, illustrated how scientists can learn from local Indigenous knowledge to advance knowledge on climate change (Krupnik, 2009) and broader studies on how traditional ecological knowledge (TEK) was incorporated into climate change policy on a national, regional, and local level (Vinyeta & Lynn, 2013). As another example, Henry Huntington (2000) has specifically unpacked how TEK can be incorporated into science via specific methodologies. Andres López Rivera (2021) similarly wrote about the broader field of climate change governance diversified ways of knowing regarding the climate crisis, what he names “epistemic diversity.” He specifically used the Swedish side of Sápmi to illustrate how Indigenous Peoples have self-mobilised to mitigate climate change

on a community level. Further, another scholar Daria Burnasheva (2020) explored how climate change is understood from an Indigenous paradigm, reflecting on how Indigenous communities in Sakha are shaped by the ice. Nicolien van Luijk et al. (2021) presented the findings from their interviews with Inuit communities across Canada for how Inuit understand Canadian Arctic sovereignty and security – namely how these communities are concerned about increased shipping and interest in the Canadian Arctic.

A separate group of scholars have written about the political role of Indigenous People in the Arctic. While there are many that have explored this topic, particularly notable is Timo Koivurova & Heinämäki (2006), who wrote about how Indigenous People are particularly well suited to take advantage of soft law in the Arctic, particularly in the Arctic Council. Similarly, Monica Tennberg (2010) has built upon the idea of Indigenous People as political actors in the Arctic, arguing that Indigenous political agency is built upon multiple forms of power – particularly acting, this power may enable and constrain Indigenous political agency and there are multiple sites for this interaction. Similarly, Michaela Louise Coote (2016) explored the role of Indigenous People in the Arctic Council, finding that they are often successful in manoeuvring on questions of environmental governance in the Arctic although they are constrained often due to a lack of capacity. Greenland was also a common theme across pieces from the Arctic Yearbook, with many pieces across its history covering identity narration in foreign policy (Jacobsen, 2015), natural resource extraction politics (Dingman, 2014), and indigeneity (Sowa, 2013). The Arctic Yearbook also has had several full sections on Indigenous perspectives such as its section on “Indigenous, Northern and Gender Creativities and Perspectives” in its 2020 edition, “Art and Culture in Identity” in its 2021 edition, “People, Art, and Culture” in its 2022 edition, and most recently a whole yearbook with the theme “Arctic Indigenous Peoples: Climate, Science, Knowledge, and Governance.” In this edition, Yang Jian (2023) wrote about how expert communities have sources of power in the Arctic, how they mobilise knowledge, and how they contribute to Arctic governance. Again, across these works, Indigenous People are described in terms of their political agency and their role as rights holders and even as knowledge brokers but are not described through the framework of epistemic communities.

What is remarkable is that many of these authors and sources do not rely upon Western frameworks of expertise such as epistemic communities but rather use concepts of political actorness and TEK. There are some examples to the contrary but they are the exception more than the rule. For example, Beverly Kay Crawford (2021) identified Indigenous knowledge holders as participants in an Arctic epistemic community. However, she also suggests that recognising Indigenous knowledge must go beyond simple recognition and must include the integration of Indigenous Arctic People in research and institutions key to the Arctic. She uses the example of the Arctic Council as one case of how even if the framework of epistemic communities and expertise might not be often used to describe this phenomenon, the Arctic is likely unique in the central position that Indigenous knowledge plays in shaping policy. Additional scholars similarly have referred to Indigenous Peoples representatives as being part of the broader Arctic Council epistemic community (Koivurova et al., 2015), while another scholar has challenged that concept, stating that there is a challenge between Indigenous and scientific knowledge in the Arctic Council (Yildiz, 2021). In their introduction to the 2023 Arctic Yearbook, Lassi Heininen et al. (2023) specifically called Indigenous Peoples experts, introducing

the theme of the issue was meant to discuss Indigenous Peoples as part of an inclusive understanding of expertise. Perhaps the most comprehensive work on Indigenous Knowledge being incorporated into the Arctic Council was the work of Jen Sidorova, whose dissertation explored how and if TEK was utilised in decisions in the Arctic Council (Sidorova, 2020). She argued that TEK has been turned into lip service rather than genuine knowledge co-production (Sidorova, 2020a). Another scholar drew a conflicting conclusion based on the study of public health, finding that often Inuit knowledge is not taken into consideration regarding health in the Arctic (Fraser et al., 2021). This lack of consideration means that Inuit agency is weakened when Indigenous cultural and community ways of knowing are placed lower on the hierarchy than Western-based clinical knowledge. The implication that much of this literature would not have appeared without the inclusion of “Indigenous” in the search terms implies that there is something about Indigenous expertise that does not match with Western frameworks of epistemic communities, expertise, and communities of practice. Rather, such literature appears under different language and framing that instead emphasises Indigenous People as knowledge brokers (Sidorova, 2020).

The mismatch

The findings from the literature imply that when just undertaking a review of literature on expertise in the Arctic, particularly when using keywords from classical expertise pieces, Indigenous knowledge is often not found. This suggests that there is a disconnect between Indigenous knowledge and Western frameworks of expertise that often highlight science, scientists, and solely Western understandings of expertise. There were some key exceptions as above that touch on Indigenous traditional ecological knowledge and others that frame Indigenous People as knowledge brokers. One additional example is from Meek & Lovcraft (2022), who suggested that traditional, Indigenous, and local knowledge is necessary to create lasting and contributive policy on the Bering Strait. The authors argued that co-production of knowledge is essential and specifically name Indigenous knowledge as expertise in itself. Despite these examples, broadly speaking, Indigenous knowledge is often not framed using Western theoretical scholarship on expertise – leading to something of a mismatch.

The mismatch comes into play when one considers how Indigenous expertise is utilised in practice. Three short illustrative examples show the centrality of Indigenous knowledge to different levels of Arctic policymaking: (1) the Arctic Council, (2) Canada’s Arctic and Northern Policy Framework, and (3) the Arctic Circle Assembly. First, since its formation, the Arctic Council has recognised Indigenous input and expertise as inseparable from Arctic governance. As early as the 1996 Ottawa Declaration, traditional knowledge of Indigenous People was understood as key to understanding the Arctic, and Indigenous Permanent Participant groups were given important positions in the Council. This makes the Arctic Council unique as the only international organisation that gives Indigenous People a voice and special role in the organisation, although no voting power. Although they do not have decision-making rights, these groups play key roles in the organisation and their input is de facto recognised as expertise (Gamble & Shadian, 2017). As one specific example, the first Arctic Climate Impact Assessment in 2004 recognised Indigenous knowledge as key for climate change observation and mitigation and almost every Council report on

climate change since then has centred the expertise of Indigenous knowledge, recognising it as authoritative.

Second, for Canada's Arctic and Northern Policy Framework (ANPF), Indigenous knowledge is also centred as extremely important in both the creation of the document as well as the steps forward for Canada's Arctic approach. One of the goals of the framework is to include Arctic and Northern people in the knowledge-creation process, thus inherently recognising their input as expert knowledge that is key for creating Arctic policy (Kikkert & Lackenbauer, 2019). Although the language of expertise itself is not used, the inclusion of Indigenous knowledge as a central part of the policymaking process and the framework "define[s] knowledge inclusively, embracing the contributions of Indigenous knowledge as well as western science" (Government of Canada, 2019, p. 36). Moreover, the strong collaborative process of creating the ANPF, including roundtables, public submissions, and the appointment of Mary Simon as the special representative to the Minister of Indigenous and Northern Affairs, similarly suggests that for Canada, Indigenous knowledge is expertise in practice.

Third, at every Arctic Circle Assembly conference hosted in Iceland since its onset in 2013, Indigenous expertise and knowledge have been an important aspect of how politicians, academics, and scientists understand expertise on the Arctic. From plenary sessions on local Indigenous knowledge to the development of the Arctic-Global Indigenous Dialogue, Indigenous People have been on panels from every area of interest in the Arctic involving economic development, security, climate change, youth engagement, languages, cooking, legal representation, health, and governance. In other words, Indigenous expertise is an inextricable part of how this science-policy nexus space understands knowledge formation and creation in the region (Depledge & Dodds, 2017). That being said, while there is little work on the potential of tokenism of Indigenous participation at the Arctic Circle Assembly in particular, there is some recognition that Indigenous People are not as represented as they could be, given their central role in the Arctic (Johannsdottir & Cook, 2017) and that the perspectives of Indigenous People may be sidelined in favour of dominant sovereign perspectives on Arctic policies (Steinveg, 2021). Further, not all panels that include Indigenous individuals recognise their expertise by default. However, the very fact that Indigenous People and their participation are woven so fully into the Arctic Circle Assembly conferences illustrates that their input and knowledge are considered authoritative in some capacity and thus in some – but not all cases – are considered expertise. Future research could be particularly well-suited here to understand how Indigenous knowledge and expertise unfold at this conference in more depth.

Theoretical vs. practical understandings of Arctic expertise

When one considers the patterns of how theoretical sources frame Indigenous knowledge and draws it into comparison with the illustrative examples of just how central Indigenous knowledge is in Arctic governance as above, there is a clear mismatch at hand. In other words, there is a *theoretical* way of interpreting and conceptualising expertise that relies upon the terminology of expert communities and expertise. Such work tends to emphasise the role of individual scientists in East-West cooperation, international organisations, and science diplomacy. However, these Western frameworks tend to leave out Indigenous knowledge systems as part of their definition of experts. This is not to say that there is not a large amount of literature that does encompass the political agency of Indigenous People in the Arctic and the

centrality of Indigenous knowledge – just to name such topics – but importantly, these sources do not use the language of Western frameworks of expertise. By contrast, a *practical* manner of interpreting expertise centres Indigenous knowledge as expertise in its own right and at multiple levels of governance including the Arctic Council, the national policymaking in states such as Canada, and key conferences including the Arctic Circle Assembly.

There are consequences to this mismatch between a theoretical vs. practical understanding of expertise in the Arctic. Such a divide between how Arctic politics appears in print and in practice may lead to misunderstandings for those new to Arctic politics about how to recognise the importance of Indigenous expertise. Further, by not recognising Indigenous knowledge as expertise in itself, the theoretical understanding of Arctic expertise silences its real and critical role in almost every level of Arctic policymaking. This has implications for how scholars can understand politics, governance, and power dynamics in the region. Both of these consequences reinforce the hierarchy of the South to how Northern politics are understood and reflect the often-colonial nature of expertise. Moreover, it leads theoretical discussions of Arctic politics to misrepresent something critical to how these politics play out.

While this literature review has illustrated the surprising manner in which Indigenous knowledge is not portrayed as expertise in much Arctic literature on expertise, there are key ways to move forward that offer some suggestions. First, and most importantly, future work should more deeply explore why it is that Indigenous knowledge does not fit well into Western frameworks of expertise. Are there strategies that current theories of expertise can adopt that better encompass Indigenous expertise? In other words, what are the theoretical consequences of this mismatch? Second, Arctic scholarship should begin using "Indigenous expertise" or an Indigenous conceptualisation rather than "Indigenous knowledge" to illustrate the centrality of Indigenous expertise to Arctic governance. Importantly, Indigenous expertise might be conceptualised differently depending on different cultural and group contexts and thus every effort should be taken to avoid conflating Indigenous People as one group. Therefore, where necessary, stating Inuit expertise rather than Indigenous expertise if the case has to do with the Inuit should be undertaken. Third and last, future research could explore what possibilities there are to combine Indigenous theories and frameworks of knowledge and expertise and Western frameworks.

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