



"The Rise of the Snow Dragon: Assessing the impact of China's increasing role in the Arctic on the future development of its regional governance regimes."

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Abstract

The Arctic is heating up in more ways than one. With the loss of its ice comes a rise in states' national interests in the Far North, but whether the region will develop the governance required to effectively address its growing transnational challenges remains unclear. This research considers '*In what ways will China's increasing role in the Arctic impact on the future development of its regional governance regimes?*'. As a rising global superpower with increasing influence and ambitions in the Arctic, China's presence is one of the main drivers behind change in the regional status quo. Situational-structural regime theory is used to explore China's potential impact on the Arctic's overarching and interconnected '*Environmental*', '*Security*' and '*Economic*' regimes. This interest-based regime theory exposes how different degrees of cooperation evolve in each regime depending on the perceived national interests in developing transnational governance mechanisms. China's role is cross-examined against a series of regime-specific indicators of governance. They mainly investigate the impact this will have on the United States' and Russia's perceptions, and thus reactions, to Beijing's influence in these regimes. This research demonstrates that China, despite some potentially significant contributions, will mostly detriment development across the governance regimes, largely due to medium-term economic interests. However, it is the United States' perceptions of China's rising role, almost exclusively as a geopolitical threat, that is most likely to prevent regime development towards a governance capable of managing an increasingly contested Arctic; a warning for the future of global governance beyond the Far North.

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Introduction

The Arctic is a rapidly changing region. Climate change leaves it with the world's fastest rate of ice-melt (Tilling et.al., 2017) at twice the global average (Wang and Overland, 2012). It hosts some of the world's greatest powers within the circumpolar 'Arctic Eight' states (Keskitalo, 2004, p.45), such as the United States of America (US) and Russian Federation (Russia). It has long-drawn fluctuating levels of non-Arctic state interest, based on its environmental, scientific, geopolitical and most recently, natural resource and shipping potential. As its strategic value rises, the region 'heats up' in more ways than one (Chen, 2012, p.361) and yet 'for the first time in human history we have the opportunity to put in place effective governance mechanisms before there is massive development of a region' (Eichbaum, 2017, p.6).

China is a rising superpower with increasingly explicit polar ambitions since its Arctic white paper and Polar Silk Road initiative (SCIO, 2018; Ibold, 2018). Their increasing role in Arctic affairs, especially in relation to its great powers, is going to have considerable impacts on the development of the *Environmental*, *Security* and *Economic* regimes that constitute the key issue-areas of its governance. Chapter One contextualises present Arctic governance against its history of transitions. Chapter Two explores the development of the existing environmental regime through Beijing's impact on the various criteria that constitute its governance. Chapter Three tests whether China's increasing role will herald the return of great power politics by assessing their impact on positive and negative measures of security governance regime development. Chapter Four lastly investigates China's impact on the development of an effective economic governance regime through the Polar Silk Road and its Arctic shipping and resource interests.

This region of 'frontiers' behaves like no other, increasingly reflecting a 'subsystem' of wider global politics (Wegge, 2011, p.166). Arctic developments are neither delimited to intra-regional affairs, nor necessarily still insulated from extra-regional spill-over. As such, understanding the ways that China's increasing role will impact on the development of the *Environmental*, *Security* or *Economic* regimes is crucial for predicting future trends of Arctic regional governance, as well as acts as a 'bell-weather' (Huebert and Exner-Pirot, 2012) indication for how Beijing's rising influence could impact the development of global governance more broadly.

Literature Review

Whether under international relations, international economy, strategic studies, environmental politics, climate science, area studies or beyond, the academic lenses through which the Arctic is discussed are extensive, as are the publications producing Arctic-focused content. Of recent, increasing numbers of Arctic-specific literature has emerged through: news agencies such as BarentsObserver (2002), Arctic Today (2012) and High North News (2014); think tanks, research groups and academic institutions such as the UArctic (2001), Arctic Institute (2011) and most recently, Polar Connection (2016); and regular publications and journals in the Arctic Review on Law and Politics (2010), the Polar Journal (2011) and the Arctic Yearbook (2012).

Literature interpretations of the Arctic are divided along the lines of traditional international relations theory. Historically, post-Cold War analysis centred on the hope for multilateral cooperation through environmentalism and scientific research (Young, 1985; Clive, 1988; Stokke, 1990; Roginko et.al., 1992; Caron, 1993; Hønneland, 1998; Scrivener, 1999). Young, Hønneland and Stokke are keys proponents of the

institutionalist approach (Young, 2002, 2005, 2009; Hønneland, 2012; Østerud and Hønneland, 2014; Hønneland and Stokke 2007; Stokke, 2006, 2011; 2014a; Young and Stokke, 2020), though from differing constructivist and liberal perspectives. This school of thought emphasises the Arctic as a 'zone of peace' through the development of governance, regionalism and institutions around low politics (Neumann, 1994; Browning, 2010; Koivurova, 2011; Laruelle 2011; Byers, 2013). These scholarly 'reaffirmers' (Olesen, 2014, p.6) contend that even as the regions institutions are faced with increasingly complex governance needs, 'Arctic exceptionalism' will continue by reworking and extending them to overcome their increasingly difficult – yet largely mutual – challenges (Young, 2019; Byers, 2013; Rosamond, 2011; Hough, 2013; Brosnan et.al. 2011; Ebinger and Zambetakis, 2009).

This contrasts with the 'warners' (Olesen, 2014, p.6), 'alarmists' or 'Conflict School' (Macdonald, 2019) that argue that great power conflict will dominate at the expense of Arctic governance. Spurred by Russia's North Pole seabed flag plant in 2007 and epitomised by Borgerson's 'Arctic Meltdown' seminal Foreign Affairs piece (2008), these scholars support a realist perspective around the 'great game' of inevitable geostrategic competition and potential conflict erupting through a 'scramble for the Arctic' or 'Arctic Goldrush' for economic gains and geopolitical hegemony (Posner, 2007; Cohen et.al., 2008; Younkyoo and Blank, 2011; Blunden 2009; 2012; Anderson, 2009; Borgerson, 2009; Howard, 2009; Zellen, 2009; Sale and Potapov, 2010; Keil, 2014; Johnson, 2015; Spohr, 2018, Duxbury, 2020). Led by the likes of Huebert, they maintain cooperation was built on lack of strategic value and claim its re-emergence will inspire regional power competition, though not necessarily leading to inter-state military conflict (Huebert, 2010; 2019a; 2019b; Huebert and Exner-Pirot, 2012; Huebert et.al., 2012).

Literature recognising elements of truth in both approaches remains 'scarce' (Ohnishi, 2014, p.83), but is not without advocates. These 'inbetweeners' (Olesen, 2014, p.12) recognise the risk of geostrategic competition and spill-over from global issues that could hinder development of regional governance, yet in parallel observe that Arctic instability, competition and in particular conflict would be a lose-lose to even its most contentious actors (Miere and Mazo, 2013, pp.97-98; Zysk, 2011, p.108). This middle ground of 'negotiated exceptionalism' (Macdonald, 2019) acknowledges how shared national interests in environmental protection, trade, tourism, shipping safety etc. all produce selective cooperation, but that this is not a definitive safeguard against the 'great game' of geopolitics reaching the Far North (Petersen 2009; Wegge, 2011; Lackenbauer, 2011; Conley, 2012; Østhagen, 2017; Regehr, 2018; Elgsaas, 2019). Whilst this position requires 'giving up some degree of theoretical parsimony and ontological clarity' (Olesen, 2014, p.12), in doing so it avoids the 'series of false dichotomies' from traditional theoretically-driven approaches (Dunne, 2008, p.271) and places empirical usefulness and 'explanatory power' (Olesen, 2014, p.12) as central.

Literature interpretations of China's rise, in both global and Arctic affairs, is similarly divided The 'Idealist' view perceives China in pursuit of 'win-win' collaboration for mutual benefits through international cooperation and the status quo, underpinned by liberal institutionalist logics (Johnston, 2003; Nye, 2006; Alexeeva, and Lasserre, 2012; Liu, 2017). The 'China Threat Theory' perceives China's rise as revisionist pursuit of hegemony and power, driven by realist logic (Gertz, 2000; Brzezinski and Mearsheimer, 2005; Mearsheimer 2001; 2010). A fairer reflection of China emerges outside of dogmatic schools of thought, with the 'Pragmatist' view recognising China as a rational, interest-based actor pursuing varying levels of cooperation, competition

and conflict depending on perceived situational gains (Al-Rodhan, 2007; Wright, 2011; Li and Bertelsen, 2013; Carpenter, 2013).

It is from this 'middle ground' that the impact of China's increasing role in Arctic affairs will be assessed. This pragmatism allows for analysis through an interest-based regime theory, which is a less explored analytic lens for Arctic governance (Young, 2012; Wegge, 2011). This facilitates multi-dimensional analysis of the numerous – and sometimes seemingly conflicting – parallel pursuits of state regional national interests under different regimes, and thus for more nuanced and policy-practical research into the impact of China's increasing role in the Arctic.

Methodology

Definitions

The research question presents terminology that must be defined if they are to guide analysis. The increasing 'role' of China refers to their rising regional presence – whether physically, diplomatically, economically, politically or institutionally – and the influence and responsibilities that follow. The 'impact' of this role refers to the change that can be expected because of China's role in the region and the actions or reactions it will prompt from existing Arctic actors and institutions. This period of 'impact' spans from China getting 'ad hoc Observership' in 2007 (Jakobsen and Peng, 2012, p.13) over the short-medium term future to 2040, as by then we can expect the manifestation of the resources and shipping potential that is now only just beginning to change the status quo (Breene, 2017). 'Development of regional governance regimes' refers to how far China's role in the Arctic's enhances states' ability to manage shared challenges within the '*Environmental*', '*Security*' and '*Economic*' regimes (Underdal

1992; Young 1994), and integrate all three towards an Arctic regime complex of effective governance that upholds collective problem-solving, management of differences and produces outcomes of regional-global goods (Young, 2012, p.395).

Analytical Framework

Interest-based Regime Theory

Traditional schools of International Relations theory are too ontology-focused to credibly explain the ever-changing phases of the Arctic (Dunne, 2008, p.271; Østerud and Hønneland, 2014, pp.166-8). Offensive realists may explain Cold War Arctic classical geopolitics; defensive or structural realists have a case for US reaction to China's present hegemonic challenge; liberal institutionalists may come closest to explaining the development of cooperation and 'Arctic exceptionalism' through the advent of multilateralism and international organisations, but over-emphasise the influence of institutions and fail to explain issue-areas of non-cooperation even when they would in theory benefit states (Østerud and Hønneland, 2014, p.157). Constructivists or post-structuralists lose their salience in recommending practical policy by over-emphasis on the interpretivist implications of language, constructions and representations (Ó'Tuathail, 1996). Instead, drawing on aspects of both liberal institutionalism and realist logic, Arctic governance is understood through interest-based, situation-structuralist regime complex theory. Regime complex theory refers to a set of distinct essential elements (regimes) of a 'the same issue domain or spatially defined area [the Arctic], that are related to each other in a non-hierarchical manner, and that interact with one another in the sense that the operation of each affects the performance of the others' (Young, 2012, p.394). It assumes states are rational actors pursuing their perceived national interests by participating to lesser or greater degrees

in different regimes (Hasenclever et.al., 1996, pp.183-5). The situation-structuralist approach recognises the 'strategic nature of the situations in which states make choices about cooperation' (Oye 1986; Zurn 1992, 1993; Martin 1993), drawing from more realist state-logic to explain when states decide to create, maintain or develop different regimes based on game-theoretic reasoning of 'likelihood of [a] regime formation' that benefits the national interest (Stein, 1983, p.127-132; Snidal, 1985a, pp.936-939, 1985b).

The *Environment*, *Security* and *Economic* governance regimes have distinct memberships, issue-focuses and are at different stages of formation; combined they reflect the effectiveness of overall Arctic regional governance (Young, 2012, p.395). As China increases its role in Far Northern affairs, analysis of its impact on these distinct regimes individually and in sum will enable conclusions on its overall impact on the development of Arctic regional governance.

Regional-Global Governance

Traditional measures of top-down regionalism or bottom-up regionalisation such as close trading relationships, geographical proximity, shared history, homogeneity and cultural ties (Knecht, 2013, p.3; Griffiths, 1988, p.10) remain largely unmet in the Arctic. Whilst recent emergence of indigenous Arctic unity (Zellen, 2010) and institution-building illustrate potential shifts towards traditional regionalism (Knecht, 2013; Sale, 2008), the unique and vast territorial expanse of the Arctic as a 'region of peripheries' (Young, 2005, p.9) renders it best understood through the 'international region' lens (Keskitalo, 2004).

Whilst the global governance concept remains 'amorphous' (Zurn, 2012), literature definitions can be synthesised to: *the complex series of trans-national multi-*

actor interactions, decisions and cooperative processes that facilitate a multi-level order that can manage collective problems (see Domínguez and Velázquez, 2018, pp.3-5). The combination of the Arctic as a space with multi-faceted interdependent issue-based regimes with global implications; a multi-levelled polycentricity of relevant actors and institutions (see Heininen, 2015); yet one still 'largely intergovernmental' in authority (Ingimundarson, 2014, p.190) makes for difficult analysis. This complexity represents a 'microcosm' or 'subsystem of [the] larger global political system', and in turn analysis of regional governance is best served through a global governance approach (Wegge, 2011; Ohnishi, 2014, p.96), but doing so whilst still acknowledging the Arctic's distinct regional characteristics. Arctic governance remains largely 'state-led' (Abbot, 2012) and in the 'shadow of hierarchical state action' (Ludwig and Kok, 2018, p.4), best understood as unidirectional 'top-down governance' (Kacowicz, 2012, p.7). Resultantly, the following analysis focuses on the impact of the region's great powers on the distinct but interwoven and interplaying *Environmental, Security and Economic* regimes that underpin the overall regime complex that constitutes Arctic governance.

Research Methods:

The research methods chosen feature both primary and secondary sources. States are my main referent object for analysis, so I will explore national white papers and policy positions; speeches and statements by political leaders, and inputs into forums, summits and conferences of multi-lateral institutions to substantiate my analysis. This will be supplemented by a range of secondary literature that contributes to theoretical and empirical understandings of the Arctic, its actors and their role in shaping regional governance patterns. Select data and statistics such as foreign direct

investment, Arctic research funding or militarisation investments all will give credence to the arguments made on China's impact on the different regimes.

This analysis prioritises the actions and reactions of the tri-powers now operating in the Arctic: the US, Russia and China (Huebert, 2019a; 2019b). Whilst investigation of Arctic governance will be augmented by the plethora of other actors (whether other Arctic or non-Arctic states, non-state actors or multilateral institutions), these great power states possess the most ability to shape how regional governance develops in the Arctic by their positions vis-à-vis one another.

In this research, the evidence and data from these sources is cross-examined against the following criteria to assess how China's role will impact the development of regional governance regimes.

1. Chapter One establishes the historic phases of Arctic governance and the current governance context to which China's increasing role will make an impact.

2. Chapter Two combines an adapted version of Bennett and Satterfield's four environmental governance criteria of *effectiveness*, *equitability*, *responsiveness*, and *robustness* (2018, pp.3-6). Table 1 explains how each are used to assess the potential impact of China on the development of the Arctic environmental governance regime.

3. Chapter Three examines the dynamics of changing regional security governance in light of China's increasing role through a selective version of Schroeder's security governance criteria of *war and violent conflict*, *militarisation* (2010) as well as measuring preventive security governance through *Confidence- and Security-Building Measures* (Schaller, 2014). Combined, these criteria and

the datasets used to support them, shown in Table 2, gauges both positive developments towards a cooperative regime and negative developments towards competition or potential conflict.

4. Chapter Four investigates the nascent economic governance in the Arctic and the impact of China's Polar Silk Road Initiative on its development through the *Shipping and Trade Routes* and *Arctic Resources* that will constitute the core elements of any potential future economic regime development.

1. The History of Arctic Governance

To coherently analyse and draw predictions on the impact of China on the development of the Arctic's governance, we must understand its history.

The Arctic was long considered a vast unknown, with only sporadic polar naval exploration or scientific expeditions (Sale, 2008). The 19th-20th centuries gave it geopolitical importance, being central to MacKinder's 'heartland theory' (Sloan, 1999) and then in World War Two for transferring supplies, territorial annexation and conflict (White, 2007; Herring, 1973). In the Cold War, strategic importance meant even 'low politics' was pursued towards geopolitical ends (Østerud and Hønneland, 2014, pp.158-9). The 1973 Agreement on the Conservation of Polar Bears was a 'single-issue' success of Cold War cooperation, laying the foundation for future regional cooperation (Fikkan et.al., 1993), de facto establishing the 'Arctic Five' (Canada, Denmark, Norway, Russia, US) and demonstrating that governance could be achieved despite hostile geopolitical contexts.

The end of the Cold War saw Gorbachev's Murmansk Initiatives de-escalate the Arctic towards governance around common issue-areas (Åtland, 2008), such as

the International Arctic Science Committee (IASC) (Rogne et.al., 2015) which added Iceland, Sweden, and Finland as legitimate 'Arctic states' because of their Arctic Circle location, constituting today's Arctic Eight (Keskitalo, 2004, p.45). Negotiation towards dual IASC boards, with one for all members and another for Arctic states' exclusively (Smieszek, 2015), encapsulated the now reoccurring tension between regional and extra-regional powers in Arctic governance. Driven by smaller states, the Finland Initiative (Heikkilä, 2016) began institutionalisation of cooperation towards holistic 'governance', such as including indigenous groups in collective environmental working groups (Mayer, 2018). This culminated in the Ottawa Declaration and the Arctic Council (1996, 1997, 1998), the now central institution in an Arctic governance characterised by a polycentricity of authority, institutions and actors (Heininen et.al., 2015).

The history of Arctic governance is a history of 'paradigm shifts'; varying levels and focuses of state (dis)interests changing with the zeitgeist of the time (Heininen and Exner-Pirot, 2019). The success of low politics governance in recent years faces another 'transition' due to its heightening environmental, security and economic importance, especially from extra-regional superpowers like China (Hara, 2014a). The impact of China on these governance regimes individually will significantly shape the future of Far Northern governance in sum.

2. China's Impact on Environmental Governance Regime Development

The Arctic's current governance is centred around the environmental regime, with the Arctic Council, IASC and International Arctic Social Sciences Association examples of well-developed, environmentally focused cooperation. China's re-

engagement has largely been on environmental grounds (Jakobson and Lee, 2013, p.4) given the knock-on impacts of Arctic climate change on China, such as repeated ‘airpocalypses’ (Zou et.al., 2017) and flooding (Kimmelman, 2017) threatening domestic political stability. By cross-examining their increasing role against the criteria of *effectiveness, equitability, responsiveness, and robustness* (2018, pp.3-6). China’s short-term impact will widen the regime through internationalisation and deepen although resource commitment, but will detriment it in the medium-term due to the contestation, deadlocks, economic self-interest and potential informalisation they encourage.

2.1 Effectiveness

Effectiveness refers to how far something ‘supports the maintenance of system integrity and functioning’ (see Table 1) and is the criteria in which the Chinese role could have the most sustained impact, given its potential resource contributions and support towards the existing Arctic environmental regional governance regime (SCIO, 2018; Kong, 2018, p.3).

Capacity and Information

In line with their white paper commitment to ‘scientific expedition and research’ (SCIO, 2018), Beijing’s increasing role has included significant contributions in Arctic capacity and information. The Polar Research Institute of China has developed capacity to investigate ‘sea ice, glacial monitoring, and the atmosphere’ (Arctic Institute, 2020). China used their Svalbard legacy to create the Arctic Yellow River Station research centre in 2003 (ibid), whilst funding numerous collaborative centres such as the China-Nordic Arctic Research Centre (2013), the China-Iceland Joint Arctic Science Observatory (Schreiber, 2018), and for a future China-Russia Arctic

Research Centre agreed in 2019 (Devyatkin, 2019). Since 2007 China have conducted various expeditions for 'multidisciplinary comprehensive surveys' (Wei et.al., 2020), adapted or built their own 'Xuelong' (Snow Dragon) nuclear icebreakers (Eiterjord, 2018a; Digges, 2019) and partnered with Russian Pacific Ocean Research Institute (Eiterjord, 2018b), all boosting collective research information available. China's research spending increasingly 'far exceeds the contribution' of even major Arctic states such as the US (Ingimundarson, 2014, p.191, Humpert and Raspotnik, 2012), who have failed to maintain significant Arctic research capacity (Prine, 2018). As scientific cooperation is one of the 'best ways' to reduce shared costs (Huebert, 2013) and crucial for funding research under the 'haphazardly funded' voluntary Arctic Council structures (Bloom, 1999, p.712; Wodiske, 2014), China are filling the relative investment and interest vacuum left by Arctic powers (Dodds, 2012, pp.163-64). Their role will be a key driver in the development of the capacity and information available towards an effective environmental governance regime.

Coordination and Direction

China's increasing influence in 'intermediary institutions' as an indirect governance 'orchestrator' (Abbott et.al., 2014a) will develop coordination and to some extent direction within the Arctic environmental governance regime (Abbott and Bernstein, 2014, p.3; Abbott et.al., 2014b). In the International Maritime Organisation (IMO), China has increasingly leveraged its influence as a 'Class A' policy-making member (Brady, 2017, p.177) towards its 'enthusiasm for environmental protection' (Bai, 2015, p.687; SCIO, 2018), such as the Polar Code (2017) clauses on vessel environmental standards and pollution limits (IMO, 2020). Likewise, Beijing's significant 'influence' (Moynihan, 2018) in the negotiation of the 'Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean' (CAO) (2018)

guaranteed coordination on sustainable use of Arctic fisheries for at the least the next 15 years (Liu, 2018) and extended environmental governance responsibility beyond intra-Arctic states (Moynihan, 2018). The hosting of roundtables around emerging issues in Arctic international environmental law is indicative of Beijing's future 'active role' in legal coordination (Chatham House, 2018). China's increasing role across different intermediary institutions within the environmental governance regime places them in the 'driver's seat' of governance in the Arctic spaces which are not yet highly regulated (Koivurova, 2018; Wye, 2017; Bai, 2015, p.687). Their initiatives so far suggest China's increasing role in coordination and direction will bring partners together towards more a more effective environmental governance regime; prioritising more the international over regional problem-solving mechanisms.

Limitations remain, however, on China's ability to coordinate or direct governance intermediaries that are already in place. Whilst having 'respect' for indigenous groups in principle (SCIO, 2018), there is little impact that China's increasing role will have directly on the likes of the Inuit Circumpolar Council, nor are they likely to recognise Indigenous calls for banning non-consensual fossil fuel extraction (Schertow, 2012) ahead of their bilateral governmental economic relationships (see Chapter Four). Likewise, despite representation there by Heilongjiang Province, China's is unlikely to significantly coordinate or direct the Northern Forum towards better sub-national environmental governance (Brady, 2017, p.178). Despite observer status and keenness to contribute towards Working Groups and Task Forces, US Secretary of State Pompeo's 'doubts about the intentions' of China's environmental endeavours (2019a; Pentagon, 2019) demonstrates how the 'national interest' will impede Beijing's 'overreach' (Moynihan, 2018). A concerted US challenge to China's environmental governance role will hinder regime development

as subsequent political divisions prevent coherent transnational Arctic environmental strategy (Lackenbauer et.al., 2018, pp.69-71; Jakobson, 2010). Whilst not all Arctic states see China's role as threatening (Lasserre, 2010; Campbell, 2014, p.4; Sørensen and Klimenko, 2017) and Arctic Council mechanisms exist to prevent funding and environmental project dominance (Arctic Council, 2013b, Para 6; Moe and Stokke, 2019a, p.43), US misgivings could prevent the development of existing institutions towards a more effective environmental governance regime, though in more unregulated spaces China's role can deliver significant developments.

Accountability and Efficiency

The impact of China's increasing role to develop the *accountability* or *efficiency* of the environmental governance regime remains far less significant. Due to their extra-regional character and commitment not to be 'overstepping' in the Arctic (SCIO, 2018), China cannot act as a direct Arctic enforcer of rules or standards. It relies upon its ability to shape international or regional laws and agreements to develop accountability or efficiency in the regime. This, as discussed, largely depends on the intermediary actor it operates within and on its alignment or contestation with the perceived interests of the US, who act as 'regulatory power' over the direction and shape of Arctic governance (Ohnishi, 2014, p.97).

2.2 Equitability

Equitability refers to environmental governance that 'employs inclusive processes and produces fair outcomes' (Table 1). China's potential impact on these developments are varied; facilitating more extra-regional *recognition* and to some extent wider *participation* within the environmental governance regime, though not necessarily towards *fairer* or more *just* representation of actors within this.

Recognition and Participation

In terms of developments towards improved *recognition* and to some extent *participation*, China's role as a non-Arctic state now granted 'Observer Status' in the Arctic Council (Myers, 2013) is crucial. China's increasing role short-term will impact the environmental regime to develop towards more international and extra-regional 'stakeholder saliency' within Arctic governance (Wodiske, 2014, p.306; Stokke, 2014b; Chircop, 2011, p.14). Whilst unlikely to ever fully 'participate' as equals to Arctic states (Chater, 2016, p.173; Young, 2012, pp.280-282), China's influence in 'setting future agendas' should lead to further development of a more transnational environmental regime (Kong, 2018, p.2), especially with development of an Arctic East Asian tri-lateral agreement with Japan and South Korea (McGwin, 2018; Lanteigne, 2017, p.126; Gong, 2015).

Beijing's initial boost for recognition risks rising amounts of 'deadlock', especially if their rising influence culminates in more substantial powers for extra-regional states in the Arctic Council (Wodiske, 2014, p.326; Willis and Depledge, 2014). Fragmentation of traditional power structures (Young, 2009) risks informalisation towards platforms like the 'Arctic Five', driven by the USA as it defends its 'claims of pre-eminence' and resists China's increasing equitability in regional (Kuersten, 2016) – and to some extent global (Hamilton, 2014; World Economic Forum, 2019) – governance, which it sees at best as 'concerning' and at worst 'aggressive' proactivity (Pompeo, 2019b, Pentagon, 2019). Informalisation towards the Arctic Five (Kuersten, 2015) would detriment all non-Arctic states; the wider Arctic Eight, the indigenous Permanent Participants and the Arctic institutions (Kuersten, 2016; Pedersen, 2012) ability to influence the regime. Their Ilussiat (2008), Chelsea (2010) and Oslo (2015) meetings and two significant yet non-binding agreements

suggests concerns over informalisation 'undermining' the Arctic Council are not unfounded (Nielsson and Magnusson, 2015; Steinburg et.al, 2014, p.10). Even if the US reconciles its concerns over China (Ma, 2019; Hayes, 2017, pp.3-5), the increasing great power logic underpinning the 'Arctic Five-plus-Five' CAO Agreement (Morishita, 2019) still threatens the development of an equitable and representative environmental governance regime.

Justness and Fairness

Regarding *justness* and *fairness*, it is unlikely that China will possess a huge degree of structural impact on the fair distribution of either Arctic legal rights or socio-economic conditions. With the current system allowing selective voluntary contributions towards their national interests, China is unlikely to promote more institutionalised fairness in governance contributions (Bloom, 1999, p.712; Wilson, 2015, p.56,63). They will reinforce the soft law and 'general international law' (SCIO, 2018) status quo reaffirmed in the Ilulissat Declaration (AOC, 2008), rather than promote an Arctic Treaty or legal innovations, as this best serves their interests in internationalisation of the Arctic. Beijing's selective investment in resource rich areas will unevenly distribute socio-economic benefits (Lucht, 2018; Jiang, 2018), often also at the expense of environmental priorities. China's increasing role will worsen equitability in the environmental regime (Rahbek-Clemmensen and Thomasen, 2018, p.29), as selective national – oftentimes economic – interests dictate Beijing perceiving minimal situational-structural value in regime innovations towards justness or fairness (Young, 2009, p.423; Koivurova, and Molenaar, 2010; Young, 2016).

2.3 Responsive

The impact of China on ‘Responsiveness’ refers to how far they enable development of an environmental regime capable of ‘adaptation to diverse contexts and changing conditions’ (Table 1). The potential for China’s capacity to contribute to the *learning, anticipatory* and *innovative* capacities of the regime starkly contrasts to their role in the fragmentation and limitation of existing institutions *flexibility* and *adaptation*.

Flexible and Adaptable

Whilst without procedural votes, the significant ‘pressure’ and draw that China offers politically and economically (Rahbek-Clemmensen and Thomasen, 2018, p.10; Henriksen and Rahbek-Clemmensen, 2017) limits the development of a *flexible* or *adaptive* regime due to states increasingly taking China’s position into account, rather than the interests of the Arctic environmental regime. Whilst fragmentation towards different forums and governance institutions creates more flexible and adaptive ‘dynamic governance’ in the short-term (Stokke, 2011), this will detriment the equitability of outcomes in the medium-term, with the interests of great powers like Beijing – as opposed to key stakeholders – shaping the environmental governance regime.

Learning, Anticipatory and Innovation

China’s significant resource commitment has considerable scope to develop the *learning, anticipatory* and *innovative* capacity of its environmental governance regime. For example, they have constructed the world’s first 5-foot icebreaker able to work in two directions and thus conduct more comprehensive research journeys (SCMP, 2018), begun ‘standardisation’ of Arctic research technology (Eiterjord, 2018b) through ‘a myriad of long- and short-term unmanned research stations’

(Eiterjord, 2019) and are actively sharing their atmospheric and oceanographic monitoring data (ibid). This increasing contribution to Arctic 'knowledge-building' (Koivurov et.al., 2019; Bertelsen, 2018) will be an invaluable 'win-win' (SCIO, 2018) towards *anticipating, learning* and *innovation* in the regime to prepare it to cope with coming environmental changes.

However, the restructuring of China's Arctic activity under their Ministry of Natural Resources is indicative of the hollowness of their development of the environmental governance regime (Eiterjord, 2018b). Beijing's synonymity between environmental and economic research (Digges, 2019; Li and Bertelsen, 2013) may hinder the regime by deprioritising the environment towards its own definitions of 'rational use' (SCIO, 2018) of the Arctic for its medium-term economic interests (Kopra, 2019). Chapter Four explores their rising fossil fuel extraction (Filimonova, 2017); pursuit of minerals (Rosen and Thuringer, 2017, pp.54-56) and 'shipping and seismic exploration' (WWF, 2018, p.3), all of which drive 'Arctic amplification' (Mark and King, 2013) towards environmental degradation. Beijing's 'opportunistic adaptation' (Kristoffersen, 2014; 2015) prioritises the potential 'economic benefits of climate change' (Kristoffersen and Langhelle, 2016, p.34) and will worsen Arctic pollution, ecological impact and ice-melting trends. China's impact on the environmental governance regime will thus be as a significant contributor to the detrimental 'changing conditions' that require increasing environmental 'responsiveness' in the first place.

2.4 Robust

The 'Robustness' of the environmental governance regime refers to whether its 'functioning institutions persist, maintain performance and cope with crises' (Table 1). In this sense, China's broad status quo support should contribute significantly to

regime legitimacy and polycentricity at an international level, but to the detriment of regime subsidiarity.

Legitimate

Reflecting global governance patterns, China's role is not 'revisionist' (Koivurova et.al., 2019, p.11; Morse and Keohane, 2014) but pursues mutual 'respect' (SCIO, 2018; Grieger, 2018, p.4) vis-à-vis the status quo (Stephen, 2017, pp.490-491). China's accession to Observer in the pre-eminent governance institution of the Arctic Council (Myers, 2013) – accompanied by criteria recognising sovereignty rights and compliance with the existing institutional and legal frameworks already in place (von Uexküll, 2012) – gives credence to the white paper position that it 'highly values' the Council as the 'main intergovernmental forum in Arctic affairs' (SCIO, 2018). China not pursuing an Arctic Treaty (McGwin, 2020), conceding in UNCLOS to the right of Arctic states to administer the Arctic Ocean (Rainwater, 2015, p.144) and relying on revote approval for observer status every four years (Arctic Council, 2013a, p.13) all suggest China's role will continue legitimacy-building for the international laws and soft law customs that have been cultivated in previous decades towards environmental cooperation and protection across the regime (Exner-Pirot and Murray, 2017; Wilson, 2015, pp.56-59).

However, recent US-antagonism could exclude both China and climate change from Arctic environmental governance agendas, which risks China and other states to starting 'another club' (Koivurova, 2020; Eide, 2013), such as strengthening the 'Arctic Circle' forum which Beijing has already hosted (Brady, 2017, p.22), further institutionalising the Polar Silk Road (Kuo, 2019) or more bilateral agreements - to the detriment of a robust and effective environmental regime. The US perception of its

wider national interest to be in continuing this 'strategic competition' with China on a regional basis (Koivurova, 2019) is the only stumbling-block preventing short-medium term substantial gains in the regime legitimacy and robustness that should be delivered by China's increasing role.

Nested

In terms of nested decision-making, China's increasing role will limit the development of governance subsidiarity. China's national interest in the short-medium term is regime internationalisation (Jiang, 2014; Rainwater, 2015), and in turn will use their influence to promote the international-level legislation, institutions and agreements around environmental matters (Kong, 2018, pp.7-8). The global implications of the Arctic environment are its own source of legitimacy (SCIO, 2018), and to allow prioritisation of lower levels of problem-solving – even if more effective for the environment – would undermine its credibility and orchestration within the environmental governance regime (Moynihan, 2018; Arctic Institute, 2018).

Polycentric and Connected

In terms of the regime's polycentricity and connectivity, China is a committed participant across various forums, institutions and agreements in environmental governance such as UNCLOS, the various Seabed groups, the International Maritime Organisation or Arctic Circle Assembly and Arctic Council (Brady, 2017, pp.16-32; Magnússon, 2015). This diversifies the centres of governance authority, preventing reliance on one institution to provide environmental order. This avoids total regime deadlock should one forum have difficulty and deepens the states' interconnectedness through duplicity of cooperation. However, US scepticism to China's involvement in regional forums jeopardises the 'Rovaniemi Spirit' of 'negotiated exceptionalism'

(Koivurova, 2019; Exner-Pirot and Murray, 2017) continuing to govern the environmental regime, with the perception of China through a competitive great power lens (Pence, 2018; DoD, 2018, p.2) damaging connectivity and driving polycentricity towards ineffectiveness, bilateralism or diverging priorities, rather than shared environmental problem-solving.

Summary

Trends emerge across ways in which China's increasing role will impact on the environmental governance regime. Their ability to improve effectiveness and robustness largely depends upon the reaction of the US, as resistance is likely to undermine the depth of the contributions China's beyond recent initial advancements. Medium-term risks of informalisation and fragmentation will emerge if the US continues to perceive China's increasing environmental role as a threat, whilst Russia is less relevant to the environmental case as largely a status-quo and China-favourable environmental governance partner (Ohnishi, 2014, p.97). Environmental governance is likely to become increasingly internationalised because of China, creating more equitable extra-regional representation as the region becomes increasingly global, at the expense of the existing intra-regional forums, smaller states and non-state actors' ability to shape the environmental governance regime. China's economic prioritisation will paradoxically drive demand for more responsiveness and resilience in the medium-term. Whilst in some ways their investment will boost environmental governance capabilities, their role is likewise one of the major catalysts for why these improvements are required in the first place due to de-prioritisation of the long-held environmental-focused Arctic governance for more 'business-orientated' goals (ibid; Holroyd, 2014).

3. The Arctic Security Governance Regime and Re-emerging Multi-polar Power Politics?

Whilst wider interpretations, such as human or environmental security, have become increasingly popular (Kalliojärvi, 2019; Heininen, 2019), the Arctic debate concentrates on whether traditional state-led '[geo]politics is back' (Stephen, 2017, p.498). As 'high politics' national interests rise (Brutschin and Schubert, 2016), the 'New Arctic Strategic Triangle Environment (NASTE)' (Huebert, 2019b) between China-Russia-USA sits 'between militarisation and disarmament' (Exner-Pirot, 2019). The Arctic sits on a precipice that will either manifest in a security governance regime capable of managing rising armament peacefully or a deterioration towards traditional security dilemmas and balancing acts (Young, 2011; Åtland, 2014).

Chinese commitment to 'not be absent' from Arctic affairs and 'to participate' in the development of Arctic governance indicates they will influence the security governance regime. Despite the white paper not directly referencing security (SCIO, 2018), Chinese national laws, military leaders and commentators are increasingly recognising the need for a security role (Yang, 2018; MoND PRC, 2017; Li et.al., 2014) to uphold and protect its medium-term regional economic interests (see Chapter Four; Havnes and Seland, 2019). Assessing the impact of Beijing's increasing role against the criteria of: *Confidence and Security Building Measures, Militarisation, and War and Conflict* suggests that they will contribute to rising East-West tensions that will prevent regime development, but in a minor way compared to the US and Russia.

3.1 Confidence and Security Building Measures

'Confidence and Security Building Measures' (CSBMs) are preventive diplomacy tools that minimise 'military arbitrariness [...] misleading threat perceptions [and] military driven tensions and accidents' through transparency, openness and communication (Schaller, 2014, pp.1-2). Subsequent 'mutual confidence' [reduces] the likelihood of violent confrontation' (Maiese, 2003) and 'pave[s] the way for more peaceful relations' through organisations, agreements, treaties or codes of conduct (ibid). CSBMs in *disarmament, information sharing and joint military exercises* (Heininen et.al., 2019, p.3) are key gauges of security governance regime development and will demonstrate how China's role is likely to impact upon it.

Disarmament

For the most part, disarmament in the Arctic has referred to denuclearisation (Schaller, 2014, p.2), due to its historic inaccessibility, low conventional weapons prevalence (Hara, 2014b, p.10) and strategic importance for nuclear weaponry (Wezeman, 2012, p.8). The US and Russia possess 90% of the world's nuclear weapons and the Arctic is key for hosting general nuclear-powered submarines (SSNs) and those carrying strategic range ballistic missiles (SSBNs). Russia's Kola Peninsula hosts the bulk of its arsenal and its Northern Fleet bearing seven SSBNs, whilst almost all nuclear attacks on the US would need to pass through the Arctic (DoD, 2018a; Exner-Pirot, 2019; Regehr, 2019, p.276). Denuclearisation through a 'nuclear weapons free zone' (NWFZ) would begin confidence-building towards demilitarisation, facilitating security governance regime development through trust-building (Axworthy 2012; Buckley 2013; Prawitz 2011). Yet NWFZ initiatives by Iceland (Perry and Anderson, 2012); indigenous groups (Regehr, 2018, p.279) and civil society (Avery, 2013; Wallace and Stephen, 2010) have been fruitless, and Russian

is modernising its Arctic nuclear capacity whilst the US continues bi-annual Arctic nuclear exercises (ibid, p.278-81).

China's increasing role maintains or even extends nuclear armament trends, rapidly growing its nuclear capacity, currently owning six SSBNs (Patrick, 2018), constructing 'two new classes of nuclear-powered submarines' (Kristensen and Norris, 2018, O'Rourke, 2017) and investing in nuclear weapons innovations (Talmadge, 2019). CSBMs rely on the reduction of private information. Recent Chinese naval Arctic tours potentially transporting unannounced nuclear armaments, combined with long-term commitment to pursue their rightful interests (SCIO, 2018), risk deepening threat perceptions towards Chinese Arctic marine activity (Tiezzi, 2015; Huebert, 2019b) from the US (Stewart and Ali, 2019) and even Russia (Guo and Wilson, 2020). China is also disinterested in any NWFZ that risks more nuclear threat closer to their Pacific national priorities (Regehr, 2019, p.282), Resultantly, both Beijing's disinterest and regional Chinese nuclear threat perceptions – whether real or perceived – combine to undermine security governance regime development built on disarmament.

Information Sharing

Key to CSBMs as structural preventative diplomacy is the development of information sharing. In the Arctic, this would include location-specific information on military equipment or forces, prior warning for manoeuvres and exercises and 'person-to-person' military command meetings (Schaller, 2014, p.8). This manages threat perceptions through transparency and is consistent with interest-based bargaining principles (Levy and Thompson, 2010, p.68; Mitzen and Schweller 2011, p.12; Fearon, 1995, p.386). The Arctic powers, until recently, avoided developing hard security

governance to maintain 'soft' cooperation success (Elegaas, 2018; Koivurova, 2010, p.153). The Northern Chiefs of Defence Conference (NCDC, 2012) began institutionalising information sharing to manage Arctic Eight military-security disagreements (Strader, 2012; Klimenko, 2019, p.13), whilst the Arctic Security Forces Roundtable (ASFR) hosts the military commanders of the Arctic Eight, France, Germany, the Netherlands and the United Kingdom to discuss common security issues (Stephen, 2016).

Since the 2014 Crimea crisis, West-Russia hostility has undermined nascent information sharing developments due to 'ever-growing mistrust and confrontation', with both pursuing Arctic conflict simulations, GPS signal jamming and 'snap' military exercises (Depledge et.al., 2019; Tingstad, 2020). China's increasing role risks only encouraging further 'spill-over' of international security issues, to the detriment of its potential CSBMs and regime development (Rahbek-Clemmensen, 2017). Their increasing partnership with Russia post-2014, even if based on weak Sino-Russian foundations (Stronski and Ng, 2018), is increasingly espoused as a 'dual threat' (Havnes and Seland, 2019; Guo and Wilson, 2020) not only by the US (DoD, 2019), but by numerous other Arctic states such as 'Denmark, Sweden, Norway' (see Havnes and Seland, 2019). With Russia's expulsion, the NCDC has become an information sharing just regarding the threats posed by Russia and, increasingly, China (Vandiver, 2019). This builds East-West antagonism and undermines the development of an inclusive Arctic security governance regime capable of managing distrust and disputes.

Whilst China threat theory presents a short-term hinderance to information sharing, Beijing's 'scepticism' towards Russia's Arctic militarisation (Havnes and Seland, 2019); Sino-US shared interests in freedom of navigation (ibid) and medium-

term interests in an effective security governance regime (SCIO, 2018; Arctic Institute, 2018) could see the Sino-Russian partnership erode, to the benefit of Arctic CSBMs. If China leverages its increasing Arctic appropriate military resources to secure a place alongside other non-Arctic (but Arctic capable), non-Western powers into the ASFR, this would significantly develop the security governance regime towards a more stable 'division of authority, strategic alignments, and state coherence' (Tingstad, 2020; Macdonald, 2019, pp.1-2; Myers, 2016) through a widening of multi-lateral security governance beyond the West-Russia dichotomy (van der Togt, 2019; Rahbek-Clemmensen, 2017). The precedent for China and other non-Arctic states is set by the UK's membership and Arctic military exercises (Harris, 2016). A best case scenario would be information sharing culminating in an 'Arctic Military Code of Conduct' built on a the 'Arctic Five-plus-Five' model (Morishita, 2019), as this would institutionalise a 'dialogue mechanism' for open communication and collectively define 'unacceptable' military behaviour in the Far North (Depledge et.al., 2019). This would build confidence and ease threat perceptions even if the Arctic continues armament (ibid).

Yet, this relies on the US as regional 'regulatory power' reassessing its Arctic national interests (Ohnishi, 2014, p.97) because many Arctic-interested states rely on the US security-umbrella (Hara, 2014b, p.9), so will not contribute to a security regime development which is not aligned to Washington's interests. The US perceives their Arctic interests in its 'managed instability', because a stricter security governance regime would further limit their regional influence and unrestricted pursuit of national security interests (ibid). Combined with 'America First' anti-multilateralism (Pompeo, 2019b); perceptions of the Arctic as an 'arena of global power and competition' (DoD, 2018b, p.2; US Coast Guard, 2019; Sengupta, 2019) and commitment to an 'Arctic [...] governed by the actual nations of the Arctic' (Trump, 2019) suggest China's

increasing role will not lead to innovative developments in the regime. Instead, it will worsen existing US distrust by adding a new military power into the Arctic 'arena' (van der Togt, 2019; Hara, 2014a, p.39), risking entrenchment into 'East versus West' sub-regional arrangements (Macdonald, 2019, p.1) due fundamentally to US national interests directly contrasting to the development of a China-inclusive Arctic security governance regime.

Joint Military Exercises

Joint military exercises (JMEs) are CSBMs that build crucial mutual 'trust' through military-military cooperation and simulating scenarios (Roud and Gausdal, 2019). Historically, the Arctic has had successful search and rescue (SAR) and emergency response JMEs (Exner-Pirot, 2012) between its 'two camps' of Russia and the West, such as various renditions of 'Pomor' and 'Northern Eagle' (Elgsaas, 2019, pp.28-30; Conley et.al., 2012). Recent efforts have institutionalised JMEs into the semi-military Arctic Coast Guard Forum (ACGF) which was established 'to foster safe, secure, and environmentally responsible maritime activity' between the Arctic Eight (Elgsaas, 2019, p.29; ACGF, 2017, 2020) and the Arctic Search and Rescue Agreement (2011) legally-binding states to certain SAR standards - the first hard law development of the Arctic Council (Luszczuk, 2014). However post-Crimea, military exercises conducted by both Russia and NATO are increasingly antagonistic (Depledge et.al., 2019) rather than joint or cooperative. China's role is unlikely to have much impact on intra-regional military cooperation/agreements such as on SAR or the ACGF. However, whilst not yet deployed in the Arctic, the repeated involvement of thousands of Chinese military personnel in JMEs with Russia may represent a Sino-Russian CSBM, but demonstrations of genuine military partnership will only worsen

the 'East-West' Arctic divide towards US-led regional distrust (Weitz, 2015; Dibb, 2019) and derail the development of the security governance regime.

3.2 Militarisation

Traditional measures of 'militarisation' in security governance are 'a state's military expenditure [and] its military capabilities'; gauging propensity or aptitude for 'military conflict and escalation' (Schroeder, 2010, p.18). The development of the Arctic security governance regime depends on how far China's attributes in both military expenditure and region-specific capabilities are perceived to coincide or compete with the regional great powers' national interests.

Military Expenditure and Capabilities

The Arctic does not feature on most assessments of region-specific militarisation due to its unique 'rimland' characteristics (Østerud and Hønneland 2014, p.172). However, military expenditure is a useful barometer of the risks Arctic militarisation presents to the development of a security governance regime. The USA has the world's highest military expenditure, increasing 14% from 2007 to 2018, whilst Russia's increased 29% across the same period to rank 4th (SIPRI, 2019). In the more holistic 'Global Militarization Index' (GMI), their rankings – combining *Military Expenditure Index*, *Military Personal Index* and *Heavy Weapons Index* scores – are consistently high across the same period, with Russia particularly militarised at 4th to then 6th highest (BICC, 2019) compared to the US's 33rd to 31st. Both are exposed as considerably military-prone and capable actors by their relative positions, hence tension over armament is expected. China, by comparison, shows significantly more military expenditure growth at 173% to reach 2nd place (SIPRI, 2019), though its GMI scores of 91st to 94th shows this change minimally impacts its overall militarisation as

a nation (BICC, 2019). Its military growth is instead consistent with what one might expect for the world's rising economic superpower rather than of a nation with particularly aggressive military ambitions (Sonmez Atesoglu. 2013). Even for alarmist critics, this bodes well for the Arctic security regime; China is unlikely to present a revisionist military power threat (Huebert, 2019b). As of yet, 'there are no signs that China's military presence in the region has in any way increased' (Kopra, 2019); Arctic capacity was not mentioned in its latest military modernisation strategy (PRC, 2019), nor its Arctic white paper (SCIO, 2018). At face value, China's considerable expenditure and capabilities should not present significant regional threat to the development of the security regime.

Dual-use Military-Civilian Capabilities

Yet, narratives over the 'Chinese dream' and 'newly assertive foreign policy' (Zhang, 2015, p.9) as well as China flagrantly ignoring the South China Sea resolutions which were bound by the same legal logic as the Arctic (Peng and Wegge, 2014, SCIO, 2018) has engendered threat perceptions among Arctic actors around China's true intentions. Its South China Sea claims were justified by supposed environmental national interests (Johnson, 2015, p.107), yet Beijing have since constructed artificial islands to control strategic border locations and potentially 'billions of barrels of oil' (ibid). Whilst it would be an overestimate to assume China's approach would apply similarly to the Arctic, (Østhagen, 2017, p..240-1), the dual-logic behind developing civilian capabilities for long-term military interests will damage the development of not just the security regime but Arctic governance more broadly. Distrust emerges over China's increasing civilian role; its investments in Swedish satellite data (FOI, 2019), its increasing number of scientific nuclear icebreakers (Huebert, 2019b, p.84) and its mapping and remote monitoring for environmental

research (Havnes and Seland, 2019), all present a 'dual-use' threat that could be turned against Arctic powers (Humpert, 2019; Laskai, 2018). Whether well-founded or not, US-led assumptions that 'China's pattern of aggressive behavior elsewhere will inform how it treats the Arctic' (Pompeo, 2019b; ISAB, 2016) means China's increasing role impedes the development of a more spill-over resilient multi-lateral security governance regime, undermining the positive impacts it could have on the development of the environmental regime.

3.3 War and Violent Conflict

Traditional indicators for an actor's propensity for *war and violent conflict* include involvement in internal and external military crises and how they respond to and how often they are involved in foreign and military policy crises (Schroeder, 2010, p.12). In the Arctic, this is a gauge of the likelihood of Arctic powers to turn to the use of war and conflict in the resolution of crises or tensions as the region 'heats up' (Hara, 2014b).

Since 2007 in Global Peace Index (GPI) scores, both the USA and Russia have deteriorated from 96th to 128th and 118th to 154th respectively (IfEP, 2019). From the UCDP dataset we can see Russia has been the first or secondary actor in 21 separate conflicts, compared to the US' 95 (Pettersson et.al., 2019), notably in the ICB dataset up to 2015 on foreign policy and military crises, Russia's 3 incidents have all prompted major responses of '*multiple including non-violent military acts*' to '*multiple including violent military act*', as did the 4 out of 5 of the US major crises responses (Brecher et.al., 2017). Combined, they demonstrate two actors with a tendency towards major reactions to crises and regular involvement in war and violent conflict. Yet much of these tendencies play a secondary role in existing conflicts, almost completely

excluding 'Great Power' or 'Superpower' sources of threat (Pettersson, et.al., 2019); important because regional peace relies on the two Cold War powers. This is likely why the perceived regional risk of direct war and conflict 'remains low' for both the US (USGAO, 2018) and Russia (Heininen et.al., 2014) even as geopolitical tensions rise.

The rise of China for some presents a conflict-risk over their growing need for limited natural resources, for non-US controlled 'sea lines of communication' (SLOC) (Lanteigne, 2016, pp.153-5) or for its pursuit of geopolitical hegemony (Huebert, 2019b). Yet, since 2007 China has been and remains more peaceful than the Cold War powers despite its rank falling from 60th to 110th in the GPI (IfEP, 2019); other than minor UN multi-lateral secondary involvements in Mali, in the UCDP only registered one conflict as the primary actor (Pettersson et.al., 2019); whilst its singular foreign policy crisis only prompted a '*verbal act*' as its major response (Brecher et.al., 2017). Whilst China's increasing presence might intensify tensions toward a NASTE (Huebert, 2019b), war and violent conflict would be a 'nightmare scenario' for China (Lanteigne, 2016, p.155) because securing stable peace and a better security governance regime facilitates pursuit of their environmental and particularly economic Arctic national interests (SCIO, 2018). Thus, the likelihood of war and violent conflict is unlikely to be significantly increased by China and for the most part is unlikely at all given long-standing interest-based avoidance of direct great power conflict.

Summary

The increasing role of China in Arctic affairs is going to have a marginal, though largely negative, impact on the development of the security governance regime. They are unlikely to encourage or react to tensions with violent conflict, and their militarisation appears appropriate rather than particularly threatening or in pursuit of

regional hegemony. However, in building their military partnership with Russia, the lack of transparency over their Arctic-capable vessels, and dual-use civilian-military Arctic capabilities build a threat perception for the US and hinder the potential for positive CSBMs. With the US perceiving 'managed instability' as in its national interests (Hara, 2014b, p.1) and Russia pursuing militarisation as part of its great power 'status-seeking' (Grajewski, 2017), China's rising but considerably lesser security role is only likely to deepen existing East-West security trends of the Arctic rather than impact it towards effective regime development. .

4. The Polar Silk Road and the Arctic Economic Governance Regime

As an 'international region', traditional criteria of economic regional integration do not apply, yet due to regional focus, nor do traditional indicators of global governance (Albert and Vasilache, 2018). Yet, this is not to say the Arctic economic regime does not have key issue-areas upon which China has an increasing influence and through which its impact on governance development can be assessed. Both *Shipping and Trade Routes* as well as *Arctic Resources* are key facets of the Arctic international economic governance regime, where development of cooperation and collective problem-solving is embryonic but has potential to grow as global national economic interests in the region rise (Frederiksen, 2019). They are likewise two of the main foundations of China's 'Polar Silk Road' (PSR), with 'Arctic-related cooperation under the Belt and Road Initiative' (SCIO, 2018) – a key ambition because of the region's self-confessed potentially 'huge impact on the energy strategy and economic development of China' (ibid). Whilst important, issue-areas such as tourism and agriculture are not included due to their more intra-regional nature and less pre-

eminence in Chinese strategy and influence, whilst their overlapping constructive role towards Arctic environmental-economic governance of fisheries resources has been covered in Chapter 2.

4.1 Shipping and Trade Routes

Arctic Shipping Governance

Governance of shipping across Arctic waters as crucial to the changing nature and needs of Arctic governance has been touched upon previously (Stokke, 2012), with key developments such as the Polar Code (2017), SAR (2011) and ongoing seabed and EEZ dispute resolution through UNCLOS (Carlson et.al., 2013). By 2040 there is expected to be consistently viable commercial shipping across the Northern Sea Route (NSR), and to a lesser extent the wider North-west and -east Passages (NWP/NEP) (see Figure 1). Whilst future trans-polar shipping potential goes beyond this study, it represents a long-term pull for China's Arctic interests (Melia et.al., 2016; Bennett, 2019). The development of the economic regime relies on successful cooperation around accessibility to shipping lane governance (Stokke, 2013). Yet sovereignty and maritime borders present long-standing tensions over freedom of navigation, the US-Canada dispute over the Beaufort Sea, US-Russia over the Bering and Chukchi Seas and continued disagreements over the legal status of the NWP/NEP (Rothwell, 1996).

Beijing's proactivity in developing governance in Arctic waters can largely be attributed to medium-term Arctic shipping interests (SCIO, 2018; Monyihan, 2018) as short-term shipping viability remains limited (Moe and Stokke, 2019b). As the largest and increasingly 'polar capable' maritime nation in the world, they have the indirect economic soft power and national interests in developing better Arctic shipping

governance in the medium-term (Menon and DNV GL, 2018; Huebert, 2019b, p.84). International shipping constitutes 46% of GDP and China's short-medium term economy will continue to be heavily export-orientated (Kuo, 2019; Gosnell, 2018). Diverse and secure shipping is paramount to their national interests, especially given US military dominance or rampant piracy in other SLOCs such as the Suez and Panama Canals, the Strait of Malacca and the Gulf of Aden (ibid; Sun, 2014). The Arctic offers shorter shipping distances, cutting trip times by at least 40% from China to Europe and the US East Coast (Chen, 2012, p.361; Chircop, 2014, pp.270-2; Jakobson, 2010). China will not attempt to directly influence intra-Arctic state disputes, explicitly agreeing to 'not be over-stepping' in Arctic affairs and having little interest in doing so (SCIO, 2018; Kong, 2018). Yet their white paper emphasis on international law and agreements (SCIO, 2018) makes them unlikely bedfellows with the US over freedom of navigation, particularly in their dispute over the NWP with Canada (Lajeunesse and Huebert, 2019). Furthermore, despite Russia encouragement of Sino-Russian collaboration on the NSR/NEP to boost their Arctic trade prospects (MNRR, 2019), China's lack of reference to Russia when using these shipping lanes (Li, et.al., 2014) – increasingly outside of Russia's EEZ – to deliver heavy industrial goods and energy resources in summer should concern their Eastern counterparts (Goble, 2019; Bennett, 2015). Due to increasingly asymmetrical Arctic economic relations (Jaffe et.al., 2015), reliance on Beijing for its crucial Arctic energy extraction interests (Laruelle 2014, p.254) and continued sanctions from the West (CRS, 2020), Russia could be coalesced towards less dominant claims over the NSR if they are to achieve their Arctic trade ambitions (Sun, 2018; Bennett, 2017; Klimenko, 2014). Thus China's increasing role will indirectly pressure – alongside the US and other East Asian Arctic-interested powers (Moe and Stokke, 2019a; Holroyd, 2014) – Arctic shipping

governance in the medium-term towards convergence at an international level, such as the IMO (Huebert, 2018; Lajeunesse and Huebert, 2019). It is only through constructing a mutual international agreement, such as over shipping reporting requirements in both passages accompanying an acceptance of international rights to access (ibid), that the economic potential of Arctic commercial shipping will be unlocked for the best interests of both its littoral and non-Arctic interested parties (Lackenbauer et.al., 2018; Hara, 2014b, p.11; Gosnell, 2018).

Investment and Infrastructure Projects

Yet, parallel to potentially driving the multilateral development of maritime cooperation in the economic governance regime, the PSR is simultaneously developing bilateral relationships between China and some specific Arctic state partners through investment and infrastructure. China's white paper explicitly states this dual-track pursuit of Arctic 'multilateral and bilateral channels' as in its national interests (SCIO, 2018), with the latter largely pursued by 'economic diplomacy' with strategic partners in the Far North including and beyond the aforementioned Sino-Russian relationship (Lanteigne, 2014, p.13). From 2012 to 2017, China invested \$89.2 billion in Arctic projects, a substantial amount considering the Arctic economy in total is worth around \$450 billion, much of this concentrated to certain investment partners and associated infrastructure projects (Rosen and Thuringer, 2017). Finland have agreed to their part in the 'Finnish Polar Silk Road': co-operating on expertise in shipping, geothermal energy and the construction of icebreaker *Xuelong II*; reciprocal Presidential visits; considerable plans for co-investment in infrastructure such as the Arctic Railway, the Helsinki–Tallinn tunnel (Chen, 2020; Koivurova et.al., 2019) and 'Arctic Connect' submarine communication cables; this only worsens fears over the China's 'military-civilian fusion' as it risks giving them intelligence gathering capabilities

across the Arctic (Nilsen, 2019a; Juris, 2020). Greenland has had numerous proposals for infrastructure projects such as airports and old naval bases; extensive development of Chinese investment in resource extraction and mining projects; and received \$4 billion in Chinese investment, some 185% of their GDP (Matzen, 2017; Jiang, 2018). This has led to market-orientated emergence of deepening diplomatic ties (Shi and Lanteigne, 2018), prompting interjection against Beijing's commercial advances on defence and foreign policy grounds from the Kingdom of Denmark (DDIS, 2017) and the US attempting to 'buy' Greenland from Denmark for its strategic value, as it hosts the US' and NATO's last Arctic base presence at Thule (Kopra, 2019). Perhaps most crucial is their increasingly close geopolitical and economic relationship with Iceland, their 'northern entry' to Europe and the Atlantic (Gudjonsson and Nielsson, 2015). Iceland was the first Arctic state to enter into a free trade agreement with China in 2013; has held discussions over a Chinese-funded Asia-Europe logistics hub and major transshipment port (Guschin, 2015); received a \$500 million currency swap in 2010 (Ward and Hook, 2011) and has been a proactive actor in Iceland inclusive 'Arctic Circle Assembly' initiative (Nilsen, 2019b).

Akin to Western fears around potential 'debt-trap' or 'dependence' diplomacy in China's policies elsewhere (White House, 2018; Pence, 2018; Carmody, 2019), the US is incredibly wary of the increasing 'political pressure' China can place on strategic smaller states (Kopra, 2019). '[P]olitical sovereignty' risks being jeopardised due to economic leverage over Arctic investment recipients making decisions based on Beijing's national interests (Rosen and Slayton, 2017, p.53). The 'divide and rule' power of China's 'bilateral diplomacy' (Peng and Wegge, 2015) will prevent development of a cooperative Arctic economic governance regime. It will undermine US trust in multilateralism because the smaller Arctic powers will be increasingly

caught between divergent security-economy allegiances to Washington-Beijing respectively. Nascent regime developments such as the Arctic Economic Council (2014) risk being interpreted as a vehicle for ‘the PRC’s foreign ambitions’ through their considerable investment role (Gushin, 2015). It is also unlikely Beijing would subscribe to full transparency over its Arctic investment intentions as this would limit the pursuit of its national interests, preventing crucial medium-term regime innovation towards an ‘Arctic Development Code’ or ‘Arctic Development Bank’ (Rosen and Thuringer, 2017, pp.69-72). With the US having ‘few, if any, core interests in the high north’, the obstruction of Chinese influence represents a more important interest than the development of a cooperative Arctic economic governance regime (Rahbek-Clemmensen, 2017, pp.6-8; Koivurova, 2020; Orttung and Weingartner, 2019).

4.2 Arctic Resources

Oil and Gas Exploration

The Arctic contains significant amounts of the global undiscovered crude oil (13%) and natural gas (30%) reserves (see Figure 2; USGS, 2008). Most reserves reside offshore but within states EEZs (ibid), whilst most continental shelf limits have been addressed (Jares, 2009) and varying – largely difficult – commercial feasibility of extraction will remain due to the harsh conditions of the Arctic (Gulas, 2016). This leaves little substance behind the apparent ‘scramble for the Arctic’ posing a major threat to the development of its governance regimes, even for conflict school scholars (Huebert, 2019b, p.81).

The economic growth of China – and the Chinese Communist Party’s political stability and longevity – is ‘deeply dependent on energy imports and [is] expected to become more dependent in the future’ (Li and Bertelsen, 2013), already being the

largest global energy consumer (Kong, 2018, p.10) and one seeking to move its energy transportation away from vulnerable SLOCs (Tata, 2017). The political and economic costs of climate change shifts China's 'economic priority from a war against poverty to a war against pollution' (Zhong, 2016; Crane and Mao, 2015), turning Beijing towards cleaner natural gas. The restructuring of its Arctic activity under the Ministry of National Resources (MNR) reiterates how oil and gas underpins its Arctic endeavours (Eiterjord, 2018b). China's hedging strategy avoids over-reliance on one energy partner (Jaffe et.al., 2015), so whilst the Sino-Russian partnership may have major projects i.e. Yamal-LNG and Arctic-LNG 2 (Kong, 2018, p.1), China pursues other Arctic energy relationships such as with Canada (Daly, 2014), Iceland (Hallsson, 2019) and, prior to the US-initiated 'trade war' that damaged LNG relations (Johnson, 2018), the US (Jaffe et.al., 2015). China's increasing role should promote regime developments around the safety and consistency of offshore energy trading between Arctic-exporters and non-Arctic importers due to mutual national interests in future Arctic extraction, which may become 'politically unacceptable' and commercially avoided if emergencies or spills damage marine resources (Berkman and Vylegzhanin, 2013, p.25). This could culminate in furthering 'hard law' towards Arctic harmonisation on offshore oil and gas regulatory efforts such as *strategic environmental assessments*, *same-season relief wells* and *emergency preparedness* (Pelaudeix and Basse, 2017, pp.55-6; Ebinger et.al., 2014, p.36-40). However, these regime developments will depend on the Sino-American re-prioritisation of their considerable potential LNG relationship (Ma, 2019) over extra-regional trade war principles that are bringing 'resource diplomacy' into the Arctic (Herberg, 2017) and jeopardising potential for developments in the economic governance regime.

Mining and Mineral Resources

The Arctic is home to significant reserves of mineral resources, including 'strategic mineral deposits' that are rare or crucial to the manufacture of goods in the global economy (Krivovichev, 2019, pp.192-6; Bortnikov et.al., 2015). The Arctic mines high concentrations of some of these mineral resources, and they constitute a considerable feature of the Arctic regional economy (Tolvanen et.al., 2019). Large reserves remain untapped and more will become available as the ice retreats, though with considerable extraction costs (MiningExaminer, 2014). China's export-orientated economy continuing its trajectory towards being the largest mineral consumer within five to ten years, combined with considerable domestic environmental concerns, will lead to a deepening reliance on international imports for certain Arctic-abundant minerals such as nickel, zinc, iron ore and copper (Farooki, 2018, pp.3-4; Lindholt, 2006, pp.30-34). The uneven distribution of these resources (see Figure 2) has prompted a heavily bilateral pursuit of their 'right' to lawful mining (SCIO, 2018), using government owned, affiliated semi-private, or directed private companies to mine in Greenland (Andersson et.al., 2018), Canada (Friedman, 2018) and in future, Russia (Fedorinova, 2019). Beijing's competition over 11 key minerals with the US (Gulley et.al., 2017) will deepen competitive Arctic bilateralism, to the detriment of economic regime development and wider governance cooperation (Ohnishi, 2014, pp.96-7). The commercial benefits to lower environmental mining standards (Farooki, 2018) mean China's increasing role is unlikely to promote harmonisation or enforcement of higher Arctic regulatory mining standards, resulting in significant negative implications for its indigenous communities, sustainability and environmental governance regime (Tiainen et.al., 2015).

Summary

The impact of China and its PSR on economic regime development parallels its white paper commitment to both multilateralism and bilateralism (SCIO, 2018). China's impact towards positive economic regime development is delimited to areas where multilateral cooperation is necessary for their medium-term economic interests, such as in shipping and to some extent oil and gas. Beijing's pursuit of its competitive Arctic economic interests is leading to increasing examples of asymmetric partnerships between China and Arctic powers, even regional great powers such as Russia. The perceived threat of their regional economic soft power entrenches US distrust of China's role and limits development of an effective multilateral governance regime capable of managing the region's key economic issue-areas.

Conclusion

The increasing role of China in Arctic affairs will have considerable impacts on all the *Environmental*, *Security* and *Economic* governance regimes. The complexity of the region's future, neither inherently an exceptional zone of peace nor region destined for military security dilemmas or conflict, becomes self-evident.

China's short-term impact will initially boost the environmental governance regime through additional resources and investment, yet its economic national self-interests and increasing US distrust will prevent further development in the medium-term. Traditional security governance is unlikely to deteriorate into direct conflict, though Beijing's minor role through its Sino-Russian JMEs, nuclear capabilities and dual military-civilian potential all will deepen pre-existing East-West divides away from security regime development. Most crucially, China's role in the medium-term will undermine the current multilateral environmental regime largely towards a more

competitive, bilateral 'business-orientated' Arctic (Ohnishi, 2014, p.97), with only selective development of aspects of an economic governance regime. Combined, it becomes clear that China's impact will not lead to the integration of the Arctic regimes towards a cohesive Arctic governance capable of solving the region's mounting shared problems. These regimes will largely remain separate and to some extent limit one another, leading to 'political inertia' (Heininen et.al., 2019, p.6) as the great polar powers of the USA and Russia are constantly caught between competition and interdependence with China; aligned to the former and the latter end of that spectrum respectively.

In many ways, Arctic governance is a regional embodiment of global governance trends (Stephen, 2017, pp.491-7). The rise of China's role will maintain the status quo in its short-term legitimacy and effectiveness, at the cost of gradual adaptation towards Beijing's interests. China's presence risks increasing multilateral deadlock or disinterest and in turn driving the fragmentation, informalisation and bi-lateralisation away from common objectives towards great power interests, at the expense of smaller Arctic states, non-state actors and wider needs of the increasingly fragile region. For national policymakers, this means recognising the need to maintain some economic independence and manage China's proportional regional influence, whilst simultaneously including them in multilateral governance-building to ensure they remain a responsible Arctic power. Ultimately, the US perceives China's increasing regional role as a geopolitical threat as opposed to the multi-dynamic and manageable opportunity it could be. This remains the biggest obstacle to the development of the effective Arctic, and global, governance required to solve the collective issues faced by states that none could possibly address alone.

Whilst this analysis has given an overview of China's impact on the development of these regimes, further research is required on the potential impact of other Arctic governance actors. Other new observer states, private business interests and other Arctic states could all significantly and uniquely impact the future development of these regimes; research into this would contribute to a better understanding of the future of Far Northern governance trends beyond the analysis of great power dynamics explored here.

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Appendix

Table 1: Detailed explanation of the ‘objectives, attributes, characteristics, outputs and outcomes of environmental governance’ (Bennett and Satterfield, 2018, pp.3-6).

Objectives	Attributes (Qualities or Capacities)	General Characteristics or Inputs (Capacity)	Idealized Outputs (Functioning)	Idealized Outcomes (Performance)
Effective Supports maintenance of system integrity and functioning.	Direction	Scope, goals and aims are comprehensive, clearly articulated and communicated to stakeholders. Clear boundaries on action and scope exist.	Defines what effective action encompasses and sets milestones for achieving success.	<ul style="list-style-type: none"> • Improvement in ecosystem functioning. • Greater biodiversity or species. • Increases in productivity of system or provisioning of ecosystem services. • Better environmental health.
	Coordination	The roles, functions, and mandates of different governments, agencies and organizations are coordinated. A coordinating body or unit is present.	Produces system of rules for use, mechanisms for exclusion, management actions and spatial coverage that are complementary and adequate to achieve objectives. Provides a forum for discussion, debate, negotiating and resolving trade-offs.	
	Capacity	Capacity, skills and resources are sufficient and are being actively developed. Capable and visionary leadership is present. Mechanisms are present to resolve conflicts between groups.	Enables successful decision-making and the initiation, organization, implementation and evaluation of actions.	
	Informed	Planning and management decisions and actions are informed by best available information and integration of a diversity of knowledge types and systems.	Increases the likelihood that management actions will lead to effective outcomes.	
	Accountable	Procedures are present to hold governors accountable for performance of system. Mechanisms are in place to ensure that means and rationales for making decisions are transparent.	Ensures that governors act on mandated decisions and that effective actions are being taken.	
	Efficient	Efficacy guides decisions regarding management actions and deployment of resources. Time requirements of actors are reasonable. Economic costs and actions taken are commensurate with productivity of system.	Maximizes the productivity of management actions while minimizing the wasteful use of available resources.	

Objectives	Attributes (qualities or capacities)	General characteristics or inputs (capacity)	Idealized outputs (functioning)	Idealized Outcomes (performance)
Equitable Employs inclusive processes and produces fair outcomes.	Recognition	Policies and processes ensure acknowledgement of, respect for and incorporation of diverse perspectives, values, cultures and rights. Views of marginalized and vulnerable groups are considered.	Facilitates socially acceptable governance and perceptions of legitimacy. Aids in the design of management actions that are appropriate to the social context.	<ul style="list-style-type: none"> • Inclusion in decision-making processes. • Improved socio-economic outcomes. • Increases in quality of life or wellbeing. • More fair distribution of wealth. • Better access to justice
	Participation	Spaces and processes to enable participation and collective choice are present. Structures that ensure the representation and engagement of different stakeholder groups are in place.	Contributes to just power relations and decision-making processes. Leads to plans and actions that represent the interests of different groups. Allows parties to democratically debate decisions and maintain dignity.	
	Fair	Mechanisms are in place to ensure socio-economic costs and benefits are just and fairly distributed. Rights and responsibilities are shared and assigned fairly. Unequal circumstances are considered.	Ensures a fair balance of costs and benefits accrue to different groups.	
	Just	Laws and policies are present to protect local rights and mechanisms ensure that groups have access to justice.	Ensures rights (e.g., title, historical tenure, access, use, management) are not undermined and that reparations or compensation are made for past damages.	
Responsive Enables adaptation to diverse contexts and changing conditions.	Learning	Monitoring, evaluation, reflections and communication of performance is institutionalized. Processes and platforms are in place to co-produce knowledge and enhance social and institutional memory.	Ensures that information is produced, documented, shared and informs decision-making.	<ul style="list-style-type: none"> • Enables the resilience of resource. • Enables the resilience of local communities. • More adaptable institutions to changing conditions. • More flexible institutions that can be altered to work in different contexts.
	Anticipatory	Long-term planning and foresight thinking are institutionalized. Known and unknown risks and opportunities are considered, analyzed and planned for.	Produces plans and steps to prepare and prevent consequences of unexpected risks. Enhances knowledge, capacity and flexibility for disturbance.	

	Adaptive	Spaces for reflection and deliberation are institutionalized. Processes exist to revisit and evolve policies, institutions and adapt actions.	Ensures that management plans and actions are being actively adapted to reflect changing social-ecological contexts and new knowledge.	
	Innovative	Innovation and experimentation is encouraged and success and failures are monitored. A higher risk tolerance is embodied.	Allows change to be seen as an opportunity. Enables new and more effective ideas and actions to emerge.	
	Flexible	Policies exist that recognize the need to downscale environmental management and conservation models to fit local realities. Efforts are taken to understand and document about the diverse contexts where policies are applied and to deliberate on necessary adjustments.	Enables governance systems and management models to be adjusted to better fit with local social, cultural, political, economic and environmental contexts.	
Robust Ensures functioning institutions persist, maintain performance and cope with perturbations and crises.	Legitimate	A collective vision shapes policies and guides actions at all scales. Institutional legitimacy is conferred (e.g., in policy) and perceived (e.g., by constituents). Governors act with integrity and consistency. Institutions are transparent.	Ascertains that there is support from above and that there is a supportive constituency.	<ul style="list-style-type: none"> • Institutions are strengthened and well supported. • Institutional performance and functioning is more or less consistent. • Institutions persist over time.
	Connected	Networks of organizations and actors are strongly linked vertically and horizontally. Bridging organizations are present. Processes are in place to support network development, to develop social relations and to support mutual learning.	Helps to bridge between and across scales. Creates supportive community, produces social capital, fosters respect and trust and builds social memory. Encourages communication, information exchange, enables diffusion of innovations, and facilitates	
	Nested	Tasks are assigned to appropriate levels. Decision-making authority and responsibility are conferred to the lowest level possible. Self-organization is encouraged and supported. Authority and responsibility is supported by adequate state or other outside support (legal recognition, political will, time commitment) and oversight	Empowers appropriate entity to take necessary action. Allows also for shaping and adapting institutions and decision-making processes to different local sub-contexts (social circumstances, governance, ecologies) within larger system.	
	Polycentric	Decision-making and action taking centers in multiple places, across jurisdictions and at multiple scales interact and cohere towards a common goal. Institutions are present that are diverse and redundant - that serve similar purposes and have overlapping jurisdictions	Helps to buffer against change in one location. Ensures that the governance system does not collapse when faced with adversity or crises.	

Table 2: Detailed explanation on the ‘Dimensions, Indicators, Data Sources’ that combine to constitute a framework through which we can assess security governance (Schroeder, 2010, p.16).

Dimension	Indicators	Data Sources
War and violent conflict	Involvement in internal and external violent conflicts	<ul style="list-style-type: none"> • Uppsala Conflict Data Program/PRIO Armed Conflict Dataset and Battle Death Data • CIDCM International Crisis Behavior • HIIK Conflict Barometer • Global Peace Index
	Foreign policy and military crises	
	Battle deaths	
Militarisation	Military expenditure	<ul style="list-style-type: none"> • IISS Military Balance • SIPRI military expenditures • Small Arms Survey • Global Peace Index
	Proliferation of arms	
	Weapons systems in use	
Culture of peace	Level of structural and cultural violence	<ul style="list-style-type: none"> • Global Peace Index

International Peace and Security: Dimensions, Indicators, Data Sources

Figure 1: Potential Arctic shipping routes and their overlap with fossil fuel resource estimates (Nakano and Li, 2018).



Source: Center for Strategic and International Studies / Energy and National Security Program (January 2018); created with Arctic Portal Mapping Tools. Purple areas represent U.S. Geological Survey oil and gas reserve estimates; Arctic Council member states are highlighted in green, and observer states are highlighted in blue.

Figure 2: Non-living Arctic resource potential: oil and gas reserves and mining sites (Nordregio. 2019).

