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Climate Change in the Arctic Geopolitics

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Abstract

This Paper aims to find out the effect of climate change on geopolitical settings of the Arctic Circle. The paper focused on the fact that Arctic sea-ice and severe cold, the common obstacles of regional maritime traffic and ground access, pointed out by several classical theories, are being reduced by climate change. This led to the research on the classical geopolitics' change in status in terms of academic and regional strategic dialogues; and changes in geopolitical status of regional states derived from climate change. Qualitative research methodology was chosen in writing the thesis, collecting data on climate change; collecting and reviewing cases and previous publications; and doing comparative research on regional states

The paper sees climate change and melting arctic would negatively impact the status of classical geopolitical view on northern Eurasia, although it will not significantly harm the value of classical geopolitical theory as a tool for analyzing issues. It's also found that melting Arctic provides sufficient strategic interest and incentive for Russia to escape the traditional geopolitical identity as a land-locked 'Heartland', which was imposed by Arctic glaciers and containment policies from the outside. The research also identified that Russia, with clear understandings of changing circumstances, is making responses through making geostrategic plans and policy implementations. Additionally, through comparative analysis on strategic capacity and geostrategic planning, the research identified Russia's relative superiority in Arctic region in strategic perspective.

Meanwhile, concerning the future security environment of the Arctic, the paper predicts possible regional conflict and security concerns due to negative factors like: duality in security perspective of opening Arctic; issues in maritime law regarding Arctic territorial claims and freedom of navigation; and increased

security dilemma from soured relations between Russia and the West since the Ukrainian crisis in 2014, even though it identifies the existing regional cooperation regimes like the Arctic Council and cases of peaceful conflict resolution. The paper also notes that Russia needs to solve regional human security issues from climate change; problems in its own capacity; and challenges from the outside to maintain its current regional superiority.

Keyword: Arctic, Climate Change, Geopolitics, Northern Sea Route, Russia, Sea power
Student Number: 2019-28821

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Chapter 1. Introduction

This thesis is to figure out how climate change affects Arctic geopolitics by altering region's natural, economic, and traditional security environment. It will be critically based on 3 major classical geopolitics theories, -Mackinder's 'Heartland' theory, Mahan's 'Sea Power' theory and Spykman's 'Rimland' theory- and other related geopolitical and strategic views. It focuses on what effect would current climate change would have on Arctic geopolitics by weakening and altering traditional geopolitical views on Arctic environment, that is based on common crucial concepts of 'impassible ice sea' and Russia as a 'Land Power'. This research will argue the interpretations of Arctic environment and role of Russia should change accordingly due to Russia's heightened interests and perceived advantages in the region. To understand stakes in Arctic geopolitics in such changes, various political and economic factors in the region will be investigated, figuring out what changes in policies, decisions and national perceptions are being made. In addition, theoretical concept of 'Security Dilemma', combined with empirical, legal, and theoretical factors of Arctic security environment will also be used to better understand how security risks and challenges can be materialized in the region. Possibility of regional cooperation will also be visited through case studies.

This thesis is mainly based on literature review and case studies. The second chapter of the thesis will include reviews of 3 major theories of classical geopolitics, presenting their main arguments, real-world implications, and their common perceptions of the world, especially the Arctic. The chapter will further explain their impacts on historical and contemporary strategic policymaking concerning the Eurasian north and related states as well.

Chapter 3 will move on to explain the effect of climate change in the Arctic

region, to provide knowledge on what is changing in the region that would impact the fundamentals of the regional geopolitical dynamics. Based on such knowledge, the chapter will show how climate change will invalidate some of the basic concepts provided by 3 theories, thus weakening their traditional understandings of the Arctic geopolitics. It will also present security and economic importance of the changing Arctic environment; and regional actors' growing interests.

Chater 4 will then focus on Russia's approach towards the changing arctic geopolitical environment and present argument on Russian possibility of becoming a 'Sea Power' seeking dominance in changing Arctic through case analysis. Mahan's theory will be revisited to back the argument and Antrim's paper on the topic will be used to provide the argument. The chapter will also address the changes in regional security environment in Russian perspective, Russian capabilities, challenges, and policies since Antrim(2010) came out.

Based on the knowledge and viewpoints of chapter 3 and 4, chapter 5 will take on security dilemma, regional disputes, cases of diplomatic relations of regional states and issues around interpreting international law to explain the fragile state of Arctic security environment.

1.1. Study Background

The reasons behind this research come from small findings I made. While studying geopolitics, I found out some commons in Mackinder, Mahan and Spykman's theories. With different terms, intentions, and slight geographical difference in mapping, they were all dividing our world into 3 separate categories of geographical zones: mid-north Eurasian inlands; maritime area and somewhere in between, to address their arguments in global geostrategic settings. What is interesting is that they all saw mid-north Eurasian territory, that has been

historically dominated by Russia and its succeeding states, which is famously known as “Heartland” by Mackinder, as a land-locked territory that cannot access the sea not only because it is blocked by “Crescents” or “Rimland” surrounding it, but also due to the ‘completely impassible “Icy Sea” in the north’.(Mackinder, 1904; Mahan, 1905; Spykman, 1944)

Traditional geopolitical understandings from theoretical debates on ‘land-power’ versus ‘sea-power’ dynamism and ‘impassible ice sea’ had significant historical and political implications. Russia, who is traditionally regarded as a ‘‘Heartland’’ state, formulated its historical policies of expansionism due to limited access to open water.(Editors of Encyclopedia Britannica, 2020) On the other hand, based on classical geopolitics theories, Russia’s maritime adversaries made numerous policies to contain and balance Russian expansion towards the sea.(BBC Ideas, 2019a) Such policies and strategic views are still followed by influential figures like Brzezinski, Kissinger and Dugin, influencing national geostrategic decisions.

However, Today’s climate change, which hadn’t been expected in early 20th century, period that saw the birth of 3 theories, is causing key changes in 3 theories’ geographical background. Rising global temperature is rapidly melting the polar ice cap. Although exact estimates do vary, future projections made by several scientific communities shows that temperature rise would make the Arctic sea-ice completely disappear, at least during the summer, from some moment in 2030-2100 period.(Stroeve, 2019; 국토환경정보센터, 2020; IPCC, 2021) With climate change melting Arctic ice sheet, natural obstacles for the free maritime traffic and exploration on the Arctic ocean would be removed, changing ‘impassible Arctic’ to ‘passible Arctic’.

I expect such conceptional change to weaken the very basis of previous views on the Arctic circle drawn by the 3 theories and bring paradigm shift in regional

geopolitical dialogues. The major game changer would be the interpretation of Russia's regional geopolitical status. It would no longer be simple to designate Russia as a land-locked land-power as it used to be if it gains freely accessible ocean on its backyard. This would invalidate traditional interpretations of the Arctic and Eurasian geopolitical settings of 3 theories, who commonly interpreted Russia to be cut off from open water access in contrast to maritime power. Russia, a major power in the region, would gain unrestricted access to sea-based trade and Arctic resource deposits. This would hugely impact geopolitics of the Arctic.

Mackinder's 'Heartland' theory, Mahan's 'Sea Power' theory and Spykman's 'Rimland' theory all have been great influencers in both academic and geostrategic dialogues. They not only helped forming the art of geopolitics and geostrategy in early days, but also influenced later scholars, creating academic tradition of geopolitics. Through their research and policy input, they also influenced many important strategic decisions, leading to the formation of the world we live in. So, a major paradigm shift brought to those theories by climate change through melting Arctic and changing geopolitical status of Russia would inevitably impact regional geostrategy, policy and security assessment.

Theories that served as creating foundations of historical and contemporary geostrategies are being shaken by changing empirical circumstances. So, it's important to find which part of the classical theories are still relevant and which part should be altered for future geostrategy and policy implementations. Many previous research and writings already dealt with the connection between climate change and Arctic geopolitics. However, only few of them were heavily based on specific geopolitical theory in their research as a basis of analysis. Those revisiting classical geopolitical theories in explaining their arguments were even less. Antrim's 2010 paper, The Next Geographical Pivot, was one of the few notable one among them. It's been 11 years since its publication. Many changes have happened

in the region during the period. So, while he's paper provides valuable viewpoint in dealing with the issue of Arctic geopolitics, it can't be considered sufficient to fully explain today's Arctic circle.

This thesis, in line with Antrim's theory, argues that climate change will significantly shift Arctic and Northern Eurasian geopolitics from classical theories' view through crucial geographical changes. The thesis will also argue that while the traditional world view will be damaged, what comes next can be explained through classical theories, not destroying their values completely. This thesis also intends to supplement and expand Antrim's research by covering changes in regional settings after 11 years since its publication and adding explanations of possible factors that Antrim hasn't covered can affect Arctic geopolitics.

1.2. Purpose of Research & Research Methodology

The aim of this research is to figure out the changes in Arctic geopolitical settings caused by climate change's impact on natural, economic, and traditional security environment of the region and how it differs from, and be understood through, traditional geopolitical theories established by Mackinder, Mahan and Spykman's geopolitical theories.

This research is done, using qualitative and comparative methodology involving theoretical analyses, literature reviews and case studies. Theoretical bases of this thesis' analyses are critically based on writings by and related to Mackinder, Mahan and Spykman. The thesis also quotes Antrim(2010) to back its argument. Writings on maritime law, naval strategies and security dilemma are also visited to explain regional security environment, possible policy choices and conflict.

Historical materials were used to briefly explain geopolitics of the Northern

Eurasia from early period of Russian territorial expansion to modern days. This is to show how classical geopolitical theories and their conventional views affected geostrategic choices of Russia and rivaling great powers under the perceived dynamism around geographical pivot of Eurasia and contest between 'the Land' and 'the Sea'.

Scientific articles, including reports and data sheets made by the Intergovernmental Panel on Climate Change (IPCC), the World Meteorological Organization (WMO) and various institutes were investigated and quoted to see the status, progress, and estimations of the effect of climate change on the Arctic environment that would change region's natural and geographical settings. These include temperature rise, retreating Arctic ice, melting permafrost, and rising sea level. Even though each report on climate science share consensus on the causes and threats of climate change, there can be difference on certain details between them due to the changing circumstances; research model; and techniques for data collection and analysis.(Oreskes, 2007) For this reason, this paper used the most recent reports available by the IPCC and the WMO on the issue to quote more precise and up-to-date data and avoid complication.

Like scientific documents, this thesis mostly used materials from 2015~2021 period for its case study to make the research up to date. Cases were collected from various sources, including press reports; publications; web archives; videos; political remarks; publications by government and international organizations; and strategic documents. Using collected materials, the research tried to analyze factors and events related to Arctic geopolitics, like, regional military presence; views of political leaderships; strategic policies; economic plans; resources; and environmental impact, under the context of climate change.

Comparative methodology involving comparison between stances and capacities of regional state actors and organizations was used for the analysis.

Following states and organizations were covered: Canada, China, Denmark, Finland, Iceland, Norway, Russia, Sweden, United Kingdom. United States of America, European Union (EU) and the North Atlantic Treaty Organization (NATO).[①] The case study also focused on investigating Russia's recent polar activities, strategies, and development plans for military and economic sectors to see Russia's advantage, challenge and stance on the nature and impact of Arctic climate change.

Additionally, regional security dilemma, legal context, and case studies of Arctic continental shelf claims and 'freedom of navigation', regional international regime such as the Arctic Council and previous cases of international negotiations and cooperation were visited to see possible points of future regional conflict and cooperation. Interactive mapping tools like Google Earth and OpenStreetMap were used during the research to better understand geographical settings of the regional geopolitics.

Chapter 2. Classical Geopolitics and the Arctic

Geopolitics is an academic tradition derived from geography and political science on the matters of "human geography".(Flint, 2012) It tries to understand international relations, regional politics and related issues through geographical settings, involving various geographical, social and human factors like terrain, location, climate, demographics, culture, geographical networks, economy and so on.(김명섭, 2008; Marshall, 2016) It has been used in various ways to explain global issues and historical events.

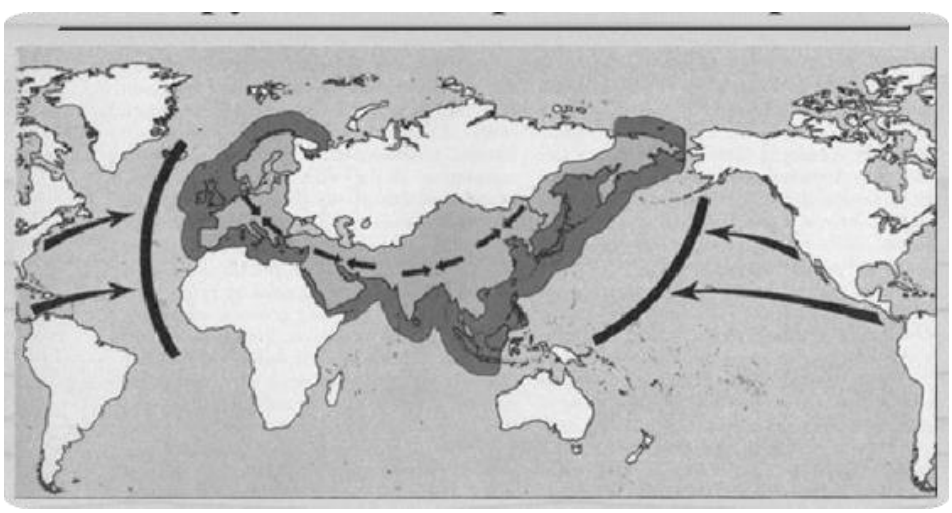
① China and the UK are technically not classified as Arctic state with no territory in the Arctic Circle. This paper, however, included them due to their notable approaches and interests in Arctic region, including naval and/or economic presence in the region.

Earlier classics of geopolitics focused on analyzing international relations through understanding the effects of geographical settings on interactions of state level actors. Classical geopolitics was later criticized by critical geopolitics for focusing too much on state level actors, hard power, and possibilities of conflict. Scholars in other traditions of international relations also criticized classical geopolitics for being too 'geographically deterministic'.(김명섭, 2008; Marshall, 2016) However, it didn't only attract critics. It also attracted many followers, including policymakers and strategic thinkers. They made important decisions on government policies, military strategies, and diplomatic choices. So, it's undeniable that classical geopolitics in, including following 3 famous theories, helped shaping modern international relations.

This chapter presents 3 of the notable classical geopolitics theories that are crucial in understanding historical and present settings of the Arctic and Northern Eurasian geopolitical settings.

2.1. Mahan's Sea Power

<Pic. 1> Mahan's Model (Unknown, 2016)



Alfred Thayer Mahan's "Sea Power" theory was first introduced by his book, The Influence of Sea Power Upon History(1890), where he argued "the greatness of a nation" is heavily connected with the sea. He thought access to the sea grants access to huge economic gain through maritime trade and enables projection of power to overseas. He saw navy as the only tool for maritime dominance, "securing the command of the sea".(Mahan, 1890) Navy is also a key in overseas power projection and a force multiplier for land elements operating in domestic and foreign territory. Most importantly, navy is the ultimate tool in protecting and maintaining communications and trades, which are necessary even in peacetime. He emphasizes the importance of building a competent navy to achieve stable access to the ocean through case studies on how navy shaped the historical events. (Mahan, 1890) For building competent navy, he argues the necessity for building big capital ships that can harbor strong weaponry to high seas for proper 'Sea Power' projection and protection. Instead of focusing on vast landmass, Mahan instead focus on waterways such as chokepoints, straits, bays, and shipping lanes. Controlling these locations grants a 'Sea Power' to control maritime traffic that goes through them. This will allow a 'Sea Power' to have unlimited access to the ocean and potential gains a state can get through it while deterring the rivals from doing so. Since he thought the access to the sea would bring both strategic advantage and immense wealth, the conflict to gain control of important waterways would continue to happen. (Mahan, 1890)

In another book "The problem of Asia: Its effect upon international politics", he also saw conflict can be intensified to much grander scale between inland states and 'Sea Power'. He especially focused on vast inland territory of Eurasia, that is almost the same as Mackinder's 'Heartland', which the paper will later present. In this global geopolitical discourse, he divides world into 2 big spheres: 'North' and

‘South’. The north is a ‘Land Power’ based on Eurasian inland who lacks access to waterway for trade and overseas intervention capability due to surrounding territories and Arctic ice sheet. The south is a ‘Sea Power’ with unlimited access to ocean, dominating the global domain and enjoy the benefit it gives. The north keeps on trying to access the sea, threatening south’s maritime dominance while the south keeps on trying to deter the north’s access, dominating the playground. He thought Eurasian coastal areas that stands between them, which he called the “debated and debatable zone”, are to be zones of global conflict, and thus very important. In Mahan’s theory, gaining control of these areas between land-based north and maritime south is necessary for both parties’ agendas as it would decide the fate of former’s ‘Sea Power’ access and latter’s preventive move.(Mahan, 1905)

2.1. Mackinder’s Heartland

<Pic. 2> Mackinder’s Model(The Albert Team, 2020)

British scholar Sir Halford John Mackinder’s ‘Heartland’ theory was first presented in his journal article, The Geographical Pivot of History(1904). While

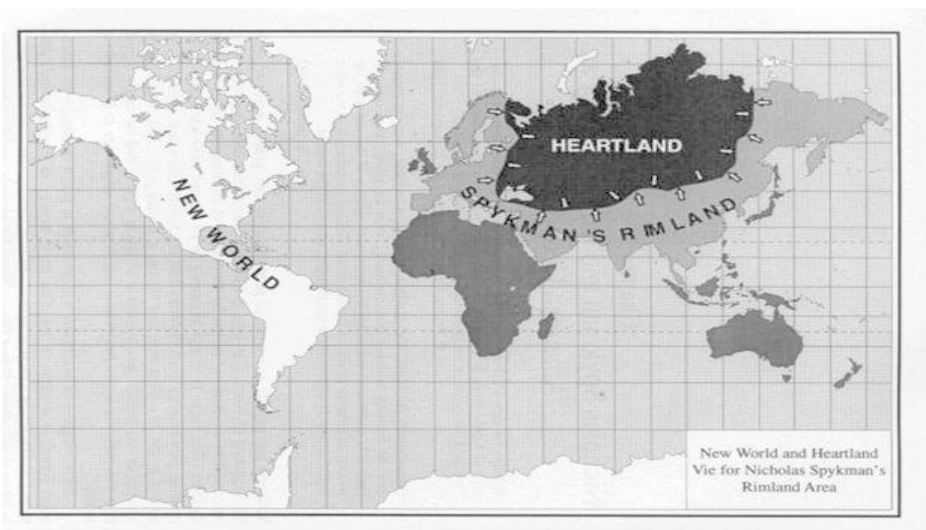
Mahan spoke mainly about the importance of the maritime dominance and occupying critical waterways of strategic importance,(Mahan, 1890) Mackinder focused more on the land-based dynamics, understanding the world we live in as a geographical 'Core-Periphery' structure. He divided the world into several geographical areas. First, he divided the whole globe into 2 areas: The World Island and the Outlying Islands. The World Island is a group of continents, Eurasia, and Africa.(Mackinder, 1904) Mackinder considered 2 continents as center of the world, having largest land mass and population. The Outlying Islands are other continents, which are smaller and less populated than the World Island. In Mackinder's work, the Outlying Island was considered as periphery with less importance. He mainly dealt with the World Island for his geopolitical discourse.(Mackinder, 1904) He also divided the World Island into smaller zones as well. For this smaller division in the World Island, the core for his geographical theory is called the 'geographical pivot', or the 'Heartland'. The 'Heartland' is an inland center of the World Island that comprises part of Western Russia, Central Asia, and most of Siberia with rich natural resources. He then put many layers of lands he called 'Crescents' around it.

Mackinder thought the 'Heartland' would be important in global power game. Mackinder thought the 'Heartland' would be important due to its vast resource deposits; and geological location of being at the center of the World Island, allowing 'Heartland' power to expand to any direction, effectively controlling the World Island.(Mackinder, 1904) Mackinder thought disadvantages coming from being at the in-land center, causing inability to access maritime trade network can be overcome through land-based infrastructure such as rail roads and protective value of Arctic sea ice against hostile maritime access was more valuable.(Mackinder, 1942) Due to this fact Mackinder thought Crescents, the land corridors needed for access to the 'Heartland' would become battlegrounds for powers who aim world domination. Mackinder's idea came out in the era of

imperialism. Only viable competitors for the world domination were Western imperialists and most of them were concentrated in Europe. So, naturally Mackinder saw Eastern Europe, the nearest point for Europeans to reach the ‘Heartland’, the most important Crescent area for geopolitical discourse. Later, he even said, "Who rules East Europe commands the Heartland; who rules the Heartland commands the World Island; who rules the World Island commands the world."(Mackinder, 1942)

2.3. Spykman’s Rimland

<Pic. 3> Spykman’s Model (Shian, 2016)



Although being historically and academically important, Nicholas John Spykman’s ‘Rimland’ theory, to many, could be perceived as a mere revision and combination of the ‘Heartland’ theory and ‘Sea Power’ theory. This is only partially true since his theory is based on Mackinder and Mahan’s idea with some criticism and focuses on different ‘playground’. As presented on <Picture 3>, Spykman

consolidated Mackinder's 'Crescents' into a formation that looks like Mahan's "debated and debatable zone". In his writing The Geography of the Peace(1944), He called his version of this amphibian buffer zone, the 'Rimland'. In describing his model, Spykman actively used Mahan and Mackinder's concepts. For example, island states like Japan and the UK and the continent of America were categorized by him as offshore island/continent, where vast 'Sea Power' lies. Spykman also used the word 'Heartland' to explain his model. However, He saw the 'Rimland' to be far more strategically important than 'Land Power' and 'Sea Power'. He considered successfully containing or accessing 'Land Power' and 'Sea Power' depends on controlling the 'Rimland'. He also saw huge advantage in region's demography, resources, and industry.(Spykman, 1944) On the other hand, to Spykman, 'Heartland', being isolated by Arctic Ocean and 'Rimland', was less important than 'Sea Power' and 'Rimland'. He also criticized Oceanian 'Sea Power' for its insignificance due to its insufficient arable land and food supply. But he still saw the necessity to block 'Heartland' from potential expansion towards the 'Rimland', proposing containment policy. He said, "Who controls the Rimland rules Eurasia, who rules Eurasia controls the destinies of the world.", in parody to Mackinder's thoughts. (Gray, 2015)

2.4. Historical Influence: From the Great Game to the Containment

<Pic. 4> Expansion of Russian Empire in 1533-1894 Period (Wikipedia, 2006)

When first formed, Russia, or Rus at that time, was a remote inland state of Europe suffering from a harsh climate. Russians then kept on its expansion in search for more habitable land and natural resources, and warm-water ports for trade and maritime access. From 1700 to 1721, the Tsardom of Russia waged and won the Great Northern War against Swedish Empire to secure access to the Baltic Sea. In 1800s, through multiple conflicts and negotiations with Qing dynasty China, Russia finally gained warm ports like Vladivostok in today's Primorsky Krai, gaining access to the Pacific. (Editors of Encyclopedia Britannica, 2020)

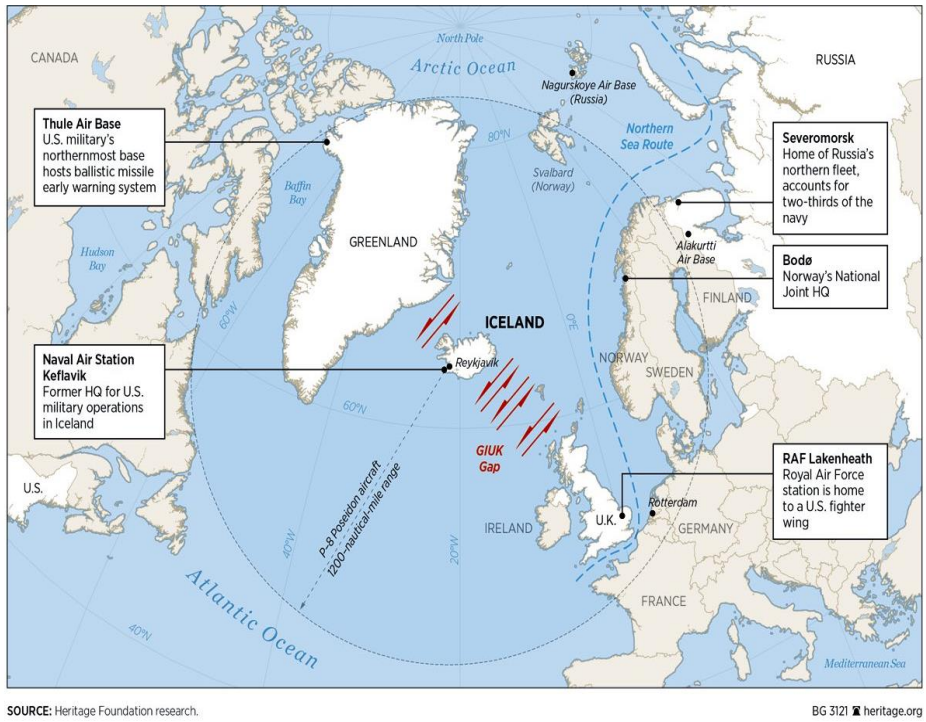
Great Britain, a rival imperialist state and a dominant 'Sea Power' of that time, tried to deny Russian access to warm-water ports and high-seas, which it saw as a threat to its national interest. It fought the Crimean War against Russia to prevent

its access to Mediterranean Sea. In Southwest Asia, it invaded Iran and Afghanistan to deter Russian southward moves for the Indian Ocean. In Far East, it caused the Port Hamilton Incident, illegally occupying Korean territory to prevent Russian expansion and eventually supported Japan to wage Russo-Japanese War. When Russian Pacific Fleet was devastated by Japanese surprise attack, Russian Empire was unable to quickly deploy reinforcement from its European fleets. Russian fleet couldn't use shorter route through the Arctic Ocean since it was inaccessible due to ice. Britain's intentional blockade of the Suez Canal also forced Russian fleet to sail around entire coastline of African continent, significantly increasing time and resources used to travel. The outcome was a defeat to Russia. (Editors of Encyclopedia Britannica, 2020)

While Sea Power theory gave reasons for deterring Russian access to the high seas, the 'Heartland' theory was used as a basis for ideas of controlling Eastern Europe and Eurasian North. Many German geopolitics scholars, including Karl Ernst Haushofer, were very keen to the theory. It was then merged by them with the German geopolitical concept of national and cultural sphere called 'Lebensraum'. To them, moving their 'living sphere' eastward and aligning with the 'Heartland' power would allow their country to escape misery under Versailles treaty that was forced by the 'Sea Powers'. Unfortunately, Rudolf Hess, Haushofer's student, became Adolf Hitler's aide. Nazis modified the idea of 'Lebensraum' to a logic of invasion to conquer the 'Heartland', that was territory of the Union of Soviet Socialist Republics, for themselves, not having an alignment with it. This was what Haushofer despised and caused grave losses to the world, through the historical event of the 2nd World War. Allies in turn used the 'Heartland' theory for propaganda against Nazis, blaming them for aiming world domination. This would however coin the notion of geopolitics as straight up fascist agenda for some societies for a period, recessing the academic progress. (BBC Ideas, 2019a; 2019b)

After the World War 2, the Cold War began, and Sea Power, Heartland and newly formed Rimland theories were again earned political spotlight. Eastern Europe, that Mackinder so cherished was under the hands of the Union of Soviet Socialist Republics. It was a huge and powerful state believing in exotic ideals located in the ‘Heartland’. It seemed like a prophecy of Mackinder was starting to be fulfilled. As a superpower, Soviet influence on the world was immense and it did not waste it by supporting and spreading revolution around the world. The United States of America, another superpower, and a rival to the USSR, decided not to let this continue. Thus, under George Kennan, who was deeply influenced by Mackinder and Spykman’s idea, created the Containment policy to block the soviet block from expanding by containing their influence from reaching the ‘Rimland’. (BBC Ideas, 2019b) Soviet’s maritime activities were also the blocked. Its unlimited access to the Atlantic Ocean was blocked by mainly 3 chokepoints: Jutland, Gibraltar and GIUK Gap. The US used post-war Japan to block Soviet pacific fleet.

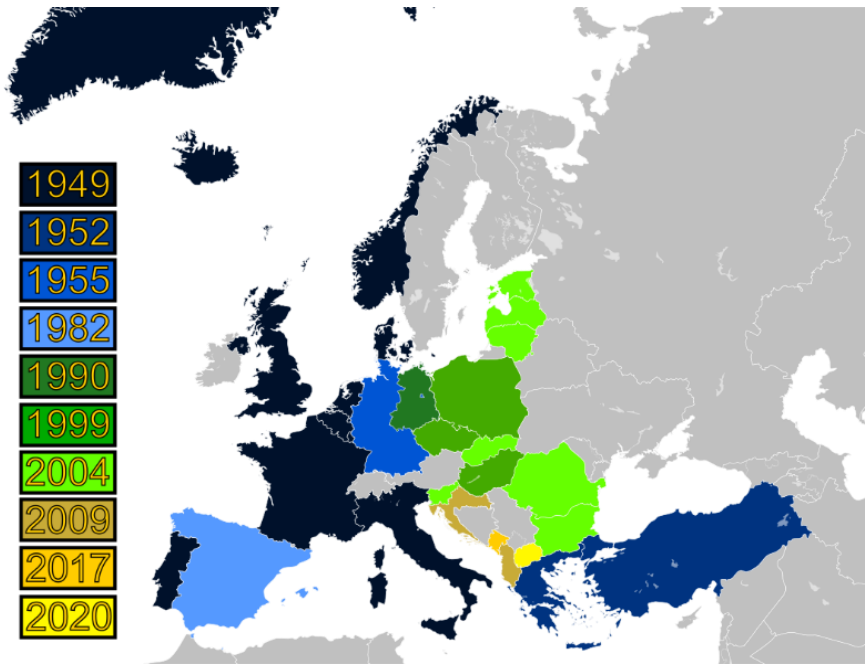
<Pic. 5> Map of the GIUK Gap (Alchetron, 2018)



With the dissolution of the USSR in 1991, the threat of the ‘Heartland’ power seemed to have ended and the Containment was no longer needed. But fierce believers of the Containment such as Kissinger and Brzezinski, both served as prominent public official in Washington DC argued back with their own writings saying the threat of the hostility from the ‘Heartland’ power, which is Russia, is still valid.(Brzezinski, 1998; Kissinger, 2012) This worked. To the frustrations for new-born Russia, the Containment continued. To make matters even worse for it, the NATO, originally created to fight against the Soviet bloc, also survived and started expanding eastwards, embracing former satellites of the USSR as members.(Al Jazeera, 2019) This, combined with the US’ missile defense program was considered a direct violation of a ‘verbal agreement’ between the US, Germany and the USSR and also a grave threat and disregard towards Russia’s national

interest to Russian people and their leadership.(Seipel, 2018)

<Pic. 6> NATO's Expansion since its creation in 1949(Wikipedia, 2008)



In this situation, a rightwing Russian scholar Aleksandr Gelyevich Dugin appeared. While his idea of Russian fascism or as some call, 'National Bolshevism' was not able to gain popular support, his geopolitical view, 'Eurasianism', played otherwise. In his book Dugin argued Russia, as a 'Land Power', is in a constant conflict against the 'Maritime West', urging Russia to consolidate all the traditional sphere of influence in the Eurasian heartland, in other words, 'Greater Russia', to fend off such threat.(Dunlop, 2004) The idea was quickly absorbed by Russian leadership, helping in formation of new concepts of Russian strategic interests and the perception of threat from the West.(BBC Ideas, 2019b)

In this newly established point of view, the west seemed like a bully constantly harassing Russia, encircling around it, undermining its strategic interests,

and empowering its neighbors to do hostile things such as Georgian attack on Russian peacekeepers that caused the 2008 South Ossetian War or Ukrainian Revolution of 2014. In Russia's perspective, they were forced to make drastic, but necessary choices for security, that are, in turn to the West, threatening and assertive moves.(Al Jazeera, 2019)

<Pic. 7> Sevastopol and Tartus (Bouvin, 2019)

Some of the moves relate to securing important waterways as Mahan emphasized. Sevastopol is one of the greatest military ports of Russian navy and was in a brink of closure due to the 2014 events. Russia in turn, mobilized troops and converged pro-Russian residents, leading to the referendum that allowed Russia's de facto ownership of the peninsula that is denied by the West. Possibility

of losing Tartus, the only overseas naval installation that is currently in operation,② that allows Russia's direct naval access and power projection in Mediterranean Sea is one of the reasons why Russia intervened into the Syrian War.(Harmer, 2012) Russia is also trying to rehabilitate and show off its capability of long range naval operation and coastal protection, often using long-range bombers and naval vessels for maneuvers on North Atlantic and North Pacific to test potency of both its navy and the NATO's defensive capability. This include the NATO presence around the GIUK line that is blocking Russian navy's free access to the Atlantic Ocean.(Nilsen, 2020)

In short, 3 classical theories have been influential in explaining and/or creating the international relations of 18~21st century. It's clear that Russia, both historically and contemporarily, seeks stable and unhindered access to the ocean for reasons Mahan and Spykman emphasized. On the other hand, it's also clear that, likewise to or even following the view of classical geopolitics, major 'Sea Powers' of history, which happens to be adversaries of Russia's "Land Power" tried to block, encircle and contain Russian effort to expand and reach the ocean.

2.5. Traditional Perception of the Arctic

Although each had different ideas on the importance and geographical power dynamics of each zone of Eurasian continent and its surrounding territories, all 3 theories share some common concepts on the geopolitical interpretation of northern part of Eurasia and, especially, the Arctic: 1) Arctic Ocean is impassible due to sea ice; 2) Eurasian heartland, blocked by Arctic ice, is a land-locked region even

② There has been talks recently of opening Russian naval bases on East African costal states including Sudan. But recent political instability in the region, including coup d'état and civil war rendered whole plans and agreements into a state of flux.
Source: Ramani(2021)

though it's connected with Arctic Ocean; 3) the Arctic ocean protects Eurasian heartland from maritime invasion, increasing its defensive capability; 4) the Arctic blocks Eurasian heartland from global sea-based trade and navigation.(Mahan, 1905; Mackinder, 1942; Spykman, 1969) Although each theories have differences in understanding geographical events, stark geographical division of the Land Power and Sea Power, and power dynamics between them are the common core of traditional geopolitics' world view. These wouldn't have been formulated without the Arctic and its harsh and frozen environment.

The commonly presumed importance of the Arctic inaccessibility, however, was criticized to be "exaggerated" by later scholars like Renner and Seversky. They argued that, with the advance of technological achievement in areas of aerospace engineering; wide use of air travel; and air-based military assets since the 2nd World War, the Arctic accessibility and vulnerability significantly increased, nullifying the traditional understandings of "heartland" and 'inaccessible Arctic'. (박창희, 2013) Although there's no denial on increased accessibility to the Arctic through air assets, direct access to the Arctic territory, ocean and seabed, needed for resource extraction, trade and military occupation, was still limited while Airpower alone lacks operational sustainability in maintaining theatrical dominance.(박창희, 2013) So even then, the fundamentals of the Arctic in its inaccessibility was largely unhindered.

Chapter 3. Climate Change and Arctic Geopolitics

3.1. Climate Change

Climate change, also known as global warming, is a man-made phenomenon mainly concerning the greenhouse gas emission by extensive use of fossil fuel

since the industrial revolution in 18th century.(IPCC, 2021) It's rapidly and drastically shifting the Earth's climate by raising global temperature and interrupting natural chain of heat exchange, causing extreme weathers and natural disasters. According to the IPCC(2021), global average temperature is already 1.09˚C higher than pre-1900 level. The speed of temperature rise has been increased since 1970 and it's expected to easily exceed 1.5˚C limit set by Paris Agreement within this century if there's no drastic reduction of the GHG emission. (IPCC, 2021) From 1970 to 2019, 79% of disasters worldwide were related to extreme weather and climate change, causing 56% of deaths and 75% of economic losses from all the natural disasters of the same period combined.(WMO, 2021) They are also getting more frequent as in 2010-2019 period, the number of climate related disasters increased by almost 14% in comparison to the 1991-2000 period cases.(WMO, 2021).

Through increasing extreme weathers, disasters and related crises, climate change is becoming a serous security threat in recent years. Combined with other non-conventional threats as a 'human security' agenda, climate change is rapidly being securitized by many states and militaries as a serious threat in need of immediate response. Tied with such threats, rising global temperature due to climate change is altering global geographical settings in various ways, causing geopolitical changes. However, until recently, geopolitical, and geostrategic thoughts, didn't know nor expect climate change could impact the Earth's geographical and climatical settings and entire dynamics of geopolitics. This is because climate change was, although first predicted in 19th century,(NASA, 2021) only started to be taken seriously since the United Nations Conference on the Human Environment in 1972 and the 1st World Climate Conference in 1979. Public perception of its seriousness only came in 1990s.(박재영, 2016) So, geopolitical concerns on effects of climate change has only started to be formulated

in 2000s.

One of the areas suffering from climate change that gained attention of both environmental and geopolitical societies since 2000s is the Arctic. As explained in chapter 2, classical geopolitics theories have consensus that Eurasian heartland cannot be access through sea not only because of surrounding territories but also the inaccessible “Icy Sea” in the North.(Mahan, 1905; Mackinder, 1942; Spykman, 1969) Climate change can be a game changer for Arctic inaccessibility. As climate change rapidly and constantly melting the polar ice, the Arctic sea ice is expected to completely disappear during the summer in some moment in 2030-2100 period while sea ice formation on the Arctic Ocean during winter will also extremely reduce.(Stroeve, 2019; WMO, 2019; 국토환경정보센터, 2020) The very basic geopolitical paradigm of the Arctic Ocean being inaccessible would be invalidated, if large portion of Arctic ice sheet cease to exist, significantly blowing the basis 3 theories were created on. As Mackinder said, the “Icy Sea” served double purpose. It not just only blocks the ‘Heartland’ from reaching the sea, but also enemy of the ‘Heartland’ from reaching it directly through the sea.(Mackinder, 1904) However, it also means “Icy Sea” becoming more accessible with its rich natural resource deposits and trade route potentials.

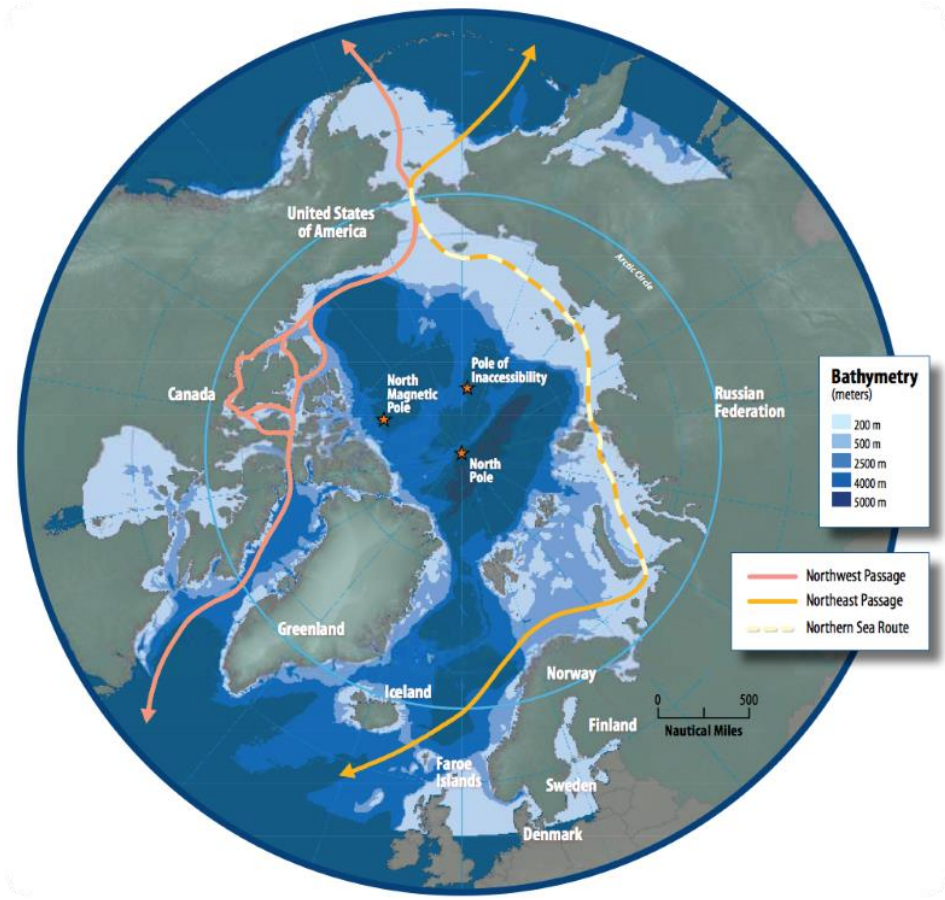
So, in short, climate change allowed increased and partly uncontested high-sea accessibility for ‘Heartland’ without it expanding into the ‘Rimland’ while giving it many possible benefits and opportunities. ‘Sea Power’ also would not move into the ‘Rimland’ to access the ‘Heartland’ The whole concept of blockade would not work either since there would be no natural boundary to block ‘Heartland’s oceanic access. In a sense, this would make Russian Heartland both ‘Heartland’ and ‘Rimland’.

3.2. Opportunities in the Opening Arctic

Historically, the Arctic wasn't an important playground. Low accessibility and hostile environment made it less than optimal for any human activity. Even with the invention of long-range bombers, stronger icebreakers and nuclear submarines that can operate over and under the thick sheet of ice during the Cold War, the importance of the Arctic was only based on its geolocational possibility of becoming vulnerable to devastating nuclear first strike from it if left open to adversaries.

With the climate change melting the ice, however, both accessibility and possibility of development in the Arctic region is increasing. Melting Arctic offers regional states with 4 possibilities 1) Increased accessibility through land and sea 2) Access to previously untapped natural resources and raw materials 3) Shortened shipping distance between Asia and North Atlantic regions 4) Changes in regional hospitability. Such increased accessibility and potentials are opening new opportunities for the economic prosperity and a new security environment with some possible security threats for regional states. It will also increase strategic value of the region and regional claims by state actors. This chapter would focus on possible benefits and opportunities of Arctic climate change.

<Pic. 8> Arctic Sea Lanes (Wikipedia, 2004)



First opportunity the opening Arctic provides is the possibility of the region's increased maritime trade access through the new northern shipping lanes passing through the Arctic. Originally, the Arctic sea-routes were practically non-existent due to the region's year-round sea ice formations posed a great threat in navigational safety of the possible shipping routes. Only limited parts of Arctic Sea Routes were only accessible during summer with the help of icebreakers, reducing the available timeframe and cost-effectiveness for freighters to use.(Pastusiak, 2016) However, with rapid climate change in the region, sea ice, that has been the main obstacle of the navigation, is dwindling. Based on various research, scientific

experts expect the Arctic sea ice to completely disappear before 2100.(Stroeve, 2019; WMO, 2019; 국토환경정보센터, 2020) By then, North Pole would be open for businesses.

<Tab. 1> Comparison between the Northern Sea Route and the Suez Canal (Pastusiak, 2016)

Route	Through the Suez Canal		Through the NSR		Difference (NM)	Difference (days)
From Murmansk to	Distance (NM)	Duration (days)	Distance (NM)	Duration (days)		
Japan (Kobe)	12,221	36.9	5,944	17.9	6,277	−19.0
Korea (Busan)	12,038	36.3	5,950	18.0	6,088	−18.3
China (Ningbo)	11,630	35.1	6,451	19.5	5,179	−15.6
From Rotterdam to	Through the Suez Canal		Through the NSR			
Japan (Kobe)	10,904	32.9	7,261	21.9	3,641	−11.0
Korea (Busan)	10,721	32.4	7,269	21.9	3,452	−10.5
China (Ningbo)	10,313	31.1	7,768	23.5	2,545	−7.6

The timeframe of availability and choice of shipping lanes with or without icebreakers would substantially increase as the Arctic sea-lanes fully open. It will provide reduced time, distance and shipping cost for freighters moving from the North Atlantic to the North Pacific. For example, using Northern Passage reduce time consumption of one-way trip from Rotterdam, Netherlands to Ningbo, China by 7.6 days compared to traditional Suez Canal route.(Pastusiak, 2016) Such reduction of time and cost would be attractive for shipping companies. And, if necessary safety measures and infrastructures for safe year-round passage are fulfilled, shipping companies would feel less risky to use the Arctic routes. Pastusiak(2016) and Bekkers, et al.(2017) predicted more shipping companies are likely to use the Northern Passage for its cost-effectiveness and estimates 4.7% of

the global trade by sea would be diverted to use Northern Sea Route if the route is fully open.

However, Bjartnes, et al.(2019) challenges such consensus by saying the Northern Sea Route to be less competitive compared to Suez Canal due to harsh climate, lacking infrastructure and bureaucratic obstacles imposed by Russian government.(Bjartnes et al., 2019) However, Bjartnes(2019)'s estimation has multiple problems: 1) The estimations on complete disappearance of Arctic ice sheet is based on more conservative and older materials based on pre-2011 research, even though article was published in 2019. 2) It doesn't suppose the situation after complete disappearance of ice sheet when it discusses about the feasibility of the NSR like many other articles do, and underestimate the possible vulnerability of the Suez canal, which includes possible dangers and cost of regional piracy,(Besley et al., 2012) and hefty insurance premium due to those activities.(Amies, 2009) More recently proven vulnerability includes possible obstruction and increase of transit fee proven by 2021 Suez Canal obstruction. 3) By only comparing the transit fee of Suez Canal to the sum of Russian tariff and fee for icebreaker escorts, it ignores possible bureaucratic barriers imposed by any transit states that must be passed during east-ward navigation through traditional shipping lanes, not to mention different characteristics between those two.

Another benefit from the Arctic climate change for regional states is easier access to regional territories and seabed for resource extraction. Both US congress hearing(US Senate, 2009) and Buixadé Farré, et al.(2014) state that there are huge deposit of fossil fuel and precious minerals beneath Arctic surface. Arctic region is known to be rich with fossil fuels, having 22% of Global oil and gas deposit.(US Senate, 2009) It is also known for immense amount of profitable minerals including platinum, gold, phosphate, bauxite, iron, copper, nickel, various rare-earth minerals, and gems like diamond.(Buixadé Farré et al., 2014)

Immense amount of profitable resource deposits has potential to make the region look like a boomtown during Alaskan gold rush. Rashid(2009) argue that combined possibility of Arctic shipping and resource exploration would offer great regional development opportunity with possibilities of encouraging migration to sparsely populated Arctic region. Increased settlement would lead to more vibrant local economy and draw needs for further infrastructure development for the region, further increasing regional accessibility.

3.3. Geostrategies in the Changing Arctic

Due to the changes in today's Arctic, many countries, whether they have direct access to the Arctic Circle or not, are showing interests in Arctic resource development and other economic activities. Heightening interests over Arctic development, combined with increasing concerns on security and environmental challenges led Arctic and some of the non-Arctic states to formulate dedicated Arctic strategy. Current Arctic strategy and status of some notable entities are as following:

1. Although the **United States of America** is an Arctic state and has sizable interest in Arctic and has disputes over resource and navigational rights with Russia and Canada. However, the US isn't looking for international arbitration over Arctic continental shelf rights as it's not a signatory of the *United Nations Convention on Law of Sea*(UNCLOS). Although it has the largest navy and airpower in the world, its military presence and activities in Arctic has been limited to only low and temporary level including strategic patrol by ballistic missile submarines and common routine air patrol since the end of the Cold War. Its Arctic strategy, also, only started to develop since 2016.(Office of the Under Secretary of Defense for Policy, 2019) Deficiency of national-level Arctic development plans made it less

competitive in investing in Arctic territories compared to Russia and its allies. The US recently started to develop departmental and sub-divisional level of Arctic strategies to secure US interest in the region and contest Chinese and Russian interest in the Arctic. This includes not only their military activities and territorial rights but also economic activities and possible economic and/or political influence to regional partners.(Office of the Under Secretary of Defense for Policy, 2019) With resource development of the US Arctic territory is limited according to the law, the US focus of its Arctic strategy is deterring possible threat of its national interest from foreign entities while securing maritime navigational rights.(Department of the Navy, 2021) Arctic strategic papers formulated by the Department of Defense and its branches, mentions that increased accessibility of "Blue Arctic" would pose both opportunities from increased navigation capability and resource while posing threats from adversarial activities of Russia and China and other environmental and humanitarian challenges. Papers commonly mandates increased presence, cooperation with allies, build ups regarding surface and submarine naval forces and sufficient ground and air asset garrisons with high preparedness in Arctic zone to deter activities of Russia and China.(Department of the Navy, 2021; US Army, 2021; Office of the Under Secretary of Defense for Policy, 2019)

2. **Canada** currently has disputes with Russia, Denmark, and the US over the matters of Arctic EEZ and navigational rights. Since it first formulated its Arctic strategy in 2009 after temporary deterioration of relationship with Russia over Arctic claims in Steven Harper's cabinet, Canada has been planning to increase its civilian and military presence and investment in its Arctic territories. The dispute with Russia is currently going through the UNCLOS arbitration, while conflicts with the US is largely under the radar.(Kikkert & Lackenbauer, 2019) The most recent version of Canadian Arctic strategy paper came out in 2019. Canada

focused more on economic development, environmental sustainability and increasing standard of life for indigenous people in its Arctic territory. Although Canadian government announced plans to increase its naval and coast guard assets including icebreakers, and further increasing cooperation with its NATO allies, in relation to Arctic security matters, The security portion of the paper had much less focus compared to socio-economic part of the paper. It also avoided any "unnecessarily antagonization" Russia in its strategic paper, unlike its southern neighbor.(Kikkert & Lackenbauer, 2019)

3. **Norway** is an Arctic state and is one of the states that are actively involved in Arctic continental shelf dispute. While dispute with Russia met a peaceful end,(The Guardian, 2018) dispute with Denmark over continental shelf near Greenland is still ongoing, even though its own strategic paper largely ignores the existence of such dispute.(Norwegian Ministries, 2017) It also has the unique island territory of Svalbard, which is denied of both military presence and Norway's exclusive rights of civilian usage under 1920 treaty. This allowed other regional and non-regional parties to participate in scientific and economic activities, while enabling Russian nationals to settle on the island.(HM Government, 2018) *Norway's Arctic Strategy*(2017)'s main goals are achieving sustainable development and regional peace and stability. Like Canada's case, Norway's Arctic policy largely focus on domestic issues like environmental issues, social security and economic development related to fishery, hydrocarbon, and infrastructure.(Norwegian Ministries, 2017) However, another focus of Norway's Arctic policy is contesting perceived threat from Russia's regional aggression in coordination with NATO and regional partners. Its position as the only NATO member who operate naval bases within the Arctic Circle, increases Norway's importance and capability in pursuing such agenda as it decreases reaction time in the case of regional contingencies. However, its 16 warships and limited airpower

lacks in number and capacity compared to Russia's northern fleet. In turn, Norway focuses more on cooperation and joint maneuvers with its NATO allies and Nordic neighbors while pursuing own military buildups.(Norwegian Ministries, 2017)

4. **Denmark**'s autonomous region of Greenland is within the Arctic Circle, allowing Denmark to be a part of the Arctic Council. The problem is that Greenland is aiming for independence.(Breum, 2021) To appease its northern citizens, Denmark's central government cooperates with local indigenous society in formulating its Arctic policies, including their agendas and challenges in strategic thinking. Therefore, Danish strategic paper is heavily concerned with regional stability and development. The most recent version of its Arctic strategy paper, published in 2011, considers regional cooperation; environmental protection; peacebuilding; and sustainable development related to mining and drilling operations in Greenland and Greenland-Faroese fishery as its primary policy agendas like its Nordic neighbors.(Kingdom of Denmark Ministry of Foreign Affairs, 2011) It also aims to be a global-level player in the Arctic and related matters through increased diplomatic capability while naming not only regional alliances or communities like the NATO, EU and the Arctic Council but also mentioning environmental organizations like the UNEP with other bilateral organizations as important platforms. Denmark maintains its position over disputed continental shelf with Norway and Canada.(Kingdom of Denmark Ministry of Foreign Affairs, 2011) However, it has only limited military presence in the Arctic to protect such claim. Those limited assets include the Thule Airbase, that is more of a US and NATO base than Danish base, and 2 off-shore patrol vessels for Arctic Coastguard duty under Danish Joint Arctic Command.(Wenger, 2021) Copenhagen's position in Arctic would be further weakened as Autonomous authorities of Greenland is trying to be separated from the central government. Greenland is increasing cooperation with Iceland for further economic

development, promotion of indigenous culture, regional peace building and coast guard patrol.(Government of Iceland, 2021) It's also trying to build its own separate Arctic strategy with its own coast guard unit to replace both outdated Danish Arctic strategy and Danish Navy.(Dall, 2021; Wenger, 2021)

5. Both **Finland** and **Sweden** are members of the Arctic Council, with territories within the Arctic Circle. But they are not making in Arctic territorial claims since their Arctic territories are land-locked provinces blocked by neighboring Norway and Russia. Finland and Sweden both are members of the EU and have deep connection with the NATO, there's a possibility of Finland and Sweden supporting members of the NATO if there's a conflict between NATO and Russia over the Arctic Circle. However, since they have traditionally held position as neutral states, it's unlikely that they would actively involve in regional conflict unless their own defense is at stake.(Götz, 2019) Finland's Arctic strategy and policy, originated from 2013 policy paper, recently got renewed in 2021 and extended to 2030.(Brander & Borg, 2021) Sweden recently changed its Arctic strategy in 2020.(Linde, 2020) Since they have no connection with the Arctic Ocean, their Arctic strategy doesn't concern with unilateral Arctic resource exploration. The common main foci are sustainable development in its inland territory, promotion of indigenous society and international cooperation in relations to scientific research, environmental protection, and regional stability.(Linde, 2020; Brander & Borg, 2021) However, they differ significantly from each other when it comes to the defense-related agenda. Finnish Arctic strategy is solely focused on achieving SDG goals, with almost no mentions on security.(Brander & Borg, 2021) Swedish strategy paper, on the other hand, covers its viewpoint in regional tension and build up, with presumed need for defensive force readiness to protect its security in significant portion. It sees increased Russian activities, soured relationship between Russia and the West, and Chinese Arctic approach as major

factors affecting regional security. The paper, in turn, calls for facilitating regional security cooperation to reduce possible risks. It also says increasing Swedish military capability and increasing unilateral or joint regional military exercises to increase force preparedness are needed for Swedish national security. (Linde, 2020)

6. **Iceland** is an Arctic state, who's a member of both the Arctic Council and the NATO. It offers NATO with regional airbase and radar stations. However, it has no military. Only 4 Coast Guards vessels each armed with either one 40mm autocannon or only small arms.(Icelandic Coast Guard, 2021a) So it heavily depends on air patrol run by other NATO members to maintain its national defense. (Icelandic Coast Guard, 2021b) Although Iceland being a NATO member, since its economy heavily rely on Arctic fishery, it's seeking cooperation in coastal/offshore patrol activities with not only regional allies but also Russia to combat illegal fishing and achieve necessary environmental preservation.(Kremlin, 2017) On March 28, 2011, Iceland government passed an Arctic Policy Resolution, which is still the center of Iceland's arctic policy. According to the resolution, Iceland's Arctic strategy focuses on 12 priority areas that can be divided into 3 main categories: 1) Promoting peace, demilitarization, and international cooperation in the region through international frameworks like the Arctic Council and United Nations Convention on the Law of the Sea. 2) Cooperation with regional autonomous regions of the Faroe Islands and Greenland to promote economic interests and indigenous people's rights 3) Addressing regional climate change and promoting Arctic awareness and sustainability.(Althingi of Iceland, 2011) Iceland has no disputed claims nor demands in the Arctic Circle.

7. The United Kingdom is not an Arctic state nor is a member of the Arctic Council. It has no territory within the circle, so, it can't make Arctic sovereignty claims. UK, however, does have significant stake in the region. British Isles are located close to the Arctic, facing the North Sea and Norwegian Sea, in which it

depends on its fossil fuel development for its energy procurement and economic growth. UK's recent Arctic policy paper thus focuses on potential of economic gains through regional trade and investment.(HM Government, 2018) To fully realize the economic benefit, UK government seeks international cooperation for regional sustainability, cooperation and opportunities for regional investment.(HM Government, 2018) Although the paper itself only mentions UK's arctic security perspective in only small portion, mentioning nothing more than NATO cooperation,(HM Government, 2018) the UK is an important member of the NATO, who served as a historical pivot in blocking Russia's North Atlantic/Arctic activities along the GIUK line with its naval assets, who are active on the North Atlantic. This viewpoint is clearly shown in other government document published in 2018 regarding UK's Arctic security agenda. According to the document, the UK recognizes and willing to continue its status as a pivot for NATO's naval power in the North Atlantic and Arctic, while seeing increased Russian activity and capability in the region as a major threat. Thus, it seeks further NATO cooperation while reviewing its naval capacity, with focuses of Anti-Submarine Warfare.(House of Commons Defence Committee, 2018) Recent participation of its navy in US-led FONOP against China and Russia shows evidence that UK will actively engage with its naval power in case of regional conflict.

8. Since most of aforementioned countries are members of the **North Atlantic Treaty Organization**, NATO would be most likely to make common actions if security threat rises concerning its members on Arctic issues. Like the case of the US, UK and Norway, the NATO focuses on deterring possible threats towards the alliance from the outside, especially Russia in this case and promoting cooperation and military coordination between its members to incubate collective defensive capability in the high north.(Connolly, 2017)

9. Although only 3 out of 27 members have Arctic territories, the **European**

Union has its own concerns over Arctic matters. EU is responsible to address its member states' interest and has its own collective geopolitical and economic interest in sustainable resource development and maritime traffic on the North Atlantic Ocean. and the Arctic Ocean. Its deep connection with the US and its NATO allies makes it concerned with possible tension and security issues in the region. EU is also concerned about regional natural environment and climate change in general.(European Commission, 2021b) For these reasons, the EU formulated its own collective Arctic strategy since 2008 even though it has limited influence on the region.(European Commission, 2021a) Based on recent policy communication set in 2019, the EU mostly focus on 2 areas: 1) Security cooperation against 'assertive Russia' and maintaining peace 2) Cooperation in Arctic preservation and scientific research. Latter category gained more focus recently in conjunction with the European Green Deal to mitigate climate change. Other policy focuses include increasing international cooperation in areas like regional search and rescue operations and scientific research; and supporting regional society. To increase their footing in the Arctic matter, the EU plans to establish a European Commission office in Greenland, making regional investments and trying to gain observer's seat in the Arctic Council. It is also promoting slogans like "call for oil, coal and gas to remain in the ground", urging Arctic drilling operations to stop all together and urging members to not buy their products. This shows that EU prioritizes in preservation over development

10. **China** is not an Arctic state and, unlike the UK, has no geographical proximity to the Arctic seas. However, China calls itself a "near-Arctic" state and involving itself more to the Arctic matters.(State Council of the People's Republic of China, 2018) Chinese Polar Silk Road plan, part of the Belt and Road Initiative, involves investing in infrastructure construction and regional development to increase access to regional trade route, market, and resources. However, growing

ties between Russia and China has certain limits. While welcoming Chinese investments, Russia is also limiting China's Arctic ambitions by limiting its role in arctic development cooperation. Putin also firmly denied possibility of military alliance between Russia and China.(한겨레, 2019. 12. 20) Thus, China is recently diversifying its arctic access routes by investing in other European arctic states.

Chapter 4. Russia: From the Heartland to an Arctic Maritime Power?

4.1. Antrim's View

Russia, who has longest coastline facing the Arctic Ocean and large part of its territory is in the Arctic Circle, like other Arctic states, has interests and stakes in the Arctic. There're few articles that covers Arctic geopolitics and Russia's strategic position through critically revisiting classical geopolitics theories in the age of climate change. One of them is an article published in 2010, by Caitlyn L. Antrim: *The Next Geographical Pivot: The Russian Arctic in the 21st Century*. Antrim(2010) argues the Arctic would become "a new geographical pivot". According to the article, due to the climate change and melting Arctic, Russia is "no longer susceptible to geographic isolation or encirclement" and would become "one of the maritime powers of the "Rimland"" to pursue its regional interests.

Antrim(2010) argues Russian Arctic interest perception in the era of climate change can be listed in 4 categories: economy, security, transportation, and development. Large portion of natural resources it produces comes from the Arctic and near-Arctic regions and more than 60% of the estimated total of Arctic resources is located in either Russian territory or its exclusive zone. The Northern Sea Route serve as both possible trade route and possible strategic naval corridor.

Russia needs to protect its long and now more vulnerable coastline. With climate change and technological advancement increasing the regional accessibility; and establishment of Arctic international regimes and regional claims, Russian stakes in Arctic resources, open-water access, and other economic and security factors increased. Antrim(2010) argues that Russia would try to exploit, develop, and protect such benefits with still lacking but increasing capacity in both policy and military apparatus to do so. And still, Antrim(2010) says, Russia holds upper hands in both investment and armory in comparison to other regional states in terms of Arctic power projection and development.

Antrim(2010) saw cooperation and coexistence in the Arctic between Russia and its Western counterparts would be possible, and regional security environment would rather be peaceful due to the following reasons: 1) Russia needs to be "more closely integrated to global financial and commercial network" for foreign investment and international-regime-level cooperation needed for achieving maximum benefit in maintaining arctic shipping lane, regional security, and environmental protection. 2) The west can benefit from peaceful coexistence through easier access to Asian and Northern Russian ports, with their cheaper raw materials, goods, and market 3) Existence of regional international regimes, mutual cooperation and partnership 4) Possible benefits from disputes do not outweigh benefits from regional stability and continuous accessibility

Lastly, Antrim(2010) suggests regional extension of Global Maritime Partnership Initiative with following elements for the continued peaceful coexistence of regional states. 1) Reinforcing international rule of law 2) Increasing cooperation in regional emergency response, security, and safety 3) Information sharing 4) Joint research programs 5) Joint policymaking on regional access and development

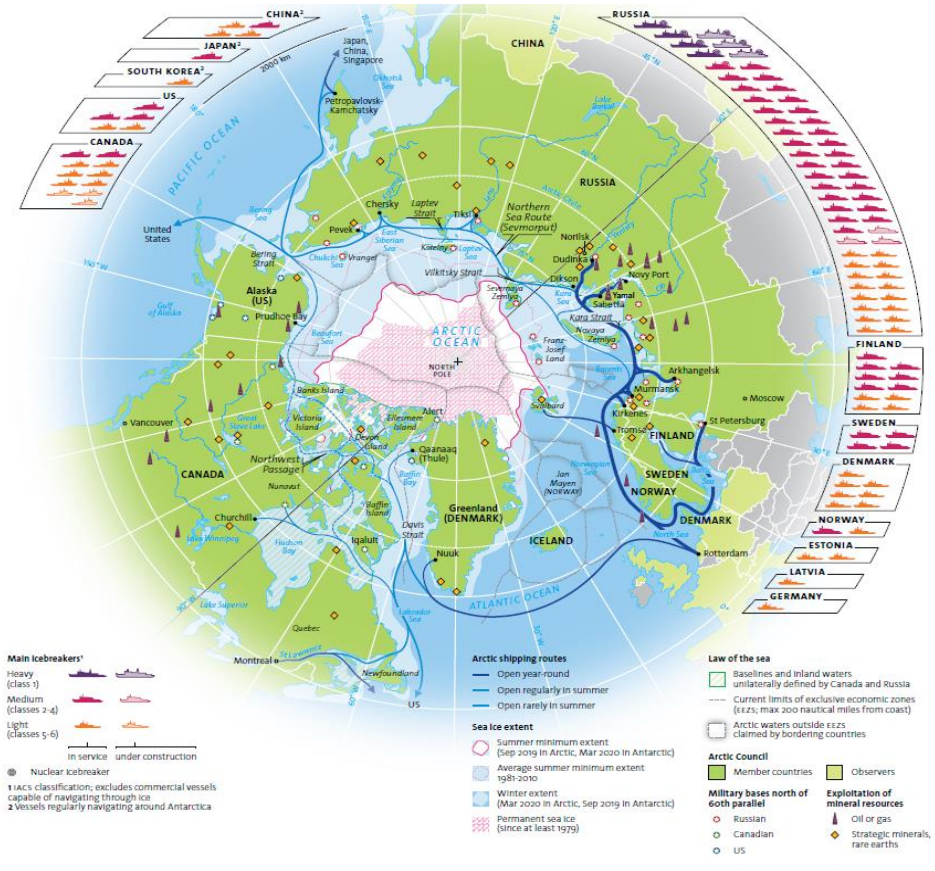
4.2. Russia's Arctic: 11 Years from Antrim

11 years have passed since the publication of Antrim's article in 2010. Since then, some conditions in regards with the Arctic security environment Antrim's paper was based on has significantly changed. First is the acceleration of the climate change.(IPCC, 2021) With the Arctic ice melting faster and more, Arctic activities related to development and shipping also increased. and the foremost change is the relationship between Russia and the West. In 2010, Russia and its western rivals had more cordial relationship. Although there were flashpoints like 2008 South Ossetian War and controversies over NATO's expansion and US-led missile defense initiative, post-Soviet era Russia-NATO relationship was rather peaceful and friendly. Russia and the west cooperated in various fields such as energy development, space exploration, arms control, and anti-terrorism/piracy operations. However, in 2014, the Ukrainian Crisis, civil war and Russian annexation of Crimea shattered relationship between Russia and the West with increased hostility and decreased diplomatic dialogues. Sanctions, blame games, arms race and military stand-offs followed, increasing security risks in both Eastern Europe and the Arctic region.

Economically, Russia is well using its advantage that over 60% of Arctic resource deposits are buried under its territory.(US Senate, 2009) Energy projects in Arctic circle, like Yamal gas project and numerous mining operations are ongoing in the region. Russia is also depending on Arctic resources for its carbon neutrality by producing cheap and clean hydrogen from its vast hydrocarbon deposit in the Arctic.(노진선, 2020) The Northern Sea Routes gained increased viability as the trade route due to the ice reduction. 2020 saw 33 million tons of cargo transported through the route, up from 11 million in 2017, when President Putin proposed major investment to the shipping lane.(Lam, 2021) and the incident

at the Suez Canal gave it a look as a possible alternative for some. Now Russia is planning for year-round transit from 2022.(Stolyarov, 2021) Ongoing development in the Russian high north is increasing need for shipment of goods and resources while increasing supporting infrastructure and shipping services in the region, adding more viability and profitability to the regional shipping route. Russia is building or restoring transit harbors, towns, railroads, and other infrastructures in the north to sustain the trade route and resource development. This would increase the potential of local trade volume and offers great regional development opportunity with possibilities of encouraging migration to sparsely populated Arctic region.(Rashid, 2009) To support regional development, Russia is also deploying new mobile nuclear reactors to the region to increase sustainability for both military and civilian operations.(BBC News, 2019, August 23)

<Pic. 9> Infographic on Arctic Region with Comparison of the Number of Icebreakers (Baccaro & Descamps, 2020)



In commercial shipping perspective, Russia has some unmatched advantages in Arctic trade than any other states claiming the region due to its massive fleet of icebreakers. Icebreakers are essential in Arctic navigation. Even if there'd be no summer ice in near future, the value of icebreakers doesn't go away since it would still increase the timeframe of shipping operation and provide deeper accessibility to Arctic Ocean. Currently Russia has 51 icebreakers in its stock and building 6 more. All of them are owned either by the government or the state-owned companies, such as Rosatom. That number surpasses the combined number of icebreakers, countries other than Russia have. It is also the only owner of nuclear-

powered icebreakers with 5 of them currently in service and 3 new models being built. These ships are much larger and more powerful. Also, with the power of nuclear reactor that does not need refueling very often, Russia can stay on Arctic much longer than its rivals.(Baccaro & Descamps, 2020) Currently, Russia is the only country that provides icebreaker escorts for commercial shipping with fixed fees. Other Arctic states like Canada and the US don't offer such services. This makes traversing through Russian Arctic ship lanes much safer than other counterparts.

Icebreakers are not only used for commercial purposes. Russian coast guards and navy also operate them to increase navigational capability on the Arctic. Even commercial icebreaker fleets owned by Rosatomflot conduct joint exercise with Russian navy as naval support ships. Russia actively uses its icebreaker fleet for border patrol, scientific research, and search & rescue operations, increasing the operational capacity in further north.

With increased Arctic activities in expectation for future benefits and risks, Russian government is constantly creating and amending its Arctic plans and making actions to adapt to the changing nature of the region.(Antrim, 2010) According to Antrim(2010), In before, Russia clearly noted its stakes in the Arctic region while putting emphasis on regional cooperation in development and peacebuilding.

Since the souring of relationship between Russia and the West since 2014, opening of the new trade routes and increased strategic and economic importance of the Russian Arctic, political environment has changed from that of Antrim's time. Climate change and consequent opening of the Arctic for maritime navigation is now a double-edged sword for Russia, that will not only open the new opportunity but also increase the security risk. Like Antrim(2010) pointed out, Russia's navy traditionally suffered from strained defense capability coming from its long

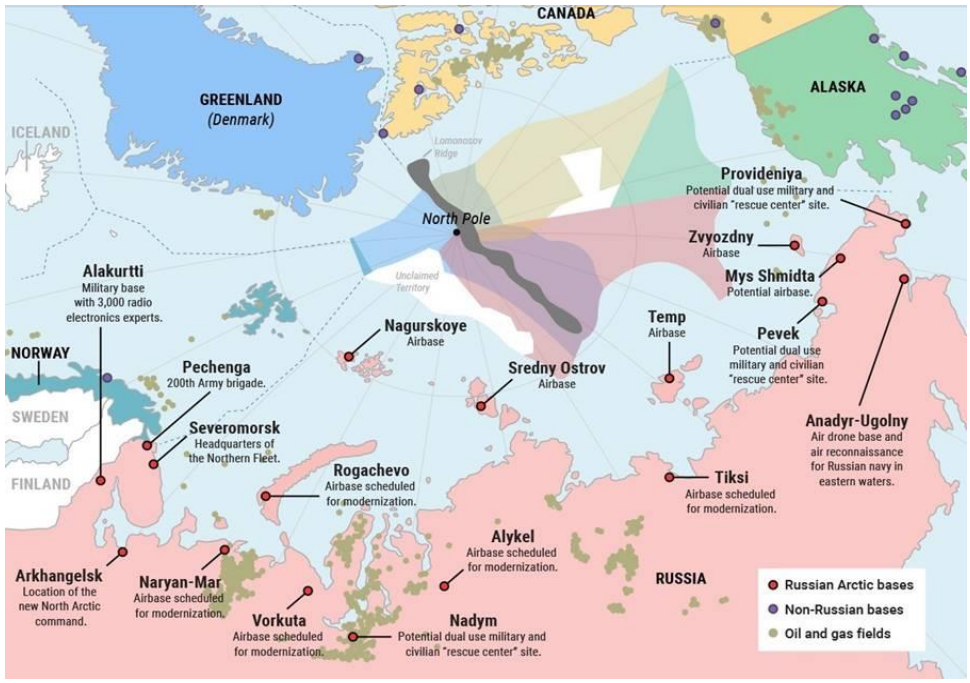
coastline and its fleets largely isolated from each other. Now with foreign hostility increased and 'impassible Arctic ice sea' reducing, for the first time, Russia has to face the vulnerability in its northern coastline, facing the US across the ocean. Russian navy would be further strained as it now has to protect long Arctic coastline, defend increased regional trade, oceanic traffic, resource access. As Mahan(1890) said, a strong navy would be needed to deter possible amphibious invasions, maintain trade and communication.(Mahan, 1890)

So it is only natural for Russia to make notable changes of rhetoric in its Arctic policies and strategies following the post-2014 changes in regional geopolitical situation. According to the most recent document of Russian Arctic strategy, *Strategy for Developing the Russian Arctic Zone and Ensuring National Security through 2035*(2020), succeeds the rhetoric of active facilitation of international cooperation and peacebuilding in the region from previous document while also enhancing the rhetoric for environmental concerns and need for preservation and sustainable development. It also mentions larger governmental investment for regional development for infrastructure, resources, trade and energy. However, it shows worrisome trend of warning foreign power's embition to subvert Russian sovereignty over the region and its need for defense as well. Current military strategic documents show even less emphasis on regional cooperation while focusing more on possible threats, defensive stances, and eagerness for regional naval buildup. For example, *Maritime Doctrine of the Russian Federation*(2015) clearly states that "maintaining maritime capabilities… …at the level consistent with national interests of the Russian Federation, including presence of the Russian Fleet in the Arctic" as one of its principles in naval buildup.(President of the Russian Federation, 2015) It also says "the National Maritime Policy in the Arctic regional area is determined by… …the abundance of natural resources in the exclusive economic zone and the continental shelf of the

Russian Federation, by the growing importance of the Northern Sea Route for sustainable development and security of the Russian Federation, and the decisive role of the Northern Fleet in the defense of the country from the sea and ocean".(President of the Russian Federation, 2015)

Another strategic document named *Fundamentals of the State Policy of the Russian Federation in the Field of Naval Operations for the Period Until 2030*, written in 2017, states that "the aspiration of a range of states, primarily the United States of America and its allies, to dominate on the World Ocean, including the Arctic", "economic, political, international legal, and military pressure against the Russian Federation to… …weaken its control over the Northern Sea Route", "increased aspirations of a range of states to own sources of hydrocarbon energy resources in… …the Arctic" as "existing and emerging new risks and threats to the national security of the Russian Federation".(President of the Russian Federation, 2017) All these mean Russia sees and wants to retain the value of its own Arctic region for its possible economic gains and clearly sees any attempts of potential adversaries to undermine Russian dominance on such interests as threat to national security.

<Pic. 10 >Infographic on Arctic Military Bases by 2017(Busch, 2017)



In accordance with the strategic policy, Russia is pursuing a path towards maritime build-up, investing, modernizing, and upsizing its aging navy. As a result, Russian military advantage in the Arctic has grown significantly, which is now a far cry from 2010 when "Russia's ability to patrol and monitor its increasingly accessible Arctic EEZ has not kept pace with the receding summer ice cover".(Antrim, 2010) Although still undergoing modernization, Russia still has the 3rd largest navy in the world, with 224 ships and 73 submarines. The number of Russian military vessels increased significantly since 2015, from 186(ONI, 2015) to 297.(Russian Ships, 2021) Except for the US, (CSIS, 2021) none of the regional states made such significant increase of force.

Force presence is also significant. Other than Norwegian bases and Thule airbase in Greenland, most of the NATO bases in the Arctic are small stations for signal and reconnaissance operations with small troops. Meanwhile, Russia established the Northern Fleet Joint Strategic Command in 2014, which later

reorganized as the Northern Military District in 2021 is Russia's 5th military district dedicated for Arctic defense. Under its command, local garrisons are being rearmed and refitted into form sizable combined arms units, larger than any other foreign military presence in the Arctic Circle.(Boulègue, 2019) New bases are being built in the region to house ground, air and naval forces while abandoned soviet-era bases in the region are being restored. Variety of assets ranging from motorized infantry to tactical cruise missiles were deployed to the region for additional defensive capabilities in the region.(Melino & Conley, 2020)

Another Russian advantage is geographical proximity of its forces, needed for rapid deployment. Mahan once said controlling the sea requires controlling strategic water ways and chokepoints. In this regard, Russia perfectly fits the criteria of sea power of the Arctic Ocean. In the western side, only Norway matches Russian capability and geographical proximity in rapidly deploying naval forces in the region. However, its 10 surface combatants and 6 submarines won't be enough to counter the Russian Northern fleet with 42 ships and 43 submarines. (RussianShips, 2021) This would give Russia an upper hand in short term conflict scenarios. Russia's land based Anti-Access / Area Denial(A2/AD) capability further increases Russian advantage in the region. Russia has several airfields and defensive emplacements equipped with fighter jets, Anti-ship/submarine Warfare planes, coastal artilleries, advanced surface-to-air missile systems, like S-400 and Pantsir SPAA③, and long-range surface-to-ship cruise missile batteries, like Bal and Bastion, in almost every strategic location from Bering strait to Kola peninsula.(Batashvili, 2019)

Situations are more difficult to Russia's adversaries in terms of controlling the Bering strait. The US has army and air force bases in Alaska. But there's no naval

③ Self-propelled Anti-Air

base in the region, only small coast guard stations with cutters ill-equipped to deter Russian coast guard ships armed with high caliber guns and missiles.(United States Coast Guard, 2021) Closest US naval bases located in Yokosuka, Japan and Washington state, US are 4000~5000km away while Russian naval base in Petropavlovsk-Kamchatski is about 2300km away.④ Russia also has 2 airbases stationed near Bering strait, with dozens more in Russian Far East, equipping regional forces with enough land, sea and air based A2/AD capability against transiting naval and air assets. (Batashvili, 2019)

It's no doubt that combined forces of the US alone are numerically and technologically superior to their Russian counterparts. The gap widens if the US involves its allies in the conflict. So, in the long term, Russia would face difficulty in maintaining its initial success as NATO's reinforcements from all around the world arrives to counter Russian forces. However, deploying forces from a longer distance and advanced area denial capability would give precious time for Russians to dig in and plan for next move, just like Japan did in Russo-Japanese War. US having adversaries like China, North Korea and Iran in other regions makes it hard to converge all its forces to the Russian Arctic front. Also, it's hard to imagine either side to commit to all-out war with mass mobilization due to the fear of high casualties and mutually assured destruction by each other's nuclear force.

Now, Russia has unmatched presence and build up than any other states claiming the region with regional development, shipping lane management, icebreakers, fleet power and other military elements.(Baccaro & Descamps, 2020; RussianShips, 2020; Boulègue, 2019; Melino & Conley, 2020) Furthermore, Russia is planning and expected to expand such capacity even further to ensure prolonged regional superiority.(Nilsen, 2017)

④ Measured by author using Google Earth

4.3. Russian Challenges

With its geopolitical condition rapidly changing, Russia gained upper hand in the region with significant increase in state's strategy, investments, military build-up, and other efforts in the North Pole for the national interest and prospects of benefits it could gain from it. Seeing from multiple strategic factors, Russia can be considered as rising and dominant Arctic 'Sea Power'. But the situation is not all that bright for Russian side.

Although Russia is pursuing maritime build-up, modernizing, and up sizing its aging navy. currently has its own obstacles in reaching the possible future of becoming a true maritime state. Russian strategy and defense assets were historically less focused on naval capacity not only because of still existing limits to access high seas, but also high cost and clear, imminent land threat by its rivals. This historical lack of investment created many problems in Russia's maritime build-up, which includes stagnation and decline of Russian shipbuilding industry since the collapse of the Soviet Union that needs a lot of investment to amend. Russia has weaker economy than its western counterparts and heavily rely on resource trade. Western sanctions against Russia consequent to 2014 Ukraine Crisis are making it harder for Russia to sustainably fund its Arctic development and naval projects as foreign investment and trade of sensitive materials reduced. Several Arctic projects, both military and economic development, got underfunded and delayed.(Trevithick, 2020; Kremlin, 2019)

Russia's perception of land-based threat from the West increased in post-Cold War environment. Baltic states, which were formerly part of the USSR joined the NATO, Russian mainland now share border with NATO state without any geographical buffer that the USSR had. with the Ukraine Crisis and Ukraine pursuing NATO membership. It is true that even with stagnations in progress,

Russia has upper hand in the Arctic. But Russia's own problems combined with land-based competition from NATO would continue to pressure Russia to invest more in building up ground forces, preventing fast and smooth transition from 'Land Power' to 'Sea Power'.

Current crises from COVID-19 Pandemic are posing serious challenges to not only Russia, but also all the rivaling states. Quarantines, country-wide lockdowns, decreased consumption and trade all caused serious blow to both the global economy and national budget.(Reuters, 2020) Such economic constraints, met with massive infection cases and casualties brought chaos in human resource management in military and Arctic development. Containment and massive casualties, temporal decrease in carbon emission,(Le Quéré et al., 2020) and constraints in all economic sectors have possibility to affect estimated outcomes of the Arctic climate change in unexpected and unprecedented ways.

Environmental concerns over climate change and Arctic development are bringing many other unconventional challenges to Russia. Although Russia is emphasizing how its military and civilian bodies are jointly working to preserve Arctic environment through various channels, risks of environmental hazards, such as pollution by usage of sea route and resource exploitation is bringing public outcry. Some corporations, including shipping companies like Evergreen, CMA-CGM, Hapag-Lloyd and MSC pledged not to use Arctic sea-lanes due to these concerns.(The Maritime Executive, 2019) Environmental NGOs clashed with Russian police and coast guards in several incidents over matters of Arctic resource exploitation. The EU even proposed banning hydrocarbon extraction in the region all together and stop purchasing Arctic hydrocarbon.(Siebold, 2021) Although Putin consider such proposal to be not harmful, it will have its impact since, ironically, Russian carbon neutrality plan depends much on increasing production of clean hydrogen using Arctic hydrocarbon.

Climate change, the main provider of future Arctic opportunities, is also giving Russia challenges. Arctic climate change is more rapid and drastic compared to other regions. As the world face about 1.5 ˚ C rise in average temperature, some parts of Russian Arctic suffered from 7˚C average temperature rise than normal.(Staalesen, 2021) With temperature rising rapidly, making regional summer more hot and dry, the number and size of forest fire is increasing every year in the Russian Siberia, threatening both wild and human lives(Roth, 2021)

<Pic. 11> Huge Crater in Siberia Created by Permafrost Thaw(Gibbens, 2017)

Climate change is also melting permafrost beneath the Arctic tundra. Arctic permafrost serves the role similar to bed rock in other geological settings, supporting both natural flora and man-made structures in the region. Over 70% of Arctic infrastructure and 45% of oil extraction fields are built on permafrost.(Siebold, 2021) These structures are now at risk. Recently, sudden emergence of massive sink holes and massive erosions are frequently reported in the region. As the permafrost beneath melts away, ground above implodes as it can

no longer support its weight. This caused serious problems for forestry of Siberian taiga, as massive crater engulfs valuable forest needed for carbon capture and wildlife preservation.(Gibbens, 2017) The phenomenon also inflicted damages to buildings and infrastructures. In 2020, an oil reservoir for a powerplant in Norilsk, Russia got ruptured because of the geological instability caused by permafrost melting. This caused serious environmental hazard as 20000t of diesel spilled into nearby river system. The spill contaminated the about 350km^2 of riverside area with damages needing 10 years of cleanups for full restoration.(BBC News, 2020) Same risks are posed to other infrastructures like ports, roads, railways, and pipelines in the region as well as residential buildings, threatening 5.4 million Arctic residents.(Troianovski et al., 2019)

To make matters worse, both wildfire and melting permafrost are in turn contributing to climate change, creating a negative cycle. Wildfire releases large amount of carbon into the atmosphere while reducing forest that can absorb it.(Witze, 2020) Permafrost thaw is releasing gas hydrates and bio-wastes captured within long time ago, emitting methane, a highly potent greenhouse gas.(Gibbens, 2017)

Sea level rise poses another threat to future Russian prosperity in the Arctic. Some of the Northern Siberian territories are barely above sea level with highest points less than 100m.(Wikipedia, 2019) Russian coastline is too vast to envelop it with coastal walls to deter sea level rise. Combined with the loss of permafrost, sea level rise as an effect of climate change can cost Russia to lose sizable amount of northern territory with its expensive ports and infrastructures to coastal flooding in the future, as the country is already losing 468km^2 of land annually due to erosion.(Buckholz, 2016)

Melting permafrost poses another threat to the locals. In summer 2016, anthrax outbreak in Russia’s Yamal peninsula caused 90 people to be hospitalized

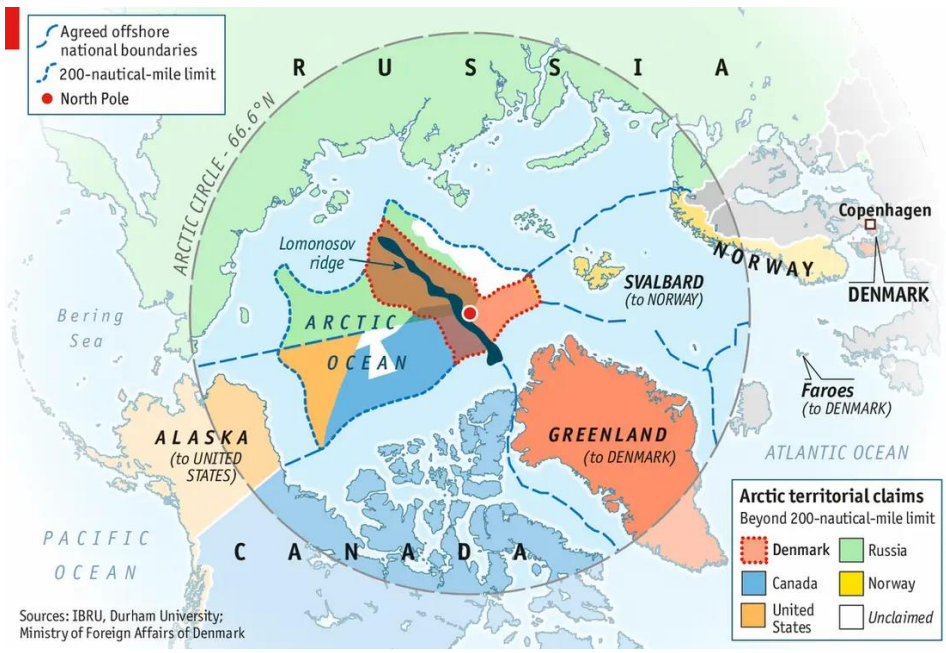
with 1 fatality. 2350 domesticated reindeers were also killed by the infection.(Liskova et al., 2021) Russian government had to deploy the CBRN Defense Force to the region to provide medical aid, evacuate and sterilize the region.(The Siberian Times, 2016) Scientists discovered that the origin of the epidemic was dozens of years old anthrax cysts laid dormant in reindeer carcasses preserved under permafrost. Due to the temperature rise, the carcasses resurfaced, and hot, dry atmosphere made it easy for cysts to spread.(Liskova et al., 2021) Such regional epidemic can occur again in the future, causing serious humanitarian losses in the isolated, low income, rural or nomadic society of the Russian North and migrated workers working for Arctic development.

There's no doubt that Russia enjoys unchallengeable advantage in current Arctic settings as a regional maritime power which would still be able to project dominance in Arctic region for a foreseeable future. But challenges posed by Russia's lacking economic capacity, external threats with soured international relations, environmental and humanitarian threats can undermine Russian advantages in maintaining its Arctic supremacy. To keep its reign in the Arctic for a long time to benefit from it and to truly become a global maritime power, Russia needs to be ready and able to overcome all those issues, while competing with other actors in the region.

Chapter 5. Possibility of Conflict

5.1. Continental Shelf and Territorial Disputes

<Pic. 12> Claims on the Arctic Ocean (The Economist, 2014)



Under the *United Nations Convention on the Law of the Sea*(1983), every Arctic states, like any other coastal states, share rights to set 12 nm territorial water and 200nm Exclusive Economic Zone. The EEZ can be expanded by 350nm under the context of the article 76 if the zone is established on the continental shelf extending from the coastal state's territory. This is where Arctic claims and disputes originate. Due to Arctic ice and lack of proper survey of underwater terrains, matters of ownership over Arctic continental shelf remained rather obscure until recently. However, from early 2000s, with technological advancement and increased possibility of Arctic resource development, many Arctic states started claiming portions of the Arctic Ocean and its underwater terrains to be theirs.

Significant parts of them overlapped with each other and this resulted in some heated international debates on Arctic sovereignty and legality of these claims.

Most of the related conflicts being bilateral, approaches to solving the issue also differs. In 2018, Russia and Norway successfully settled territorial dispute on Arctic continental shelf and Barents Sea through peaceful negotiations and compromises, even agreeing on common resource development and fishery management along the boundaries.(The Guardian, 2018, February 14) On the other hand, harsh political rhetoric, accompanied by increased regional military activities once signified the Arctic territorial dispute between Canada and Russia. (정인환, 2013) While exchange of colorful words ceased since the end of Harper's cabinet, both Russia and Canada shows no intention to back down on their presumed Arctic sovereignty. The dispute between Russia and the US seems less significant with both sides observe provisional enforcement of US-USSR Boundary Treaty of 1990. However, Russia hasn't ratified the treaty yet and there are some dissents on current boundary, making the future of the treaty uncertain. Arctic dispute is largely still unsolved and increasing competition and tensions concerning resource and territorial rights can lead to further regional instability.

5.2. Regional Security Dilemma Between Big Powers

The biggest problem undermining the stability of Arctic security is the security dilemma between region's big powers, namely Russia and the NATO. Since the souring of relations in 2014 with the Ukrainian Crisis, both trust and talk between 2 sides reduced significantly. conflict between Russia and the west met a new height since the end of the cold war. With ongoing sanctions, diplomatic incidents, arms race, propagandas, and several proxy wars, both side lost trust of each other. Hostility grew and several public and private partnerships ceased.

Russia condemned NATO on serious aggression to its security for its joint exercises near Russian territory and NATO framed Russian exercises and recent maneuvers near Ukrainian border as the pretext of imminent invasion.

With less dialogue and information sharing, such misinformation and over-exaggeration can have dire consequences if combined with presumed and sometimes exaggerated mutual hostility and increased military activities and build-ups on both sides. Jervis(1978) explains that lack of information on intention and capacity can lead to “Security Dilemma”, escalating tension between both sides. Following his explanation, Russian build-up to protect its sovereignty, security and national interest would also have unintended consequences of harming its security even if Russia’s military build-up is purely defensive in nature. With intensified mutual distrust, Western powers are acting to balance Russian ‘threats’ coming from its military projects and activities. The same goes for Russia’s response to the NATO’s actions. in the current situation of security dilemma any action, whether it would be arms race or military exercises, can lead to dangerous stand-off in the Arctic region, gravely undermining regional peace and stability.

Chinese involvement in the Arctic complicates the matter even more. Since presidency of Donald Trump and Xi Jinping, US-China relationship deteriorated rapidly, both economically and politically. In 2019 Arctic Council session, former US secretary of state Mike Pompeo denied China’s regional rights as an observer state to the council, denying its proclamation of being a “near-Arctic state”. He also alleged that China’s civilian and scientific activities in the region are heavily connected with military presence.(Johnson, 2019) This proves that security dilemma and stand-off in the Western Pacific between the US and China can expand to the Arctic, further jeopardizing regional stability.

5.3. Freedom of Navigation

Freedom of navigation on the Arctic Ocean is another flashpoint that can escalate arctic tension. Under the UNCLOS' legal frameworks, coastal states can control maritime traffic and activities within their territorial waters unless the vessel is making innocent passage. Both Canada and Russia consider Northwest and Northeast Arctic passages as their respective territorial water. However, the US, who's not signatory of the UNCLOS, claims them to be international passage, where the sovereign state's controlling rights reduce. (김정건 외, 2010)

The US is known for making provocative and legally controversial "Freedom of Navigation Operations" against those who are, in US' view, making excessive maritime claims, by sending armed us naval vessel to navigate near or through the 'excessively claimed water' to protest and deny such claims. So far, the US has shown quite unilateralistic posture in conducting FONOPs. Whether the coastal state the US is protesting against is a US ally or not doesn't matter. US claims its military navigation is conducted either on high seas or within the rights of innocent passage and thus legal.

Although the UNCLOS states the conditions for the innocent passage, the legality of innocent passage for heavily armed military vessel in part of military operation is still uncertain in current legal framework of the UNCLOS, with many coastal states mandates foreign military vessel to give prior notice to the coastal states for its transit.(김영석, 2017) After the Black Sea Incident of 1988 caused by the US FONOP,(Wikipedia, 2014) the US and the USSR made joint statement in 1989 for uniform interpretation of innocent passage that describes military vessel's right for innocent passage only invalidated by the conditions written in the UNCLOS.(김영석, 2017) When it comes to FONOP, however, things get complicated. Since the FONOP is a military operation conducted to oppose

maritime claims of coastal states, this could be considered as “threat against the sovereignty, territorial integrity or political independence of the coastal state” and “act of propaganda aimed at affecting the defense or security of the coastal state” that are denied of innocent passage under UNCLOS. (UN General Assembly, 1982)

The US FONOPs in the Arctic circle so far only conducted against Canada, that received uncomfortable but peaceful response. However, Russia also experienced FONOPs by the US and its allies in the cases like the Black Sea Incident of 1986, 1988, and 2021. In every case, warships conducting FONOP met legal, yet defiant and dangerous response from the Russian navy, including ramming maneuvers and warning shots. In Arctic Council, 2019, former US secretary of state Mike Pompeo criticized Russia for making “illegitimate claims” and called its activity in the region “aggressive”.(Johnson, 2019) Pompeo’s successor Anthony Blinken also criticized Russia for “advancing unlawful maritime claims, particularly its regulation of foreign vessels transiting the Northern Sea route”, 2 years later.(RFE/RL, 2021) This shows the existence of bipartisan consensus in the US on contesting Russia’s control of its territorial Arctic waters. So, while there’s no such operation on the Arctic so far, it is possible in the foreseeable future, the US or other NATO navies conducting FONOPs in the Russian Arctic, like they did in the South China Sea and the Black Sea. It’s easy to expect Russian navy to make responses to block such ‘aggression’, like the case of the Black Sea incident in which, in turn, can be seen as aggression towards NATO vessels. Such dangerous exchanges, combined with regional security dilemma, can deteriorate regional security and stability, possibly creating serious conflict even armed clashes between both sides.

Chapter 6. Conclusion

Traditional perception of the Arctic as a frozen wasteland and a barrier concerning its geographical inaccessibility has been the fundamental of the Eurasian and global geopolitics, creating the concept of distinct ‘Land Power’ and ‘Sea Power’ and contest between them over regional and global dominance. Russia in this context, has been considered as a ‘Land Power’, blocked from unlimited access to the high-sea and lacking maritime potential. Now, those geopolitical fundamentals are shifted due to climate change. With the global temperature rapidly rising, the Arctic is melting. Under the current settings, it’s hard to think that climate change would subside and Arctic would get frozen again. We can’t no longer deny the fact that the Arctic ice cap, that once covered the Arctic Ocean, blocking regional access and development would be gone in this century, opening both Arctic and its coastal states for maritime traffic. While environmentally disastrous, with Arctic accessibility increasing, the region is now filled with new opportunities and new risks, needing new geopolitical strategies and thoughts for regional players.

Waterways formerly considered inaccessible is now open for freighters and natural resources once were hard to reach are now being extracted. Russia, a Heartland country, now sees an opportunity of unlimited regional maritime access. With conditions changed from a heartland to a rimland, with its economic and strategic stakes at the Arctic, Russia now needs to turn itself to a regional maritime power with increased naval capacity like other Sea powers did. So far, it seems that Russia succeeded in achieving regional dominance and turning into a regional maritime power with unmatched advantages in factors like population, investment, planning, development, infrastructure, and military presence that are needed to support regional maritime traffic. The fact that Russia has capability of controlling

all chokepoints leading to the Arctic Ocean; and the fact that Russia having the biggest regional naval fleet power provides further upper hands for the Russian Arctic presence and its sea power, making it impossible to calculate the equation of Arctic geopolitics without mentioning Russian naval power.

To maintain its advantage, protect its claims and dominate the region, Russia should further expand regional economic, social, and military presence. However, Russia has limited capacity in achieving such advancement. Russia's weak economy and historical negligence and lack of investment on both navy and the Arctic since the fall of the USSR weakened the foundation for Arctic policy. Both external challenges like Western threats and sanctions, and internal issues, ranging from economy to environment, are challenging the future of Russian Arctic dominance. Whether Russia can and willing to afford necessary reforms and investments would be a crossroad for its future status as a regional player.

Once a barren territory, ignored by big powers is now a new field of a geopolitical great game with great risks of conflicts. Not only Russia has stakes in the Arctic development. Many Arctic states like the US, Canada, Denmark, and Norway are willing to exploit the resources, making claims to the region, disputing each other to gain more. Even some non-Arctic states like China is aiming to be actively involved in Arctic matters. Since the Antrim's article came out in 2010, the hope of peaceful cooperation and coexistence in the region has been shrunk. Clashing claims; security dilemma coming from deteriorated diplomatic relations; big-power conflicts; and possible provocation over navigational rights can cause serious instability for the regional security environment. With heightening tension between the West, Russia and China, any wrong move on the Arctic can trigger something too dreadful to imagine. Peace, stability, and cooperation in the region are necessary for region's stable and sustainable development. Whether Russia and the West would make necessary steps to deescalate and prevent possible regional

conflicts is questionable in current state. However, both sides should know that, like Antrim(2010) said, it's more beneficial to cooperate under the pretext of accepting each other's regional status than challenging each other.

Bibliography

- Journal Article & Academic Paper:

Antrim, C. L. 2010. “The next geographical pivot: The Russian Arctic in the twenty-first century”. *Naval War College Review* 63(3), 14-38.

Bekkers, E., Francois, J. F., & Rojas-Romagosa, H. 2017. “Melting ice caps and the economic impact of opening the Northern Sea Route”. *The Economic Journal* 128(610), 1095-1127.

Besley, T., Fetzer, T., & Mueller, H. 2012. “The Welfare Cost of Lawlessness: Evidence from Somali Piracy”. *Journal of the European Economic Association*, *13*(2), 203-239

Bjartnes, A., Johannessen, O. M., & Michelsen, L. P. 2019. “The Geopolitical Implications of Arctic Sea Ice Melt (20/2019)”. *The Norwegian Climate Foundation & Nansen Scientific Society Rapport* 2/2019.

Boulègue, M. 2019. “Russia’s Military Posture in the Arctic”. *Chatham House, London*, 49.

Buixadé Farré, A., Stephenson, S. R., Chen, L., Czub, M., Dai, Y., Demchev, D., & Kivekäs, N. 2014. “Commercial Arctic shipping through the Northeast Passage: Routes, Resources, Governance, Technology, and Infrastructure”. *Polar Geography*, 37(4), 298-324.

Dunlop, J. B. 2004. “Aleksandr Dugin's Foundations of Geopolitics”. *Demokratizatsiya* 12(1), 41-58.

Gray, C. S. 2015. “Nicholas John Spykman, the Balance of Power, and International Order”. *Journal of Strategic Studies* 38(6), 873-897.

Le Quéré, C., Jackson, R. B., Jones, M. W., Smith, A. J., Abernethy, S., Andrew, R. M., De-Gol, A. J., Willis, D. R., Shan, Y., Canadell, J. G., Friedlingstein, P., Creutzig, F., & Peters, G. P. 2020. “Temporary Reduction in Daily Global CO2 Emissions during the COVID-19 Forced Confinement”. *Nature Climate Change*, 10(7), 647-653

Liskova, E. A., Egorova, I. Y., Selyaninov, Y. O., Razheva, I. V., Gladkova, N. A., Toropova, N. N., ... & Blokhin, A. A. 2021. “Reindeer Anthrax in the Russian Arctic, 2016: Climatic Determinants of the Outbreak and Vaccination Effectiveness”. *Frontiers in Veterinary Science*, *8*.

Mackinder, H. J., 1904. “The Geographical Pivot of History”. *The Geographical Journal*, 23(4), p.421-437

Witze, A. 2020. “The Arctic is Burning like Never Before and That's Bad News for Climate Change”. *Nature*, *585*(7825), 336-338.

Rashid, A. 2009. “Transarctic Routes: Impact and Opportunities for Ports”. World Maritime University

- Book:

Bilington, J. H. 2018. *러시아 정체성: 포스트 소비에트의 이념과 정서.* Translated by 박선영. 서울: 그린비.

Brzezinski, Z. 1998. *The Grand Chessboard: American Primacy and Its Geostrategic Imperatives*. New York: Basic Books.

Depledge, D. 2019. "Geopower and Sea Ice: Encounters with the Geopolitical Stage." In *The Big Thaw: Policy, Governance, and Climate Change in the Circumpolar North*, edited by Zubrow, E. B., Meidinger, E., and K. D. Connolly, 181-200. Albany: SUNY Press.

Flint, C. 2012. *Introduction to Geopolitics*. London: Routledge.

Jervis, R. 2017. *Perception and Misperception in International Politics*. Princeton: Princeton University Press.

Kikkert, P., & Lackenbauer, P. W. 2019. “Canada’s Arctic and Northern Policy Framework: A Roadmap for the Future?” In *Redefining Arctic Security: Arctic Yearbook 2019*, edited by Heininen, L., H. Exner-Pirot, & J. Barnes, 332-39. Akureyri, Iceland: Arctic Portal

Kissinger, H. (2012). *Diplomacy*. New York: Simon & Schuster.

Mackinder, H. J. 1942. *Democratic Ideals and Reality: A study in the Politics of Reconstruction*. New York: H. Holt and Company.

Mahan, A. T. 1890. *The Influence of Sea Power upon History, 1660-1783*. Boston: Little, Brown & Company.

Mahan, A. T. 1905. *The Problem of Asia: Its Effect Upon International Politics*. Piscataway: Transaction Publishers.

Marshall, T. 2016. *지리의 힘*. Translated by 김미선. 서울: 사이.

Oreskes, N. 2007. “The Scientific Consensus on Climate Change. How Do We Know We’re Not Wrong” In *Climate Change: What It Means for Us, Our Children, and Our Grandchildren*, edited by J. F. DiMento & P. Doughman, 105-148. Boston: MIT Press.

Pastusiak, T. 2016. *The Northern Sea Route as a Shipping Lane: Expectations and Reality*. Basingstoke: Springer.

Seipel, H. 2018. *푸틴: 권력의 논리*. Translated by 김세나. 파주: 지식갤러리.

Spykman, N. J. 1944. The Geography of the Peace. New York: Harcourt, Brace & Company.

김명섭. 2008. “지정학”. In *정치학 이해의 길잡이 5: 국제정치와 안보*, edited by 한국정치학회, 72-104. 파주: 법문사.

김영석. 2017. *국제법*. 서울: 박영사.

김정건, 장신, 이재곤 & 박덕영. 2010. *국제법*. 서울: 박영사.

박재영. 2016. *국제환경정치론*. 파주: 법문사.

박창희. 2013. *군사전략론*. 서울: 플래닛미디어

- Government/International Organization’s Publication:

Althingi of Iceland. 2011. “Parliamentary Resolution on Iceland's Arctic Policy”. *Approved by Althingi at the 139th legislative session*, March. 28.

Brander, N. & E. Borg. 2021. *Finland's Strategy for Arctic Policy*. Helsinki: Finnish Government.

Connolly, G. E. 2017. *NATO and Security in the Arctic*. NATO Parliamentary Assembly.

Department of the Navy. 2021. *A Blue Arctic: A Strategic Blueprint for the Arctic*. Washington D.C.: US National Ice Center.

House of Commons Defence Committee. *On Thin Ice: UK Defence in the Arctic*. London: House of Commons, Twelfth Report of Session 2017–19. 2018.

HM Government. 2018. *Beyond the Ice: UK Policy Towards the Arctic*. London: Foreign and Commonwealth Office

IPCC, 2021: Summary for Policymakers. In: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Masson-Delmotte, V., P. Zhai, A. Pirani, S.L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M.I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T.K. Maycock, T. Waterfield, O. Yelekçi, R. Yu, and B. Zhou (eds.)]. In Press

Kingdom of Denmark Ministry of Foreign Affairs. 2011. *Kingdom of Denmark Strategy for the Arctic 2011–2020*. Copenhagen: Ministry of Foreign Affairs.

Linde, A. 2020. *Sweden's Strategy for the Arctic Region*. Stockholm: Government Offices of Sweden.

Norwegian Ministries. 2017. *Norway's Arctic Strategy - between geopolitics and social development* (H-2402E). Norwegian Ministry of Foreign Affairs.

Office of Naval Intelligence. 2015. *The Russian Navy. A Historic Transition*. US Department of Defense

Office of the Under Secretary of Defense for Policy. 2019. *Report to Congress: Department of Defense Arctic Strategy*. Washington D.C.: US Department of Defense

President of the Russian Federation. 2015. *МОРСКАЯ ДОКТРИНА РОССИЙСКОЙ ФЕДЕРАЦИИ*. The Presidential Executive Office of the Russian Federation.

President of the Russian Federation. 2017. *Утверждении Основ государственной политики Российской Федерации в области военно-морской деятельности на период до 2030 года* (No.327). The Presidential Executive Office of the Russian Federation.

UN General Assembly. 1982. *Convention on the Law of the Sea*

World Meteorological Organization. 1979. *Declaration of the World Climate Conference* (IOC/SAB-IV/INF.3). Secretariat to World Meteorological Organization.

World Meteorological Organization. 2021. *State of the Global Climate 2020* (WMO-No. 1264)

World Meteorological Organization. 2021. “2020 State of Climate Services report: Risk Information and Early Warning Systems” In *EGU General Assembly Conference Abstracts* (pp. EGU21-74).

- News Article:

Baccaro, S., & Descamps, P. 2020, May. “The Era of the Icebreaker”. *Le Monde Diplomatique*, 20.05, 13-15.

Amies, N. 2009. “Shipping Insurance Skyrockets as Pirate Attacks Increase”. Deutsche Welle, 2009, May 27. Accessed November 30, 2021. https://www.dw.com/en/shipping-insurance-sky-rockets-as-pirate-attacks-increase/a-4278642

BBC News. 2019, August 23. “Russia’s Floating Nuclear Power Station Sets Sail”. BBC News, August 23. Accessed November 30, 2021. https://www.bbc.com/news/world-europe-49446235

BBC News. 2020. “Arctic Circle Oil Spill: Russian Prosecutors Order Checks at Permafrost Sites”. BBC News, June 5. Accessed November 30, 2021. https://www.bbc.com/news/world-europe-52941845

Breum, M. 2021. “Greenland’s New Leadership Will Be Challenged by a Push for Faster Independence”. ArcticToday, April 13. Accessed November 30, 2021. https://www.arctictoday.com/greenlands-new-leadership-will-be-challenged-by-a-push-for-faster-independence/

Buckholz, Q. 2016. “Russia and Climate Change: A Looming Threat”. The Diplomat, February 4. Accessed November 30, 2021. https://thediplomat.com/2016/02/russia-and-climate-change-a-looming-threat/

Dall, A. 2021. "Múte B. Egede: Tre Lande Danser Tango Om En Fælles Strategi for Arktis." KNR, June 10. Accessed November 30, 2021. https://knr.gl/da/nyheder/m%C3%BAte-b-egede-tre-lande-danser-tango-om-en-f%C3%A6lles-strategi-arktis.

Johnson, S. 2019. “Pompeo: Russia is "Aggressive" in Arctic, China's Work There Also Needs Watching”. Reuters, May 6. Accessed November 30, 2021. https://www.reuters.com/article/us-finland-arctic-council-idUSKCN1SC1AY

Lam, H. 2021. “Russia Spends Money to Reduce Costs for the North Sea Route”. ElectroDealPro, April 3. Accessed November 30, 2021. https://electrodealpro.com/russia-spends-money-to-reduce-costs-for-the-north-sea-route/

Medred, C. 2016. “Expert Predicts Ice-free Arctic by 2020 as UN Releases Climate Report”. Anchorage Daily News, September 28. Accessed November 30, 2021. https://www.adn.com/Arctic/article/expert-predicts-ice-free-Arctic-2020-same-day-un-releases-climate-report/2014/11/02/

Nilsen, T. 2017. “Russian Navy Gets Go-ahead for Design of New Nuclear-powered Destroyers”. Barents Observer, August 28. Accessed November 30, 2021. https://thebarentsobserver.com/en/security/2017/08/russian-navy-gets-go-ahead-design-new-nuclear-powered-destroyers

Nilsen, T. 2020. “Russian Anti-sub-Aircraft on Combat Training Further South in the GIUK Gap than Normal”. Barents Observer, February 29. Accessed November 30, 2021. https://thebarentsobserver.com/en/security/2020/02/russian-anti-sub-aircraft-combat-training-further-south-normal-over-norwegian-sea

Reuters. 2020. “Russia, Hit by Coronavirus Crisis, Considers Military Spending Cuts”. Reuters, September 8. Accessed November 30, 2021. https://uk.reuters.com/article/uk-russia-economy-military-idUKKBN25Z23Q

RFE/RL. 2021. “Blinken Warns of Militarization of Arctic Ahead of Key Meetings in Europe”. RFE/RL, May 18. Accessed November 30, 2021. https://www.rferl.org/a/blinken-arctic/31261373.html

Roth, A. 2021. “Russia Forest Fire Damage Worst Since Records Began, Says Greenpeace”. The Guardian, September 23. Accessed November 30, 2021.

https://www.theguardian.com/world/2021/sep/22/russia-forest-fire-damage-worst-since-records-began-says-greenpeace

Siebold, S. 2021. “EU to Seek Ban on Oil and Gas Exploration in the Arctic”. Reuters, October 13. Accessed November 30, 2021. https://www.reuters.com/business/environment/eu-seek-ban-oil-gas-exploration-arctic-2021-10-13/

Staalesen, A. 2021. “This Russian Arctic Coast has Planet's Quickest Warming”. Barents Observer, March 29. https://thebarentsobserver.com/en/climate-crisis/2021/03/unprecedented-arctic-warming-opens-gates-northern-sea-route

Stolyarov, G. 2021. “Russia Aims for Year-round Shipping via Northern Sea Route in 2022 or 2023”. Reuters, October 11. Accessed November 30, 2021. https://www.reuters.com/world/europe/russia-aims-year-round-shipping-via-northern-sea-route-2022-or-2023-2021-10-11/

The Guardian. 2018. “Russia and Norway Resolve Arctic Border Dispute”. The Guardian, February 14. Accessed November 30, 2021. https://www.theguardian.com/world/2010/sep/15/russia-norway-Arctic-border-dispute

The Maritime Executive. 2019. “Nike Takes Arctic Shipping Pledge”. The Maritime Executive, October 26. Accessed November 30, 2021. https://www.maritime-executive.com/article/nike-takes-arctic-shipping-pledge

The Siberian Times. 2016. “40 Now Hospitalised After Anthrax Outbreak in Yamal, more than Half are Children”. The Siberian Times, July 30. Accessed November 30, 2021. https://siberiantimes.com/other/others/news/n0691-40-now-hospitalised-after-anthrax-outbreak-in-yamal-more-than-half-are-children/

Trevithick, J. 2020. “Russia Has Abandoned its Massive Nuclear Destroyer and Supersized Frigate Programs. The Drive, April 21. Accessed November 30, 2021. https://www.thedrive.com/the-war-zone/33099/russia-has-abandoned-its-massive-nuclear-destroyer-and-supersized-frigate-programs

Troianovski, A., Mooney, C., & Chavez, M. R. 2019. “Radical Warming in Siberia Leaves Millions on Unstable Ground”. The Washington Post, October 3. Accessed November 30, 2021. https://www.washingtonpost.com/graphics/2019/national/climate-environment/climate-change-siberia/

정인환. 2013. “영유권 분쟁 뜨거워진 북극”. 한겨레, December 11. Accessed November 30, 2021. https://www.hani.co.kr/arti/international/international_general/614990.html

한겨레. 2019. “푸틴 “한미일 군사동맹 비건설적…러-중 군사동맹은 없을 것””. 한겨레, December 20. Accessed November 30, 2021. https://www.hani.co.kr/arti/international/international_general/921539.html

- Webpage:

Batashvili, D. 2019. "Russian Military Forces: Interactive Map." Accessed November 30, 2021. https://www.gfsis.org/maps/russian-military-forces.

Busch, G. K. 2017. “IRIA Report - Russia’s New Arctic Military Bases”. Accessed November 30, 2021. https://ir-ia.com/IRIA-Russia%E2%80%99s-New-Arctic-Military-Bases.html

Editors of Encyclopedia Britannica. 2020. “History of Russia”. Accessed

November 30, 2021. https://www.britannica.com/place/Russia/History

European Commission. 2021. “A Stronger EU Engagement for a Greener, Peaceful and Prosperous Arctic”. Accessed November 30, 2021. https://ec.europa.eu/commission/presscorner/detail/en/ip_21_5214

European Commission. 2021. “Questions and Answers on the EU's Arctic Strategy”. Accessed November 30, 2021. https://ec.europa.eu/commission/presscorner/detail/en/qanda_21_5164

Gibbens, S. 2017. “Siberia's Growing 'Doorway to Hell' Offers Clues on Climate Change”. Accessed November 30, 2021. https://www.nationalgeographic.com/science/article/siberia-batagiaka-crater-climate-change

Government of Iceland. 2021. "Signing of a Joint Declaration on Increased Co-operation Between Iceland and Greenland." Accessed September 30, 2021. https://www.government.is/diplomatic-missions/embassy-article/2021/09/23/Signing-of-a-joint-declaration-on-increased-co-operation-between-Iceland-and-Greenland/.

Götz, N. 2019. "Neutrality and the Nordic Countries." Accessed September 30, 2021. https://nordics.info/show/artikel/neutrality.

Harmer, C. 2012. “Russian Naval Base Tartus”. Accessed November 30, 2021. http://www.understandingwar.org/sites/default/files/Backgrounder_Russian_NavalBaseTartus.pdf

Icelandic Coast Guard. 2021. “Search and Rescue (SAR)”. Accessed November 30, 2021. https://www.lhg.is/english/search-and-rescue/

Icelandic Coast Guard. 2021. “Security and Defence”. Accessed November 30, 2021. https://www.lhg.is/english/varnarmal/

Melino, M., & Conley, H. A. 2020. “The Ice Curtain: Russia’s Arctic Military Presence”. Accessed November 30, 2021. https://www.csis.org/features/ice-curtain-russias-Arctic-military-presence

NASA. 2021. “Climate Change Evidence: How Do We Know?” Accessed November 30, 2021. https://climate.nasa.gov/evidence/

Parker, V. T. 2017. “Tundra - Effects of Human Activities and Climate Change”. Accessed November 30, 2021. https://www.britannica.com/science/tundra/Effects-of-human-activities-and-climate-change

Ramani, S. 2021. “Sudan-Russia Relations After the October Coup: The View from Moscow”. Accessed November 30, 2021. https://www.mei.edu/publications/sudan-russia-relations-after-october-coup-view-moscow

RussianShips. 2021. “Russian Navy 2021: List of Active Russian Navy Ships and Submarines”. Accessed November 30, 2021. https://russianships.info/eng/today/

Soylent Communications. 2019. “Nicholas J. Spykman”. Accessed November 30, 2021. https://www.nndb.com/people/580/000360497/

Stroeve, J. C. 2019. “When Will All the Ice in the Arctic be Gone?”. Accessed November 30, 2021. https://www.scientificamerican.com/article/when-will-all-the-ice-in-the-Arctic-be-gone/

The State Council of the People's Republic of China. 2018. “Full Text: China’s

Arctic Policy". Accessed November 30, 2021. https://english.www.gov.cn/archive/white_paper/2018/01/26/content_281476026660336.htm

United States Coast Guard. 2021. "District 17". Accessed November 30, 2021. https://www.pacificarea.uscg.mil/Our-Organization/District-17/

Wenger, M. 2021. "A Own Coast Guard for Greenland?" Accessed November 30, 2021. https://polarjournal.ch/en/2021/05/25/a-own-coast-guard-for-greenland/.

Wikipedia. 2006. "Freedom of Navigation". Accessed November 17, 2020. https://en.wikipedia.org/wiki/Freedom_of_navigation#FONOPs_in_the_South_China_Sea

Wikipedia. 2014. "1988 Black Sea Bumping Incident". Accessed November 17, 2020. https://en.wikipedia.org/wiki/1988_Black_Sea_bumping_incident

Wikipedia. 2019. "East Siberian Lowland". Accessed November 30, 2021. https://en.wikipedia.org/wiki/East_Siberian_Lowland

국토환경정보센터. 2020. "기후변화영향". Accessed November 30, 2021. https://www.neins.go.kr/etr/climatechange/doc04a.asp

노진선. 2020. "2020년 러시아 가스산업의 변화: 수출 감소 후 생존 위한 탈탄소 추진". Accessed November 30, 2021. https://snuac.snu.ac.kr/ca/?p=2858

- Video:

Al Jazeera. 2019. "Peace and War: The View from Russia" | Featured Doc [Video].

Accessed November 30, 2021. https://www.youtube.com/watch?v=seOq1dweU2U

BBC Ideas. 2019. “The Blueprint for World Domination that Spooked America” [Video]. Accessed November 30, 2021. https://www.bbc.co.uk/ideas/videos/the-blueprint-for-world-domination-that-spooked-am/p07087xd

BBC Ideas. 2019. “The Heartland Theory - Part 2” [Video]. Accessed November 30, 2021. https://www.bbc.co.uk/ideas/videos/the-heartland-theory---part-two/p071z6h1

Kremlin. 2017. “The Arctic: Territory of Dialogue International Forum” [Video]. Accessed November 30, 2021. https://www.youtube.com/watch?v=9ynTSFYTPgc

Kremlin. 2019. “Plenary Session of the International Arctic Forum” [Video]. Accessed November 30, 2021. https://www.youtube.com/watch?v=Z_iBKQda6dU

- Others:

S. HRG 111-259. Strategic Importance of the Arctic in U.S. Policy: Hearing Before a Subcommittee of the Committee on Appropriations of the US Senate, 111th Cong. (2009)

- Picture:

Bouvin, M. 2019. “What Holds Russia Back?” Accessed November 30, 2021. https://medium.com/@mbouvin/what-holds-russia-back-7c717b8ccdbd

Shian, C. 2016. “Geopolitical Theories Driving Proxy Wars during the Cold War”. Accessed November 30, 2021. https://coldwargeopolitics.wordpress.com/2016/03/12/geopolitical-theories-driving-proxy-wars-during-the-cold-war/

The Albert Team. 2020. “Human Geography”. Accessed November 30, 2021. https://www.albert.io/blog/heartland-theory-ap-human-geography-crash-course/

The Economist. 2014. “Frozen Conflict”. Accessed November 30, 2021. https://www.economist.com/international/2014/12/17/frozen-conflict

Unknown. 2016. “American Imperialism 1890-1913”. Salvador Dali Blog, March 2. Accessed November 30, 2021. https://salvadordaliscpa.blogspot.com/2016/03/american-imperialism-1890-1913.html

Wikipedia. 2004. “Northern Sea Route”. Accessed November 16, 2021. https://en.wikipedia.org/wiki/Northern_Sea_Route

Wikipedia. 2006. “Territorial Evolution of Russia”. Accessed November 16, 2021. https://en.wikipedia.org/wiki/Territorial_evolution_of_Russia

Wikipedia. 2008. “Enlargement of NATO”. Accessed November 16, 2021. https://en.wikipedia.org/wiki/Enlargement_of_NATO

한국어 초록

본 논문은 기후변화가 북극권의 지정학적 상황에 미치는 영향을 파악하는 것을 목적으로 하였다. 본 연구는 고전지정학 이론이 공통적으로 지적하는 기존의 북극해의 결빙과 혹한으로 인한 해운교통 및 육상접근의 불리점이 기후변화로 인해 해소되고 있음에 주목하여 이로 인해 초래되는 고전지정학 이론의 학술 및 지역전략담론에서의 위상변화와 북극권 국가의 지정학적 현상변화에 대해 탐구하였다. 논문을 작성함에 있어 본 연구는 질적연구방법을 선택해 기후변화에 대한 자료를 수집하는 한편 역내 지정학 및 국제관계와 관련하여 기존 문헌과 사례, 역내 국가간 비교연구를 실시하였다.

본 연구는 기후변화로 인한 북극권 해빙이 북극권 및 유라시아 북부에 대한 고전지정학적 관점의 위상에 부정적 변화를 초래할 것으로 분석하나 현안분석기재 측면에서의 고전지정학 이론의 가치 그 자체가 크게 훼손되지는 않을 것으로 판단한다. 또 북극권 해빙이 러시아가 기존의 북극 빙하와 외세의 봉쇄정책으로 인해 형성된 해양으로부터 고립된 하트랜드(Heartland) 내륙국이라는 지정학적 정체성에서 탈피하도록 할 충분한 전략적 이해와 유인을 제공하며 러시아가 실제로 관련된 현상변화를 분명히 인식하고 지전략 설정과 정책집행을 통해 대응하고 있음을 확인하였다. 여기에 더해 전략적 역량 및 기타 지전략 요소를 다른 역내국가들과 비교하여 러시아가 북극 지역에서 전략적

비교우위를 가지고 있음을 확인하였다.

한편 본 연구는 북극의 향후 안보상황과 관련하여 비록 북극 이사회 등의 역내 협력을 위한 국제기구 및 제도와 평화적 분쟁해결 사례 등이 존재하지만 북극 개방의 안보적 양면성, 해양법 해석 측면에서 북극권의 영유권 분쟁과 항행의 자유 문제, 2014년 우크라이나 사태 이후 서방국가와 러시아의 관계악화로 인한 안보 딜레마가 증가 등 부정적 요인 때문에 향후 역내 분쟁과 안보불안의 가능성이 있을 것으로 예측한다. 또한 러시아가 현재와 같은 역내 우위를 계속 유지하려면 기후변화로 인한 역내 인간안보문제의 대두와 자체 역량 및 외부의 도전 양면에서 제기되는 문제들을 해소할 수 있어야 할 것이라고 지적한다.

키워드: 기후변화, 북극, 북방항로, 러시아, 지정학, 해양력
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