Climate Change and New Approaches for Securing The Arctic
The Case Study of Canada

Runar Jesse Gairdner Tuft

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Institutt for sammenliknende politikk
Universitetet i Bergen

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Abbreviations

AC - Arctic Council	**NRCan** - Natural Resources Canada
Arctic 5 - Canada, Norway, Russia, USA, Denmark	**NORAD** - North American Aerospace Defense Command
ASFRT - Arctic Security Forces Roundtable	**NORDERG** - Arctic Canada Traffic Zone
AWPPA - Arctic Waters Pollution Prevention Act	**NSR** - Northern Sea Route (Russia)
BRI - Chinese Belt and Road Initiative	**NWP** - North-western Passage (Canada)
CA - The Canadian Army	**Radarsat** - Canadian Space Agency Earth Observation Satellite
CCCR - Canada Climate Change Report	**RCAF** - The Royal Canadian Air Force
CCP - Chinese Communist Party	**RCMP** - Royal Canadian Mounted Police
D.E.W. - Distant Early Warning system	**RCN** - The Royal Canadian Navy
EEA - European Economic Area	**SAR** - Search and Rescue
EEZ Exclusive Economic Zone	**SDG** - Sustainable Development Goals
EU - European Union	**SOF** - Special Forces Operations Command
GHG - Greenhouse Gases	**UN** - United Nations
ILO - Indigenous and Tribal Peoples Convention	**UNCLCS** - United Nations Commission on the Limits of the Continental Shelf
IPCC - Intergovernmental Panel on Climate Change	**UNCLOS** - United Nations Convention on the Law of the Sea
LNG - Liquified Natural Gas	**UNFCCC** - United Nations Framework on Climate Change Convention
MECC - Ministry of Environment and Climate Change (Canada)	**UNEP** - United Nations Environment Programme
NATO - North Atlantic Treaty Organisation	**WMO** - World Meteorological Organisation

Abstract

This thesis explores the relationship between climate change and security theory, using the Canadian Arctic as a case study. The thesis begins with a research hypothesis; that existing theoretical models are inadequate to conceptualise, measure and address new security dynamics that climate change may be creating in the Arctic. It then sets out to answer the question, whether *climate change is creating new security dynamics in the Canadian Arctic*. Using a case study methodology, and based on a review of traditional and critical International Relations theory, the climate change assessments of the International Panel on Climate Change and the Canadian Government, and of existing Canadian security policy, the thesis comes to conclusions on the ways climate change is affecting security dynamics in the Arctic. It calls for a conceptual broadening for securitising the Arctic, to include referent objects - what is to be secured - in peoples, their communities and in the Natural World. It finishes with suggestions on how theory can be improved to incorporate these referent objects.

Dedication

This thesis is dedicated to my mother, Eva Irene Tuft, my father David Gairdner, and to my family of Scottish, French, Dene, Cree and Métis ancestors, who lived and thrived in the sub-Arctic region of Canada's Northwest Territory.[1]

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[1] Pictured 2nd from the left is my Great (2x) Grandmother, Marguerite Bouvier, born in 1852 at Fort Simpson, in what is today Canada's Northwest Territory, of Metis heritage (French, Cree and Dene). She married my Great Grandfather (2x), George Wishart Gairdner, born to Scottish parents in colonial India, in 1874 at Fort Providence, Northwest Territory. Her mother, my Great (x3) Grandmother, Catherine Beaulieu (1836-1911), is pictured to the far right. Her Cree name was "Ehtsu Naats'I", meaning "Grandmother of the winds". Photograph taken at Fort Providence, in the Northwest Territory, date unknown (est. late 1800s).

1. Introduction

1.1 Conceptualising the Future of Security in the Canadian Arctic

1.1.1 An Arctic Naval Battle

On September 5, 1697, the French man-of-war Pelican engaged three British ships, near the Hudson Bay Company trading post at York Factory. The "Battle of Hudson Bay" is still considered the largest naval engagement ever to occur in the Canadian Arctic. At stake was control over the lucrative sub-Arctic fur trade, which extended from York Factory into a vast area of what is now northern Quebec and Ontario, Manitoba, Saskatchewan and the Nunavut Territory.

The Pelican, commanded by Pierre Le Moyne d' Iberville, was the lead French vessel in a fleet of four ships, dispatched to gain control of the Hudson Bay territory. The Pelican was separated from the rest of the French fleet by heavy fog. As the fog lifted, the Pelican found itself confronting three British Frigates; the Hampshire, the Royal Hudson's Bay and the Dering. With nowhere to run, d' Iberville chose to engage the British head on. Over a two-and-a-half-hour running battle, the Pelican sank the Hampshire. The badly damaged Royal Hudson's Bay struck its colours to Pelican and the Dering broke off to escape. With the arrival of the remaining French ships, d' Iberville took York Factory by land on 13 September 1697.[2]

The Battle of Hudson Bay was a single encounter in a century-long colonial struggle for control of Canada's northern territories. In context, English and the French possessions in North America were secondary and distant theatres of military operation for European

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[2] Compiled from *Canadian* Encyclopedia (2006) and *Hudson Bay Heritage Foundation*. The Pelican was heavily damaged. With holes beneath its water line, the ship had to be abandoned and later sunk. The engraving is of the *Pélican* sinking after the Battle of Hudson's Bay (1697). From the *Histoire de l'Amérique septentrionale* by Claude-Charles Bacqueville de La Potherie, Paris, 1722.

conflicts. The French action in Hudson Bay was linked to King William's War, also known as the First French and Indian War (1688-1699), itself a proxy theatre for the War of the Spanish Succession (1701-1713). When York Factory was returned to the British in 1713, it was under terms of the Treaty of Utrecht (1713-1714). France agreed to restore the entire drainage basin of Hudson Bay to Great Britain, and to compensate the Hudson's Bay Company for losses incurred during the war. The battle at York Factory, therefore, was set in this broader struggle for North America and Europe, and the eastern Arctic of present-day Canada was surrendered to Britain as a French concession for peace in Europe.

1.1.2 A History of Violence in the Arctic Region

The Battle of Hudson Bay is the evidence of a historical truth. "Violent conflict in the Arctic is nothing new; in fact, the polar North has long been a battleground" (Ash 2016). Since the colonial period, security dynamics in the Canadian Arctic have shown national, Arctic regional and geopolitical dimensions. Colonial violence played a determining role in the formation of a Canadian state that included Arctic territory, as much in suppressing the claims of competitor states as those of Canada's First Nations indigenous peoples. The prize has consistently been the access to natural resources, freedom of transit through the Arctic (waterways and now airspace) and the use of Arctic territory as a staging point or secondary theatre to conflicts elsewhere.

In more recent history, the Canadian Arctic was a secondary theatre of great power competition during the Cold War. The wider Arctic was considered one of the "one of the most militarised regions of the world" (Hubert 2019). Geography and technology compelled the United States and Russia to forward deploy their nuclear weapons, defensive systems, and additional military resources for the protection of these assets (2019). Hubert observes that Arctics geopolitical importance was "not about conflict *over* the Arctic but rather the use of military force *from* the Arctic" (2019).While the Russian nuclear deterrent was, and remains predominantly located in the Arctic, the United States developed missile systems and long-range bombers that would transit the Arctic enroute to their targets; while also deploying an advanced early warning system alongside Canada through North American Areospace Defence Command (NORAD) cooperation with the United States.

A new security and regional governance paradigm emerged at the end of the Cold War: Arctic Exceptionalism, or the Arctic region conceptualised as a physical and political space existing outside of the geopolitical dynamics, and unaffected by those dynamics. The idea of exceptionalism derived from the factors that made the Arctic unique.

A reduction of tensions between the USSR (Russia) and the United States lowered the strategic importance of the Arctic. The immediate post-Cold War period was also characterised by relative geopolitical stability - a weakened Russian and China yet to emerge . Three decades of relative stability in the Arctic made it possible to "go beyond state-centric and military-oriented definitions of security to focus on security with people and communities center stage" (Klimenko 2019, 1). In this space, the eight Arctic nations developed a regional governance model, in the Arctic Council, that emphasised cooperation on matters related to human and economic development, the environment and climate change, and science. Security matters were explicitly placed outside of the Arctic Council's mandate and deliberations (Ottawa Declaration 1996, Art 1).[3]

Importantly, the governance assumption underlying the founding Ottawa Declaration was that physical conditions rendered inter-state competition in the Arctic to be untenable, and that cooperation was the preferred option (Arctic Institute 2019). Simply, the region's climate and geography were too hostile for direct and large-scale military confrontation, industrial resource extraction or across-region transit. Instead, Arctic nations had a vested interest in cooperation.

Exceptionalism provided a governance, security and development model that was regionally located, with the Arctic conceived as one "security complex", with the region being "securitised in a non-traditional manner reflecting circumpolar geographic realities". It recognised that some interests of Arctic states and societies were interdependent, best served by multilateral action and construction of regional governance, reinforced by international law and norms. There would be no "Ice Curtain". Rather, a soft power approach was accepted by the Arctic Nations, and by non-Arctic states seeking an Arctic identity (Lanteigne 2016, 1- 4).

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[3] Article 1 of the Ottawa Declaration (1996) states that the Arctic Council "should not deal with matters related to military security".

1.1.2 A New Security Variables

The "Exceptionalism" model is credited with keeping the Arctic at peace, in relative stability and promoting effective development, cultural and scientific cooperation, despite changes in regional conditions and the shifting geopolitical dynamics of recent decades (Arctic Institute 2019). It is also a historical aberration, functioning almost in defiance of geopolitical dynamics that predate the Battle of Hudson Bay.

Two variables are now re-framing those security dynamics. First is the re-emergence of geopolitics and great power rivalry. Russia was a broken country by the end of the Cold War, too weak to challenge the United States and its allies. The ideological competition of the cold war was replaced by a contest between governance and economic models; liberal, hybrid and illiberal politics. China emerged as a regional hegemony, with global ambitions.

The second variable is Climate Change. The Arctic is warming at a rate of two times or greater than the global average (IPCC 2021, 41; IPCC 2019, 215; CCCR 2019, 44). Warming is physically transforming the Arctic region, and opening the region to increased commercial, civilian and military activity, changing the interests and strategic positioning of Arctic States and drawing in Non-Arctic and Near-Arctic States. These changes also affect the lives of persons and communities in the North, and the conditions for all forms of life in the Natural World. Climate change, therefore, is melting the fundamental governing assumptions of the exceptionalist , – that multilateralism was the only viable option for a frozen region – at the same geopolitical escalation.

1.2 Emerging Narratives on the Future of Security in the Arctic

There are at least two narratives about the security future of the Arctic. They are not mutually exclusive and could arguably evolve at the same time. The choice of narrative has significant consequences for Canada's security policy in the region.

The first security narrative positions the Arctic as a site of renewed great-power rivalry and geopolitical competition. It assumes the end of Arctic Exceptionalism and either the beginning of a new Cold War, or resumption of the old one. Hubert observes that:

"Since the Ukrainian crisis of 2014, there have been growing questions as to whether or not this cooperative environment will be preserved or if the growing

tensions between Russia and the West will result in a "new" Cold War in the Arctic. The reality is that there is no new Cold War. Likewise, Arctic exceptionalism never meant the underlying security requirements of the two sides ever really dissipated. Instead what is happening is a renewal of the Cold War *with the Arctic as a core location of competition*" (2019, emphasis added).

The fundamental historical difference, between the Cold War and the present, is that warming in the Arctic changes the physical conditions for competition. The Arctic is no longer a *secondary* theatre of military operations, or a staging area for conflict elsewhere. Rather, climate change is transforming the Arctic into a *primary* or *core* location for competition, between a growing number of state and non-state actors. Conflict could occur *in* the Arctic, rather than force *from* the Arctic being directed elsewhere.

Driven by the premise that climate change opens the Arctic for economic development, particularly resource extraction and across-regional transit by inland waterways, the "end of exceptionalism" assumes the region's integration into a larger geopolitical calculus. It focuses on the interests of nation states, most of them from far outside the Arctic, escalating competition and the power dynamics between them. Military power will be a crucial means through which power is exercised, noting that contemporary hybrid war strategies also deploy non-military means to achieve power objectives. The "end of exceptionalism" scenario is consistent with a Neo-Realist approach to security issues.

The second narrative expands the concept of security beyond the nation state, reflecting both the unique character of the Arctic region and the effects of a changing climate. It is still concerned with the security of nation states, but equally with the security of human beings, as individuals and in their collective, and the security of the Natural World, being non-human life forms and the environmental systems on which all life finally depends. The existence of humans and of the Natural World are a precondition for the existence of states.

This security future calls for a policy framework that deepens regional exceptionalism, adapted to manage the Arctic's opening. It broadens the concept of security beyond states and power, to include other "referent objects" – those things that have vital importance and are to be secured. As Kalliojärvi writes, this approach assumes that "climate change is characterised

by a new kind of uncertainty and complexity that cannot be successfully secured against through military action…" (2019, 15).

In this framing "security is no longer primarily about geographical society-based threats…but increasingly characterised by a borderless society-based narrative of vulnerability and the stabilisation of technical and societal systems." (2019, 15). A state and power-focused approach to security, therefore, is not effective for a climate-transformed Arctic. Rather, cooperation must deepen. This scenario is consistent with *Critical Security* theory, in particular theory streams that address *Human Security* and *Environmental Security*. They tend not to include the military dimension of security, beyond cooperative means to reduce tension.

1.3 Organisation of "New Approaches to Securing the Canadian Arctic"

This thesis is organised as a case study of security dynamics in a climatically and physically transformed Arctic, focusing on Canada. *Chapter 2* presents the Research Framework. As the Primary Research Question, the thesis asked whether "climate change is creating new security dynamics in the Canadian Arctic?" Chapter 2 proceeds to set out the means for an answer, establishing the scope of study, the research problem, primary and secondary research questions and hypotheses, and the methodology to be used. The Chapter concludes by presenting a rationale for the choice of using Canada as a case study, based on its unique characteristics and Arctic and Northern policy. These incentivise a multidimensional approach to security, in which evidence of new approaches to securing the Arctic can emerge.

Chapter 3 provides the essential reference and contextual information on the Arctic region, in its scientific, demographic and cultural terms, and historical background to Canada's claim to Arctic sovereignty. The chapter concludes with a review of the contemporary model of Arctic governance, through the Arctic Council, and brief introduction to the non-Arctic states aspiring to influence the region's future development.

Chapter 4 introduces Climate Change and its unique effects in the Arctic region. The chapter is an evidence base for understanding changes in the Arctic's physicality that drive new security dynamics, and the impact of changes on peoples and the natural world. The Chapter uses the assessment conclusions of the United Nations' *Intergovernmental Panel on Climate Change* (IPCC) and the *United Nations Environment Programme* (UNEP), with the

official Canadian assessment produced by the *National Resources Canada* (NRCan). These are official and *high confidence* sources, based in science and broadly accepted by the international community and/or the Government of Canada. In this regard, they are also a conversative minimum expression of the changes occurring.

Chapter 5 explores the theoretical options for approaching security issues in a climate-transformed Arctic. The Chapter follows two broad bodies of theory, and narratives for a future Arctic associated with them; Neo-Realism and Critical Security Theory (Human Security, with references to Environmental Security). Attention is given to the scope of what is to be secured - the "referent objectives" of security - the relationship of the between candidate referent objects, and the idea of "common security", that the security states, people and the environment are intertwined and mutually dependent. The discussion of theory in Chapter 5 provides a framework for consideration of Canada's approach to securing the Arctic, in Chapters 6 and 7.

Chapter 6 summarises the Canada case study evidence. The chapter summarises how threats to Canada's security - traditional and non-traditional - are expressed in the literature, how the Canadian government and stakeholders in society also assess those threats, then looks at Canada's policy response. The Chapter draws on official policy documentation for climate change and impact assessment, defence security and human security, to describe the overall policy approach, and to assess against the perceived threats.

Chapter 7 is the conclusion and contribution to theory building for new approaches to Arctic security. The thesis responds by blending different theoretical approaches to the concept of security, into a multidimensional framework that incorporates military and human, and security in the natural world, of all living things and the systems that support them. The theory allows for consideration of security dimensions in each of these dimensions, but also the interaction between them. It leads to a coherent or "whole of government/whole of state" approach to Arctic Security, which combines different instruments. A difficult underlying assumption is that state actors are able to redirect their instinct for interest-based power competition, within a cooperative framework.

2. Research Framework and Methodology

2.1 Research Problem, Scope and Questions

> *It is virtually certain that the Arctic will continue to warm more than global surface temperature, with high confidence above two times the rate of global warming.*
> *(IPPC 2021, 41)*

Chapter 2 sets out the critical issues, research framework and methodology for *New Approaches to Securing the Canadian Arctic.* The Chapter begins by identifying the critical issues that will frame the research, and moves then to present a *research problem, primary and secondary questions* and the underlying *hypotheses*. These are followed with a review of the supporting methodology, focusing on the use of a case study approach. The Chapter concludes with the rationale and criteria for selecting Canada as the case study country. It argues that Canada is uniquely suited, for reasons of history, geography and demographics, to test the research hypotheses.

2.1.1 Finding New Ways to Conceptualise Security in the Canadian Arctic

The purpose of *New Approaches to Securing the Canadian Arctic* is to conceptualise a theoretical model that widens the "referent objects" for Arctic Security, beyond the concern for states and power to consider other referent objects that must be secured as climate change transforms the region. In this process, the meaning of security must be questioned, and reconstructed to align with existing threats that are multiplied by climate change or future threats that climate change will generate, many of which cannot not be predicted. The focus will be on Canada's Arctic and Northern Policy, as a country case study. However, the thesis will also consider the broader role of Arctic and Non-Arctic nations aspiring to influence the region, to reach a conclusion on different security hypotheses.

Using a qualitative case study method, the thesis will analyse emerging Arctic security issues in the presence of climate change. Attention will be given to the relationship between climate change and security, Canada's policy response to changing security dynamics, including as policy shapes Canada's interaction with other security actors in the region.

Climate acts outside the boundaries of traditional International Relations and Security theory. It has the possibility of generating or escalating conflict between states. Yet at the same time, Climate Change is an existential threat to all states, to the wellbeing of human beings and to the natural world. The effects of changes cannot be reversed or mitigated by the actions of a single state, but only states acting together. What is to be secured, therefore, must be larger than any state. An approach to the relationship between climate change and Arctic security should, therefore, be multidimensional, simultaneously addressing new and emerging threats to States, people, and the environment. Similarly, the state policy response to Arctic security should promote coherence between the different instruments in each of these dimensions.

2.1.2 Climate Change as a Source, Multiplier and Accelerator of Security Threats

Climate is increasingly defined as a source and multiplier of security threats, which are accelerated to the extent that the climate continues to change our physical environment (Kalliojärvi 2019, 9). Temperatures in the Arctic are rising faster than almost anywhere else on earth, at a rate more than double the global average (IPCC 2021, 41; IPCC 2019, 215; CCCR 2019, 44). A physically transformed Arctic will be open to increased commercial, civilian and military activity, changing the interests and strategic positioning of Arctic States and drawing in Non-Arctic and Near-Arctic States. Change affects the lives of persons and communities in the North, and the conditions for all forms of life in the Natural World.

Climate change, therefore, is creating new security dynamics in the Arctic. Change is also transforming our understanding of "security", and the measures required to achieve it. The survival of states is traditionally the "referent objective" of security; that which is to be secured. Military security and geopolitical dynamics have shaped the Canadian Arctic since the early Colonial period. Yet climate change generates threats to a much broader range of referent objects, from human beings to the natural systems on which all life depends. The effects on these referent objects are significant, complex, interrelated and cannot be resolved through military power (Kalliojärvi 2019, 9; Greaves 2021, 187). Rather, security depends on cooperation rather than power competition between states, focused on the ability of states and societies to become resilient, adapt and to protect the natural world.

The failure to achieve this resilience can itself threaten the state and national security, in their traditional realist construct. Increased pressure on state and civil institutions; decreased quality and access to vital natural resources, such as fresh water; damage to public infrastructure; forms of instability and increased conflict risk; large scale migration; mass extinction of animal life and the life sustaining biodiversity. These are among the consequences of climate change in the Arctic region, which threaten states, human beings and life in the Natural World (Kalliojärvi 2019, 9).

The uncertainty generated by climate change is producing new approaches to the concept of security. The focus is on how climate change acts as threat multiplier, the scope and character of referent objects that must be "secured" and, within this new scope, the actions needed to achieve security. Climate change forces a shift in the concept of security away from being state-centric and military focused. States, Human Beings and life in the Natural World all emerge as the referent objectives of security, requiring an integrated approach to security.

Conceptualising security to include non-state and non-military referent objects has its origin within a decade's long debate taking place within Security Studies, on whether to broaden and deepen the security agenda. Using Canada as a case study, the research problem and primary research questions are designed to assess whether climate change is driving new security dynamics in the Arctic. The thesis attempts a contribution to theory building on approaches to Arctic security, taking an integrative approach and considering the relationship between the security of states, human beings and the natural world.

Emerging security challenges can be analysed within two possible dimensions: traditional state and power-centric approaches to security, and critical approaches to the dimension of human and environmental security. The scope of research will consider the type of changes that climate is generating, and how these changes are interacting with, and transforming traditional security dynamics, and generating new dimensions of security. The research approach will consider climate-driven security challenges in each dimension, and how changes in the three dimensions interact with each other. Focus will be given to Canada's security policy framework and response, and what needs still to be done.

The primary research question is as follows: *Is climate change creating new security dynamics in the Canadian Arctic?* Four secondary questions help focus the research scope, the referent objects to be considered, assessment of Canada's approach and policy response to emerging security challenges, and whether novel approaches to security theory are needed.

Table 1: Research Framework

Research Framework	Climate Change and New Approaches to Securing the Arctic: The Case Study of Canada
Research Problem	Traditional security theory is inadequate to conceptualise, measure and address new security dynamics that climate change may be creating in the Arctic.
Primary Research Question	Is climate change creating new security dynamics in the Canadian Arctic?
Secondary Research Questions	a. Does climate change generate new security threats, and/or amplify existing threats to Canada?
	b. Which referent objects does climate change threaten, and need to be secured?
	c. What has Canada's security policy response been, to the military and non-military dimensions of security?
	d. Are novel approaches to theory needed to conceptualise emerging security dynamics in the Arctic, attributed to climate change?

2.2 Research Hypothesis

The hypothesis to be tested is that *climate change creates new security dynamics in the Arctic*. The concept of security is shifting, away from being state-centric and military focused to include a broader range of referent objects, and to conceptualise the means for securing them. Canada requires a comprehensive policy framework and institutional capacity, to accommodate the military, human and environmental dimension of security of these emerging security challenges. Aligned with the *Primary Research Question* and supporting sub-questions, the research hypotheses underlying are as follows:

Table 2: Research Hypotheses

Hypothesis for Testing	Response to research questions
Research Hypothesis: Driven by climate change, the concept of security is shifting, away from being state-centric and military focused to including new referent objects that must be secured. Canada will need a comprehensive, multi-dimensional security policy that accommodates military, human and environmental security.	*Primary Research Problem*
H0: Climate change is a source and multiplier of security threats, which will accelerate as the pace of temperature warming increases. As it transforms the physicality of the Arctic, climate change generates new security dynamics.	*Research sub-question (a)*
H1: Climate change opens the Arctic to new forms of geopolitical and economic competition, integrating the Arctic into global geopolitical and economic dynamics. Physical changes allow for the entry of non-Arctic States and non-state actors into these dynamics, expanding the scope, complexity and reach of competition.	*Research sub-question (b)*
H2: Climate change is a source of threats to the security of human beings and societies, and to the natural world. These threats can accelerate to become threats to the state itself and should be considered as referent objects for security policy. Climate-driven changes are systemic and interrelated and require an integrated approach.	*Research sub-question (b)*
H4: Canada is a relevant case study, as it is already developing a multi-dimensional security policy framework, and a "whole of society approach" that include defence, human and environmental security. The lessons from Canada's experience can be extrapolated more broadly in the circumpolar region.	*Research sub-question (c)*
H3: Climate change is a new security variable. New and integrative approaches to security theory are needed, which address climate driven threats to a broader set of referent objects.	*Research sub-question (d)*

2.3 Case Study Methodology

2.3.1 Defining the Case Study Approach and Method

A case study is an in-depth analysis of a phenomenon relating to persons, groups, organisations, countries and so forth (Swanborn 2010, 1). There are two general approaches to case studies, *intensive* and *extensive*. The intensive approach is used for this thesis, as it allows for a case study with "one specific instance of a phenomena to be studied, or on only a handful of instances in order to study a phenomenon in depth." (2010, 2). To analyse the phenomena within a case, the relationships of variables and how they evolve with time is considered (2010, 2-3). This definition is like the one used by Bryman and Bell (2019) which deem a case study to be the study of a person, group, organisation, event, and/or state (2019, 44). A study of the Canadian Arctic is a macro-level intensive case study with multiple actors, with the Canadian government being the main actor under analysis.

Ritchie et al. (2014) describe social research as having four functions: *Contextual* – "describing the form or nature of what exists"; *Explanatory* – "examining the reasons for, or associations between, what exists"; *Evaluative* – "appearing the effectiveness of what exists", and *Generative* – "aiding the development of theories, strategies or actions" (2014, 31).

As this is a macro-level case study focusing on multiple actors, primarily the Government of Canada and its interactions with other states and domestic actors, the analysis is "connected to a restrictive set of causative 'hard' variables"(Swanborn 2010, 8), here the causal relationship between climate change and security dynamics. Causal relationships between the variables are critical for reaching conclusions within a case study (2010, 8), an example being the security effects of climate change in the Canadian Arctic. As John Gerring (2007) states; "a case study is an intensive study of a single case (or a small set of cases) with an aim to generalise across a larger set of cases of the same general type" (2007, 65). Therefore, a well conducted case of the effects of climate change within the Canadian Arctic can, to some extent, be used in the analysis of other Arctic States.

Peter Swanborn (2010) lists seven properties that a case study *should* include to be the proper methodological approach in studying a social phenomenon. It should be conducted "within the boundaries of one social system (the case), or within the boundaries of a few

social systems (the cases)" (2010, 13). The study of social phenomena should be conducted in "the case's natural context". The phenomena should be studied in the context of a period, or conducted as the phenomena is occurring (2010, 13).

If process-tracing methodology is being used, links between variables within the case study need to be extensively examined. Start the analysis of the case study with a broad research question, after examining the phenomena over time, make the research question precise. Use multiple sources of data, and lastly, optionally the researchers can discuss their findings with the subjects being researched when applicable (Swanborn 2010, 13). This is a wide definition of a case study.

George and Bennett (2005) define a case study as "the detailed examination of an aspect of a historical episode to develop or test historical explanations that may be generalisable to other events" (2005, 5). Further defining it as:

> "We define a case as an instance of a class of events. The term "class of events" refers here to phenomenon of scientific interest, such as revolutions, types of governmental regimes, kinds of economic systems, or personality types that the investigator chooses to study with the aim of developing theory (or "generic knowledge") regarding the cause of similarities or differences among instances (cases) of that class of events. A case study is thus a well-defined aspect of a historical episode that the investigator selects for analysis, rather than a historical event itself." (George and Bennett 2005, 17-18).

Case studies are in some instances better equipped for attaining conceptual validity, because of the way they measure the cause and effects of actions taken within a phenomenon while avoiding conceptual stretching (2005, 19). The following subsections will examine the positive and negative aspects of conducting qualitative case studies.

2.3.2 The Advantages of using Case Study Methodology

George and Bennett (2005) give four positives linked to the use of case studies: potential high conceptual validity; ability to create new hypotheses; the case study ability to analyse the hypothesised role of causal mechanisms, and; the ability to work with causal complexity (2005, 19).

Conceptual validity refers to identifying and measuring the "indicators that best represent the theoretical concepts the researcher intends to measure" (2005, 19). It is difficult to measure phenomena such as democracy or revolutions within statistical models, whereas within a case study, because of the potentially high conceptual validity, a detailed examination of the conceptual factors can be developed (2005, 19). Statistical research methods have the problem of creating conceptual stretching, because the scope of the cases studied is vast and cases that aren't similar sometimes get placed together categorically, whereas case studies create higher validity because of the narrower scope of analysis and size of case being studied (2005, 19).

Case studies are useful for deriving new hypotheses. If the research hypothesis assumes that X causes Y, and produces the result Z, then a possibly new hypothesis with theory development needed to explain that result (George and Bennett 2005, 20). However, statistical models may lack the in-depth analysis capability to determine why Z became the outcome, thereby not allowing new hypotheses to be formed (2005, 21). In contrast, case studies are well equipped for interpreting social processes, how the actions of one actor can affect other actors, and the effects variables have on each other (Swanborn 2010, 16).

A case study necessarily needs the researcher to be physically present in the environment of being studied, therefore making it an excellent method for analysis of contemporary phenomena in the aftermath of an occurrence (2010, 17). As case studies are good for interpreting social phenomena, they can be used to explain similar phenomena in other similar cases, for example other Arctic states sharing characteristics with Canada.

2.3.3 Possible Disadvantages of Case Study Methodology

Some disadvantages may limit the effectiveness of Case Study methodology. Selection bias, in terms of statistical methodology refers to, "is commonly understood as occurring when some form of selection process in either the design of the study or the real-world phenomena under investigation results in inferences that suffer from systematic error" (Collier and Mahoney 1996, 59). For a qualitative approach, researchers can opt to choose a case that has the desired outcome, by selecting cases sharing the dependent variable (George and Bennett 2005, 22-23). To avoid selection bias Collier and Mahoney (1996) highlight the need to have an appropriate frame of comparison in the analysis of the case study, therefore not making the scope too narrow or wide (1996, 66-67).

A single case study's small scope of analysis can result in phenomena outside the specific scope of analysis not being taken into proper account (George and Bennett 2005, 25). "Lack of representativeness" has also been highlighted by George and Bennett (2005) as a possible drawback of conducting case studies. Single case studies, therefore, can lack wider representativeness. This means that when the analysis of a case study is complete, the researcher should be careful not to say that similar cases will have the same results because they share characteristics (2005, 30-31).

2.3.4 Research Design

John Gerring defines research designs as the "selection and arrangements of evidence" (2004, 78), while Bryman and Bell state "a research design is a framework for the collection and analysis of the data that will be used to answer the research question" (2018, 27). The research design's intention is to create a framework for the researcher to gather and analyse data (2018, 28). In a qualitative single case study research design, the focus can be set on a defined unit; a community, a family, an organisation, a person, a single event, a province or state, or a sector of the economy. Therefore, the goal of a qualitative case study research design is "finding and revealing the features of the case" (2018, 44). If the research design is appropriate for the field of inquisition, then the results can be used in future similar case studies to further develop theory.

2.3.5 Literature Review

For a case study to be executed well then, a review of the literature relating to the theory and the topic of analysis is needed. There are few topics of research that will be completely unique, therefore, a researcher should examine texts, documents, reports, and so forth relating to their field of inquiry, so that they can potentially build on the current theory, or establish a new direction with the theoretical framework. Bryman and Bell (2019) identify a key points for conducting a literature review; find existing results and what is yet to be analysed; not making the same mistakes as previous researchers; discovering different methodological and theoretical approaches used; developing a framework for collection of data; finding potential new variables of examination; finding potential future research question; to compare your results to others; it's expected in a case study research design (2019, 366).

2.3.6 Data Collection and Content Analysis

Several hypotheses linked to the main research question are used to direct the method, and the type of data collected. The data collected is secondary data sources retrieved from supranational organisations such as the Intergovernmental Panel on Climate Change (IPCC) and the Arctic Council, and government reports, and from Canadian sources. Secondary data being defined by Ritchie et al. (2014) as the analysis of existing qualitative research data (2014, 53). There can emerge difficult ethical considerations when using secondary data, as the researcher needs to determine what the focus of examined texts is, and if the data contained in said text therefore is relevant to their scope of analysis. If the data is not relevant and still used then the results produced will be misleading (2014, 53). Data collection through a literature review is used to find the necessary information required to conduct an analysis of the relevant data (Bryman and Bell 2019, 232).

Theoretical sampling is used "in order to discover categories and their properties to suggest the interrelationship into theory" (2019, 233: Glaser and Strauss 1967, 62). Through theoretical sampling, data is collected and analysed concurrently, while also choosing which relevant data to collect and thereby producing theory (2019, 233). Data collection through theoretical sampling occurs through the phone process of the analysis and is ongoing till the research project is complete.

Theoretical sampling is also not just confined to data collected from individuals in for example interviews, also applying to events and different settings (2019, 233). As Strauss and Corbin (1998) state; "data gathering driven by concepts derived from the evolving theory and based on the concepts of making comparisons, whose purpose is to go places, peoples, or events that will maximise opportunities to discover variations Mong concepts and to identify categories in terms of properties and dimensions (1998, 201). The researcher continues to use the theoretical sampling approach until they reach "theoretical saturation" meaning that there isn't any new data to be collected, the points of research have been fully analysed, and the relationships amongst the variables are adequately described (Bryman and Bell 2019, 233).

Table 3: Type of data collected and its purpose

Source of Data	Data Type	Text of Analysis
Intergovernmental Panel on Climate Change	*Secondary Data*	Data collection regarding climate change used for theory building regarding a multi-dimensional approach to security (state and human, and securing the natural world)
United Nations	*Secondary Data*	Different reports ranging from climate assessments, human security, and future projections. Used for theory building, in terms of human security, and statistical data collection for climate change.
Canadian Government	*Secondary Data*	Government reports from 2018 to the present, used for data collection regarding research subjects on the micro and meso levels of inquiry. As well as analysing projections on how the Canadian government means to tackle climate change in the short and long term.
Arctic Council	*Secondary Data*	2015, 2020, 2020b, 2020c reports, used for defining key concepts and areas of analysis

The reports listed above are not the only sources of data, they are not listed because it would be impractical to list almost a hundred independent reports in the table. The data sources listed each have multiple reports that are cited throughout the thesis.

Table 4: Case Study Method Summary

Possible Advantages Intensive Case Studies	Possible Disadvantages Intensive Case Studies
The ability to: ▪ Extrapolate, from a single case into other contexts ▪ Explore causality and the dynamics of interaction ▪ Develop new hypotheses and theory, which are the results of causality and may lead to new theory development**.**	The presence of: ▪ Selection bias ▪ Unaccounted contextual phenomenon

2. 4 The Choice of Canada as a Case Study for Arctic Security

> *Canada's defence and security policies and practices align with its broader national strategy for the Canadian Arctic and the Circumpolar North, which promotes a shared vision of the future where northern and Arctic people are thriving, strong and safe (Government of Canada: Arctic and Northern Policy, 2018)*

Canada offers the possibility of exploring the causal relationship between climate change and security dynamics, in a manner that supports the testing of hypotheses and developing theory. Climate change is driving dramatic physical changes in the Canadian Arctic, as elsewhere in the circumpolar region. Within this context, Canada's uniqueness as a case study derives from its historical, physical and demographic character, and Canada's movement towards a comprehensive *Arctic and Northern Policy* (2019) security framework. The framework's defence component recognises that climate is an accelerator to conventional threats to security. However, it includes actions on human and environmental security, within a "whole of society" framework.

Canada is arguably the Arctic nation most vulnerable to changing climate and security dynamics, with the possible exception of Greenland. The Canadian Arctic and Northern Territory is vast – over 40% of Canada's total landmass and 25% of the global Arctic. Yet despite its size, less than one percent of Canada's population lives in the Arctic, making it one of the world's most sparsely populated areas. Canada's circumpolar region has only 92,000 inhabitants, amounting to about 0.02 people per square kilometre (AMAP 2021). The combined Arctic and Northern regions (the Northwest Territories, Nunavut, Yukon, including the sub-Arctic) is home to approximately 150,000 inhabitants (The Arctic Institute, 2020) or approximately 4% of the four million persons estimated to live in the global Arctic (Arctic Council 2021).[4]

The population of Canada's Arctic and Northern Territories is demographically and culturally unique, both in Canada and the larger circumpolar region. Forty percent of the region's population is First Nations (GoC 2020), compared with the Global Arctic average of 10% (Arctic Council 2021). Indigenous peoples make up the largest proportion of the population in Nunavut (86%) and the Northwest Territories (51%), and the Yukon Territory

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[4] The largest Arctic population of two million lives in Russia, which has approximately two million inhabitants (AMAP 2021).

(23%). They live in small communities, spread across the region, with limited infrastructure and physical connection to the rest of Canada.[5]

This combination - hostile environment, vast distances, low population density, limited infrastructure and connectivity, majority indigenous population and culture - are at the core of what makes Canada's Arctic and Northern region unique. With greater population densities, other Arctic States have better developed infrastructure and connectivity, and the Arctic is more integrated into the state and nation. It has also been the basis for challenges to Canada's sovereignty in the Arctic. International law requires sovereign states to have permanent populations and the means to govern, among other attributes.[6] However, Canada's northern population is sparse, and it historically had difficulty both consolidating political control over the Arctic region, and enforcing its claims.
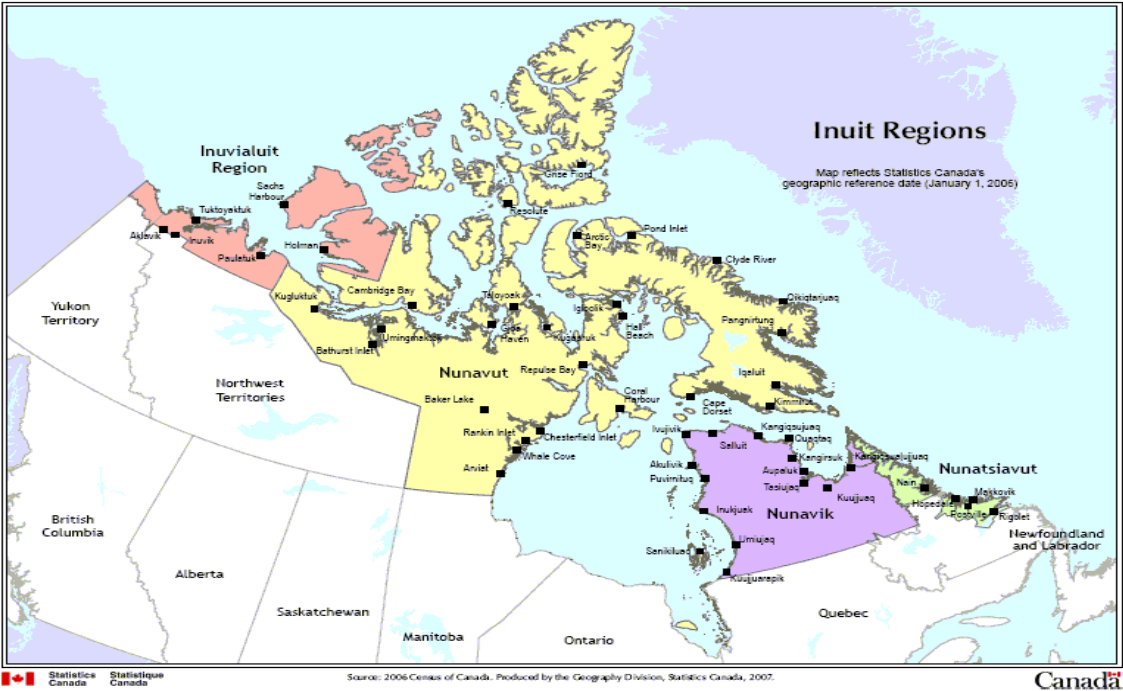
Figure 1: Communities in the Inuit Regions

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[5] For example, Inuit are the Indigenous people of the circumpolar Arctic. The word Inuit means "the people" in the Inuit language, Inuktut. Inuit comprise only 4% of the total Indigenous population, with 64,325 individuals identifying as Inuit on the 2016 Census. The majority (73%) of Inuit live in 51 communities spread across the Inuit Nunangat, which means "the homeland", an area that represents a third of Canada's land mass and 50% of its coastline (GoC 2020).

[6] Often cited is Article 1 of the *Montevideo Convention on the Rights and Duties of the State* (1936). The convention provides criteria for statehood widely accepted under international law. It determines that to be an international person, a state should possess at least four qualifications: i) a permanent population; ii) a defined territory; iii) a government; and iv) the capacity to enter into relations with other states.

The primary challenge is not to land-based territory, but relates to Canada's maritime claims and inland waterways, specifically the Northwest Passage. Canada's position is that the Northwest Passage is part of its internal waters and no right of innocent passage exists by vessels from other states. The position is contested by the United States, which adopted the position that the Northwest Passage is a strait and there exists a right of transit passage for foreign ships and aircrafts to enjoy. 'Transit passage' is a broader right than 'innocent passage' as during the former, warships can be at battle stations. Other states have taken a similar policy position, China among them, but have not legally contested the Canadian position.

Also located in Canada's Arctic and Northern territories are globally significant reserves of hydrocarbons, which may lose their value as the world moves to zero-carbon targets, and Critical Minerals and Rare Earth minerals of increasing value to digital and post-carbon technologies. Canada's sovereignty over these resources is not yet contested. Yet competition for access is likely to increase, as climate changes make mining sites and transport more economically viable.

Climate-driven opening of the Arctic, therefore, creates new sovereignty and security challenges. These emerge from the growing strategic importance of the Arctic and region's integration into geopolitical dynamics. The threats are generated by other Arctic or non-Arctic states, including Canadian allies which share different interests. Canadian military power (military) has limits, and Canada relies on regional governance, and international rules-based systems. At the same time, Canada is pressed to address new threats to human populations, the environment and other life in the natural world.

This combination of variables incentivises a multidimensional approach to security. The traditional approach to Arctic security focuses on military defence, especially the protection of national borders and the assertion of state sovereignty over Arctic land and water. However, in a changing Arctic security and sovereignty may expand to encompass environmental, economic, social and cultural issues. Climate change may come to define these changes more than any other issue. The Canada case study offers a case study framework in which new hypotheses and theories can be formed and tested.

3. Conceptualising the Arctic

3.1 Defining the Arctic

> *"The definition of what the Arctic is depends on what the definition is to be used for." Ellen Øseth, Norwegian Polar Institute (2016)*

There is no single or correct definition of the "Arctic". Common definitions have geographic, climatic, political and cultural elements. The definitions are a construct of the Arctic's climate, physicality and resources, its States, the Peoples that inhabit the High-Arctic and Sub-Arctic regions and of their relationship with the natural world. These reflect different and often contested versions of the Arctic's history, it's present and possible futures, held by the entities and persons staking a claim to be the *referent objects* of Arctic security (Brunn and Medby 2014, 915-916; Øseth 2015). Increasingly, the definition also reflects the claims of non-Arctic states, with interests in the region.

Geographically and in scientific terms, the Arctic Circle (66* 33' N) usually delimits the region, which spans approximately 21 million square kilometres. The Arctic Circle marks the latitude above which the sun does not set at the summer solstice, nor rise on the winter solstice; periods of 24-hour darkness or light. The average temperature should not rise above 10*C during the warmest month of the year, which is the minimum temperature needed for trees to grow (Arctic Centre, 2020; Øseth 2015).

Some definitions include variables that describe the Arctic's climatic and physical character. These reflect national geography and interests, and mean that boundaries are mutable. If the Arctic is to be defined by its physical characteristics, then climate change and increasing temperatures will cause the Arctic's boundary to recede northward (Arctic Centre, 2020; Øseth 2015).

Politically and in the international context, the Arctic is defined as the eight states with territory inside of the Arctic Circle. These comprise Finland, Norway, Sweden, the Russian Federation, Canada, the United States, Iceland and Denmark through Greenland (Arctic Centre, 2020), of whom all are members of the Arctic Council (Arctic Council 2015).

Based on sovereign national jurisdictions and international law, these countries claim the shared right to regional governance of the Arctic. Some disputes notwithstanding, the sovereign control of these

3.2 Canada's Definition of Arctic

This thesis uses the definition provided in *Canada's Arctic and Northern Policy Framework*. Canada uses the term "Arctic" in the international context when referring to the circumpolar region; the eight Arctic States comprising the members of the Arctic Council, all of whom have territory within the Arctic Circle.

"Arctic and the North" is used in the domestic policy context. The term is inclusive of the sub-Arctic territory adjacent to the Arctic Circle, and of the First Nation and Métis peoples that inhabit the territory. Canada's policy framework, therefore, defines the Arctic in both geographic and cultural terms. It considers "both the 'Arctic' and 'Northern' character of the region and those who live there" (2019). Using the domestic policy definition, Canada's "Arctic and Northern" territory includes the three northern territories – the Northwest Territories, Nunavut and the Yukon – and the northern portions of three provinces; Manitoba, Newfoundland and Labrador, and Québec (2019). The definition reinforces Canada's claim to "Arctic Sovereignty", by integrating people, and the land and waters they occupy, into Canadian history and identity.

3.3 An Historical Perspective on Canadian Sovereignty in the Arctic

The Canadian perspective on Arctic sovereignty must be put into perspective, for consideration of its relationship to security, specifically the Northwest Passage. As Max Huber stated while presiding over the *Islands of Las Palmas* case in 1928, sovereignty is "the right to exercise therein, to the exclusion of any other state, the functions of the state" (McRobert 1982, 43). An important aspect of Canadian sovereignty claims relates to the transfer of land by the British Empire in the 19th century as well as the presence of Canadian Inuit in the provinces within the Polar Circle such as Nunavut, Manitoba, Ottawa, Quebec, Newfoundland and Labrador, Ontario, and the Northwest Territories.

As of 01 September 1880, all polar territories controlled by the British Empire were ceded by Canada. However, the wording of the act was vague because of the mention of all British territories in North America, so technically territories in the Caribbean could be

included (McRobert 1982, 6-7). Therefore, in 1895 the act was revised to only include territories which are presently included within Canadian borders. The legislation (*Colonial Boundaries Act*) of 1895 states that:

> *Where the boundaries of a colony have, either before or after the passing of this Act, been altered by Her Majesty the Queen by Order in Council or letter patent, the boundaries as so altered shall be, and be deemed to have been from the date of the alterations, the boundaries of the colony* (1982, 7: Colonial Borders Act 1895).

The question then became "did the British Empire have sovereignty over the Canadian Polar region before the 1880 transfer?" British sovereignty claims can be backed by their exploration and mapping of the polar region and preliminary Northwest Passage in the 19th century. The 1819 voyage of William E. Parry led to the discovery of a potential Northwest Passage (Neatby and Kikkert 2007). James Ross became the first European to reach the northern magnetic pole in 1833, with considerable assistance from Inuit locals.

Sir John Franklin conducted multiple expeditions over 30 years in what would later become the first section of the Northwest Passage starting through the Labrador Sea, before he disappeared in 1846 (2007). By approach from the east in 1850, Robert McClure was able to reach the point where it was assumed that Franklin had disappeared (2007), thereby partially completing the mapping of a potential route through the passage. Jumping ahead five decades, the first Canadian government activities officially began, with the 1897 expedition conducted by William Wareham to navigate Hudson Bay at the request of the Department of Marine and Fisheries (McRobert 1982, 10).

Between 1900 and 1930´s there were challenges to Canadian sovereignty in the Arctic made by Norway, Denmark and the United States respectively. In the case of Norway, the claim was made over the Sverdrup Islands in northern Nunavut, discovered by Otto Sverdrup in the late 19th century. The claim was resolved when the Canadian government paid a settlement of $67,000 to Sverdrup in 1930 for all the information regarding the geographic area (1982, 11-12).

Regarding Denmark, a conflict began over what Ottawa saw as overuse of the resources on Ellesmere Island by the Thule Inuit of Greenland, a Danish territory. Canadian

sovereignty would be affirmed with yearly expeditions conducted by the Royal Canadian Mounted Police, known as the Eastern Arctic Patrol in 1922 (1982, 12-13).

The United States, was, and is still considered the most significant threat to Canadian sovereignty in the Northwest Passage. From 1924, the US State Department issued a statement challenging Canadian territorial claims if the areas were uninhabited and, therefore, still categorised as contested territory which the US could make a claim (McRobert 1982, 14-15). The US went so far as to attempt building a military presence on Ellesmere Island through a proposed expedition in 1925. This provoked a response from the Canadian and British governments – which was still conducting Canada's foreign policy - stating that any passage within claimed Canadian territorial waters needed to be approved by the Canadian state (1982, 15). Therefore, the greatest challenge to Canadian sovereignty in the Arctic preceding World War II was the lack of recognition from the US authorities.

After World War II, the "Road to Resources" initiative introduced by the Progressive Conservative Diefenbaker government in 1957, would strongly subsidise the costs of infrastructure construction – mainly roads, in the Yukon and North Western Territories, reinforcing Canada's presence in the geographical areas linked to the Northwest Passage (McRobert 1982, 24). As a result of increased expenditure focusing on infrastructure, the RCMP's capabilities were increased to maintain the rule of law in the Canadian North, which in the process strengthened sovereignty claims over the NWP (1982, 25-26; 34).

In the onset of the Cold War, the Distant Early Warning (D.E.W.) system was created. The purpose of D.E.W. was to ascertain the position, track, and intercept Soviet long-range bombers approaching over the Far North (1982, 33). The D.E.W. system would be the first of many instances of military cooperation between Canada, the United States, and in some cases Western European states.

In 1970 Canada unilaterally declared a twelve-mile zone of control in its territorial waters, including the Northwest Passage (McRobert 1982, 47). This was to effectively enforce the new climate safety regulations put forth by the AWPPA. However, this was again strongly opposed by the United States, which determined that Canada would restrict its right to innocent passage through the Northwest Territory. The AWPPA required the registration of commercial vessels entering the Northwest Passage and forced strict regulations on said

vessels (Huebert 1999, 219). Formation of the AWPPA was provoked by two passages by the US tanker *SS Manhattan* in 1969 and 1970 through the passage, without the permission of the Canadian government (1999, 219). The tanker would also be the first commercial ship to traverse the Northwest Passage (1999, 219). Therefore, the AWPPA would force the presence of Canadian ice breakers to prevent any ecological disasters caused by for example oil spills in the fragile Arctic ecosystem, which would later occur with the Exxon Valdez in Alaska (Taylor 2014).

In 1977 the voluntary registration system for vessels over 300 metric tons called NORDREG was implemented. It is important to note that the system was voluntary in its initial phase (Pharand 2007, 49). The purpose of the system was to allow the Canadian Coast Guard to track, inspect, and aid vessels traversing the Northwest Passage. The issue therefore became the voluntary manner of the system, and therefore lack of enforcement within Canada's Arctic waters. It would not be before July 1st, 2010 that NORDREG would become mandatory for vessels entering the Northwest Passage (Exner-Pirot 2010)

In 1985 Canada declared a 200 mile, while expanding the 3 nautical mile line to 12 nautical miles through the AWPPA. In 1988 Canada and the United States signed a "cooperation agreement" stating that the United States would seek permission to use the Northwest Passage, which to some extent is also a requirement of the AWPPA as seen above (Bone 2016, 287). On January 1, 1986 the Canadian government drew straight baselines in its Arctic territory, thereby claiming waters with the Canadian Arctic Archipelago as internal waters, and as a result sovereignty over the area (Lajeunesse 2018, 2).

In 1997 the Oceans Act passed through the Canadian parliament thereby federalising control over the Canadian Arctic land and seabed. In 2003 Canada ratified the UNCLOS, thereby meaning that any territorial claims need to be made before 2013 as described by Lt. Colonel Sharp of the Canadian Forces (Sharp 2011, 305). A point being that the United States is the only state to have signed the agreement, while not ratifying it in the Senate (Bone 2016, 287). Once the UNCLOS is ratified, signatories are given 10 years to submit a territorial claim to the UN Commission on the Limits of the Continental Shelf – hence CLCS (Sharp 2011, 302).

In 2007 the Radarsat-2 programme was implemented, thereby, allowing Canada to monitor naval movement in its Arctic territory. In 2013 Canada extended its territorial claim in the Arctic to include the Lomonosov underwater ridge; its claims need to be founded on a geographic linkage between the northern territories and the ridge. The 2013 territorial claims also include geographical areas claimed by Russia and Denmark, leading to an increased need to prove a physical link between Canada and the Lomonosov ridge. In 2017 through an expedition in the Northwest Passage, Canadian authorities discovered the location of the British ship *Erebus*, thereby strengthening sovereignty claims over the Northwest Passage, especially if one considers the discovery of the HMS *Investigator* in 2010 (2016, 287).

The Economist

Figure 2: Northern Transpolar Maritime Routes

This is a sample of the actions taken, going back to the colonial period. Canada has gradually expanded the state's presence, used international law as a framework for its claims, established minimal physical and communications infrastructure, and brought First Nations' under its authority. All of these contributed to reinforcing Canada meeting the criteria for

sovereignty set out in the *Montevideo Convention on the Rights and Duties of the State* (1936).

3.4 The Arctic of its Inhabitants

Canada is geographically the second largest state in the Arctic behind Russia and therefore faces unique challenges. Along with other Arctic nations Canada is experiencing temperature rises twice the global average due to climate change (Bush et al., 2019, 5). Canada, along with Greenland are the least densely populated states in the Arctic; in the three northern territories of Nunavut, NWT, and the Yukon the average density is less than a person per square mile (Grid 2021). Because there is such a small populace in the Canadian Arctic, the need for expansive infrastructure is not as great as it is in the other Arctic states.

The infrastructure needs in the Canadian Arctic are demanding, because of melting ice caused by climate change the Northwest Passage is set to become accessible to shipping and travel soon. This, therefore, highlights the need for increased security and show of force in the Arctic, so Canada has the ability to exercise the states sovereign rights over its territories. The Canadian "Northern Strategy" has six main objectives for asserting the Canadian presence in the Arctic, with the goal being that; "The Canadian Arctic and North and its people are safe, secure, and well-defended." (Government of Canada, 2019), this policy paper will outline the main points for arguing for Canada as a relevant case study.

As noted in Section 2.4, the population of the global Arctic is approximately four million persons, of which the Arctic and Northern Populations of Canada comprise approximately 150,000, or .4% of Canada's total population of 38 million. In the Arctic and North, up to 40% of the total population, even though the Canadian Arctic makes up 40% of the Canadian territory. Density is .03 persons per square kilometre, with larger areas uninhabited. While in total there are approximately 4 million inhabitants in the Arctic (National Snow & Ice Date Center, 2020).

The Canadian Arctic is made up of the Northwest Territories, the Yukon, Nunavut and parts of Quebec, Newfoundland and Labrador (Government of Canada, 2021). The Arctic territories and provinces have differences when it comes to governance. Constitutionally, provinces have their own constitutional powers, whereas territories are delegated constitutional powers by the Canadian parliament (2021). This has, therefore, led to federal

officials governing the territories. Authority is currently being devolved as the federal government steadily grants greater decision-making powers to territorial governments (2021). The territories are heavily reliant on financial aid from the federal government through the Territorial Formula Financing (TFF) to be able to fund public services. The territories are also not included in the process whenever amendments to the federal constitution are considered. However, in 1982 territorial governments were granted the ability to amend their own constitutions (Legislative Assembly of The Northwest Territories, 2014). The two main reasons an area is classified as a territory and not a province are; a small population in a geographically large area, and Federal Acts controlling the powers and existence of local governance (2014).

Within the provincial and territorial governments there are working groups specially designed to deal with indigenous issues, these five groups are; Native Women's Association of Canada, Métis National Council, Inuit Tapiriit Kanatami, Congress of Aboriginal Peoples, and, Assembly of First Nations (Executive and Indigenous Affairs, 2021). The five main issues they deal with are; economic development in Aboriginal communities; violence prevention against girls and women, aboriginal housing; disaster response, mitigation, and management in aboriginal communities, and increasing rates of aboriginal graduation amongst youth (2021).

Locations such as Yellowknife, with a population of about 19,600, as a consequence of climate change, will live in a "hazard zone" because of the thawing of permafrost by 2050 (Ramage 2021, 30). It is also projected that 65% of populated areas within the Arctic Circle will be permafrost free by 2050, resulting in the need for adaptability for Arctic inhabitants on how to deal with their surroundings when they are permafrost free, and the negative consequences this entails (2021, 30). Further, it is projected that the Northwest Territories will have to dedicate 1.5% of Gross Regional Product to dealing with thawing permafrost by 2050 (2021, 33).

3.5 Governing the Arctic

> *The Arctic Council is the leading intergovernmental forum promoting cooperation, coordination and interaction among the Arctic States, Arctic Indigenous peoples and other Arctic inhabitants on common Arctic issues, in particular on issues of sustainable development and environmental protection in the Arctic* (Arctic Council 2021)

The Arctic Council is the only intergovernmental body for the region involving all eight Arctic States. The Council was established in 1996 as a high-level intergovernmental forum of the eight Arctic states – Canada, Denmark (Greenland), Finland, Iceland, Norway, Russia, Sweden, and the United States. According to its founding document, the "Ottawa Declaration" (19 September 1996), the Council's purpose is to promote "cooperation, coordination and interaction among the Arctic States with the involvement of the Arctic indigenous communities and other Arctic inhabitants on common Arctic issues, in particular issues of sustainable development and environmental protection in the Arctic (Ottawa Declaration 1996; Art.1a.).

The Council is not a treaty body or intergovernmental organisation. By the Council's "Rules of Procedure", decisions are made by the consensus of all eight member states (Art.7) and are not legally binding. The Council does not have the power to "implement or enforce its guidelines, assessments or recommendations. That responsibility belongs to individual Arctic States or international bodies". The exception is with three legally binding agreements negotiated between the member states between 2011 and 2017 (Table 6), which have a legal character. This gives the Arctic Council a hybrid character. However, the governance model remains firmly rooted within inter-state consensus.

Table 6: Arctic Council International Agreements

1. Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic	Signed 2011, "The Objective of this Agreement is to strengthen aeronautical and maritime search and rescue cooperation and coordination in the Arctic."

2. Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic	Signed 2013, "The Objective of this Agreement is to strengthen cooperation, coordination and mutual assistance among the Parties on oil pollution preparedness and response in the Arctic in order to protect the marine environment from pollution by oil."
3. Agreement on Enhancing International Arctic Scientific Cooperation	Signed 2017, "The purpose of this Agreement is to enhance cooperation in Scientific Activities in order to increase effectiveness and efficiency in the development of scientific knowledge about the Arctic."

Source: Arctic Council 2021

Further, the Ottawa Declaration explicitly states that the "Arctic Council should not deal with matters related to military security" (Art.1, footnote 1). Security matters, therefore, are not discussed. Yet the Council is credited with promoting cooperation between Arctic States and Peoples, achieving relative peace and stability and sustaining the region's "exceptionalism" over almost 25 years.

The Arctic Council governance framework recognises culture and shared sovereignty with indigenous peoples. Six indigenous peoples' organisations have Permanent Participants status on the Arctic Council (Arctic Council, 2020), with full consultation rights in connection with the Council's negotiations and decisions. Five of the six organisations have membership across national boundaries, reflecting the pre-contact/modern settlement of indigenous persons. The indigenous populace is a critical component defining the *cultural* elements within the Arctic (Arctic Council, 2020b). The Council is unique in this regard, as a platform for engagement between states, indigenous organisations and civil society.

Observer status in the Arctic Council is open to non-Arctic States; inter-governmental and inter-parliamentary organisations, global and regional; and non-governmental organisations that the Council determines can contribute to its work. Currently there are 38 observers (Arctic Council, 2020). Among the criteria for achieving observer status, states and organisations accept the objectives of the Arctic Council and recognise Arctic States' sovereignty, sovereign rights and jurisdiction in the Arctic (Arctic Council, 2020c).

Thirteen non-Arctic states had Observer status as of 2019 (2020c). Observer's primary role is to observe proceedings of the Arctic Council, they are also abøle to contribute to

proceedings through working groups within the council, they can finance projects - as long as contributions do not exceed that of Arctic states, they can make statements at gatherings if the Chair grants permission (2020c).

The Council, therefore, serves also as a platform for engagement between Arctic and non-Arctic states, who aspire to a greater presence in the region and a role in its governance. The Observer states have privileged access to the region, relative to the 24 other non-Arctic states which also have official Arctic policies or strategies, and stated aspirations in the region (Heininen 2020, 1).

The Arctic Council serves an important governance role, the Council does not have a mandate to address traditional security matters, of a military nature. This exemption is at the core of "exceptionalism", along with the focus on consensus. However, it means that legal and military matters are pushed to other multilateral fora and alliances. While United Nations bodies are representative of the fora and provide a rules-based framework for contesting issues such boundaries and the status of inland waterways, military alliances and strategic economic partnerships are member-based, and mutually exclusive of some Arctic Council members. The clearest example is the complex relationship between NATO and Russia, with growing concern within NATO for a possible Sino-Russian partnership (Arctic Institute 2019). These tensions are managed outside of the Arctic Council governing framework.

4. Climate Change and the Arctic

It is virtually certain that the Arctic will continue to warm more than global surface temperature, with high confidence above two times the rate of global warming (IPCC AR6 2021, 41)

The Polar Regions will be profoundly different in future compared with today, and the degree and nature of that difference will depend strongly on the rate and magnitude of global climatic change. This will challenge adaptation responses regionally and worldwide (IPCC 2019, 205)

Chapter 4 considers climate change in the Arctic. It provides a summary of the science from official bodies, comprising reports from the United Nations Intergovernmental Panel on Climate Change (IPCC), Natural Resources Canada (NRCan) and the United Nations Environment Programme (UNEP). These assess the scope and rate of climate change in the Arctic, and its potential impact on environmental systems and physicality. The NRCan reporting is most specific about the impact of changes in the Canadian Arctic territory and its effect on the region's inhabitants.

The data and consensus generated by the international scientific community affirms the base hypothesis that *climate change has significant implications on the Canadian Arctic.* The advance draft of the IPCC's Sixth Assessment Report concludes, "it is unequivocal that human influence has warmed the atmosphere, ocean and land. Widespread and rapid changes in the atmosphere, ocean, cryosphere and biosphere have occurred" (IPCC AR6 2021, 41). The report continues "it is virtually certain that the Arctic will continue to warm more than global surface temperature, with high confidence above two times the rate of global warming [causing] reductions in Arctic sea ice, snow cover and permafrost" (IPCC AR6 2021, 41).

As NRCan assesses that "the cryosphere is the most sensitive to the effects of climate change. The cryosphere includes sea ice, seasonal snow cover, glaciers and ice caps, permafrost, and river and lake ice. All of these are effective indicators of climate trends and important in various climate feedback through changes in energy, moisture and gas fluxes" (2019).

As Gillett et al. (2008) state, climate change is highly likely to be influenced by human activity, and not just natural variability occurring (2008, 750). This is also backed by the IPCC Fourth Assessment report, which has seen an increase in anthropogenic greenhouse gases since the 1970's with a 70 percent increase by 2004 (IPCC 2007, 72).

4.1 Defining the Scope of the Issue

This section will be focused on defining key concepts in this thesis, as well as going through reports on the issue of climate change and how it affects Canada. The reports under analysis will be derived from the IPCC, UNEP, Arctic Council (AC), the Arctic Yearbook and NRCan. The reports demonstrate there is a consensus within the scientific community, while also identifying minor diversions between the different supranational organisations.

Since Paul Crutzen and Eugene Stoermer introduced the word "Anthropocene" in 2000, the term has been broadly used to highlight the concept that the planet has entered a time when the global environment is shaped by humankind, rather than vice versa. The Anthropocene is the "Age of Humans". We have significantly altered Earth's land surface, oceans, rivers, atmosphere, flora, and fauna. By its emphasis on what humans have done and can do in the future, the word "Anthropocene" has served as "a call to action for environmental sustainability and responsibility" (Crutzen and Stoermer, 2000).

The natural world no longer exists separate from humanity. In the future, the world we inhabit will be the world humans have made. The geological strata we are now creating will record industrial emissions, and the disappearance of species driven to extinction. Human driven climate change "is planetary engineering without design. These facts of the Anthropocene are scientific, but its shape and meaning are questions for politics" (Purdy 2015).

Our definition of *climate change*, therefore, begins with the cause. It is the changes in the natural systems that result from *human* activity. These changes are so significant that they represent a geological era, named for its *human* source. The definition can be deepened with reference to the supporting science, and assessment of the effects of human activity in the natural world. The IPCC defines climate change as:

> … a change in the state of the *climate* that can be identified (e.g., by using statistical tests) by changes in the mean and/or the variability of its properties and

that persists for an extended period, typically decades or longer. Climate change may be due to natural internal processes or external forcing such as modulations of the solar cycles, volcanic eruptions and persistent *anthropogenic* changes in the composition of the *atmosphere* or in *land use*. (IPCC 2018a)

The IPCC definition focuses on phenomena occurring over extended periods of time. Similarly, the UNEP focuses on climate change as "attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods" (UNFCCC 1992). This definition has been in place since the 1992 Rio Earth Summit - 29 years ago - which produced the first global agreements on climate and environment.

Natural Resources Canada defines climate change as "a persistent, long-term change in the state of the climate, measured by changes in the mean state and/or its variability. Climate change may be due to natural internal processes, natural external forcing such as volcanic eruptions and modulations of the solar cycle, or to persistent anthropogenic changes in the composition of the atmosphere or in land use" (CCCR 2019, 4).

These three definitions share common traits, based on their inclusion of contributing factors from naturally occurring phenomena (NRCan) and human activity (NRCan, UNEP, IPCC). Phenomena in nature are not assessed by these sources as a significant cause of change, and are beyond human control. The focus, therefore, should be on what human beings cause and, therefore, can control. This is where action is possible to mitigate then reverse the negative effects of climate change.

Twenty-nine years after the Rio summit, therefore, it is no longer disputed in science that climate change is the consequence of human activity. The IPCC assesses "it is unequivocal that human influence has warmed the atmosphere, ocean and land. Widespread and rapid changes in the atmosphere, ocean, cryosphere and biosphere have occurred" (IPCC 2021, 5). The Panel further assesses that "global surface temperature in the first two decades of the 21st century (2001-2020) was 0.99 [0.84-1.10] °C higher than 1850-1909", commonly expressed in the literature 1.1 °C of change (IPCC 2021, 5). Climate change is an occurring phenomenon, and not a possibility for the future. Finally, the science is unequivocal that the

Arctic region, inclusive of the Canadian Arctic, is disportionately affected and warming at least double the global average (IPCC 2021; UNEP 2020; NRCan 2019; Bush et al., 2019, 5).

4.2 Assessment of the Intergovernmental Panel on Climate Change

Over the six Assessment Reports published since 1992 (AR1 1992), the IPCC has methodically documented the effects of climate change on the Arctic, first as temperature change and then as the effects of warming on the Arctic's physicality and conditions in the natural world. As highlights the IPCC AR6 assesses, generally to *high confidence*, that:

Human influence is the main driver of significant decreases – both seasonal and permanent – in Arctic sea ice and snow, and the melting of permafrost (AR6 2021, A.1.5, A.2.3, B.2, B.2.5, C.2.1).

The Arctic is *likely* to be practically sea ice free in September at least once before 2050, sooner and with more frequent occurrences if warming exceeds the 1.5 (B 2.5)

The number of extreme weather and extreme heat events will increase. The Arctic is projected to experience the highest increase in the temperature of the coldest days, at about 3 times the rate of global warming (*high confidence*).

The loss of sea and glacial ice and permafrost are part of a positive feedback cycle that accelerates global warming, sea level increase (A.4.3). Further, that melting permafrost is both changing the physical landscape of the Arctic and is contributing to the concentration of GHG in the atmosphere. With *high confidence,* the IPCC further assesses that the loss of permafrost carbon following permafrost thaw is irreversible at centennial timescales B.5.2).

4.3 Assessment of National Resources Canada

Canada's climate has warmed and will warm further in the future, driven by human influence. Global emissions of carbon dioxide from human activity will largely determine how much warming Canada and the world will experience in the future, and this warming is effectively irreversible. Both past and future warming in Canada is, on average, about double the magnitude of global warming. Northern Canada has warmed and will continue to warm at more than double the global rate. (NRCan 2019, 6)

Natural Resources Canada issued a series of reports on Climate Change in Canada, between 2019 and 2021. The reports detail the Government of Canada's assessment of the character

and rate of change, its differentiated impact on different parts of the country, and the outline of Canada's mitigation and adaptation strategy.[7] Overall, NRCan assesses that the Canadian climate is changing, and that every part of the country is affected. Evidence determines that "the effects of widespread warming are evident in many parts of Canada and are projected to intensify in the future" (2019, 6).

As headlines from NRCan's 2019 assessment on the character and effects of climate change in Canada's Arctic and Northern territories, the evidence concludes that warming in the Canadian Arctic is occurring at about three times the global rate, and at least two times the global average in the rest of the country. Change comes with significant variations in historical climate patterns (2019, 6; 85). NRCan assigns a *high degree of confidence* to its findings, which exceed the IPCC's AR6 finding. In addition:

Canadian areas of the Arctic and Atlantic Oceans have experienced longer and more widespread **sea-ice-free conditions.** Ice coverage in Canadian Arctic marine areas, including the Beaufort Sea and Baffin Bay, has declined at 5% to 20% per decade since 1968, depending on region. The Canadian Arctic is projected to have extensive ice-free periods during summer by mid-century. The last area in the entire Arctic with summer sea ice is projected to be north of the Canadian Arctic Archipelago (2019, 5.3).

Canada's **Arctic and alpine glaciers have thinned** over the past five decades due to increasing surface temperatures; recent mass loss rates are unprecedented over several millennia (very high confidence). Mass loss from glaciers and ice caps in the Canadian Arctic represent the third largest cryosphere contributor to global sea level rise (after the Greenland and Antarctic ice sheets) (very high confidence) (2019, 199).

Permafrost temperature has increased over the past 3-4 decades (very high confidence). Regional observations identify warming rates of about 0.1ºC per decade in the central Mackenzie Valley and 0.3ºC to 0.5ºC per decade in the high Arctic. Active layer thickness has increased by approximately 10% since 2000 in the Mackenzie Valley. Widespread formation of thermokarst landforms have been observed across northern Canada (2019, 5.6).

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[7] The series include reports on Regional Perspectives, National Issues, and the Health of Canadians in a Changing Climate, https://www.nrcan.gc.ca/climate-change/impacts-adaptations/canada-changing-climate-reports/19922

Melting of sea ice, snow cover and Arctic glaciers are embedded in a positive feedback system that contributes to Climate Change. Snow and ice reflect considerable solar energy back to space Warming melts snow and ice, causing the now darker surface to absorb more solar radiation and heat further (2019, 87).

The NRCan report, therefore, also describes a Canadian Arctic being transformed in its physicality (loss of sea ice, glaciers, snow cover, and a landscape that is losing its permafrost); it is natural systems (weather, water, landscape and soils), and; the types of vegetation and animal life able to survive in the new environment. These changes have been monitored and reported since the 1960s, and have accelerated in recent decades.

4.4 The Impact of Climate Change

There is a common consensus, therefore, in Canada and across the Arctic region, that climate change is occurring, and the pace of change is accelerating. The impacts are also clear, Climate change has, and will have in the future, a negative effect on Northern communities and the territories they inhabit.

Arctic sea ice is at its lowest recorded average levels, both in the summer and winter (IPCC 2021, 9). Temperatures in the Arctic will continue to increase at about triple the global average (2021, 19), leading to exacerbated effects in the Arctic, with the timeframe to counteract the changes lessened compared to the rest of the globe. One particular consequence of temperature increases is the effect it has on marine life, with increasing marine heatwaves expected, leading to changing migratory routes, and potentially decimating marine life which depends on the ecology in the Arctic waters (2021, 19).

As Canada's Changing Climate Report states, sea ice, differentiating between winter and summer sea ice, in terms of thickness and coverage of the Arctic Waters has greatly diminished over the last two decades. The sea ice decreased by 20% a decade for summer sea ice, and 8% for winter sea ice (Derksen et al. 2019, 198; 211). The changes in sea ice have a significant effect on human security, specifically for the indigenous communities in Northern Canada and the Arctic. They have historically used the sea ice as a route for transportation, as a hunting ground, and location for cultural practices since settling the area (2019, 211). If the

indigenous communities fail to adapt to their new circumstances, they will most likely have to migrate to other parts of Canada, thereby damaging the northern coastal communities.

Seasonal snow cover in the Canadian North and High Arctic is expected to decrease at a rate of 5% a decade up until 2050 if current negative climate change trends are not mitigated (Derksen et al. 2019, 208). Changes in snow cover in the middle of the winter periods will be minimal, however in the "shoulder" months - months right after the traditional winter months, the difference in quantity will be more noticeable as time passes (2019, 209). This will therefore lead to a domino effect where every year snow will increasingly come down as rain, leading to increases in the average temperature in Canada and the Arctic.

The melting of glaciers and ice caps has a profound effect on the cryosphere. "Mass loss from glaciers and ice caps in the Canadian Arctic represents the third largest cryosphere contributor to global sea level rise" (Derksen et al. 2019, 222). As seen in July 2020, the St. Patrick Bay ice caps on Ellesmere Island had completely disappeared, and because of climate change it had occurred two years ahead of schedule (Specktor 2020). While globally, glaciers and ice caps, based on current trends, will suffer an 80% loss of volume (Radić et al. 2014, 37). If these predictions are accurate then the global sea level should rise by 41mm by 2100, while having a greater impact on the Canadian coastline and communities (2019, 225). One worrying factor is that inland ice caps account for a large percentage of annual freshwater runoff, if this source were to vanish, then other methods would need to be employed to gather the resource for communities affected.

Like sea ice, lake and river ice play a vital role for indigenous communities in the Canadian Arctic, acting as an important supply chain link (Derksen et al. 2019, 226). It is estimated that melting of the ice will occur 10-25 days earlier, and freeze 5-15 days later by 2050 (2019, 226). It is difficult to predict the effect of climate change as a whole on lakes and rivers, as conditions vary from area to area, although as noted there is a general consensus, the process could therefore be more rapid or moderate location specific.

The final observable changing environmental pillar in the Arctic is Permafrost. Permafrost is the physical layer which is under the "active" layer, or topsoil, snow, and so forth. It covers approximately 40% of the Canadian Arctic (Derksen et al. 2019, 233). The average temperature in the permafrost has gradually risen since measurements began two

decades ago, ranging from 0.2*C to 0.9*C per decade (2019, 234), while it is predicted that average temperatures will be up 8*C by the end of the century (2019, 239). As the permafrost thaws, the ground becomes increasingly unstable, leading to negative effects on the environment and infrastructure in the Canadian Arctic (NRCan 2019). As the permafrost thaws, another detrimental effect is the increased release of Greenhouse gasses (Welch 2020), and as more is released temperatures will continue to rise, leading to greater quantities of thawing occurring in the future.

5. Theorising New Dimensions of Security in the Arctic

Chapter 5 presents a conceptual framework for "securitising" the Canadian Arctic, in response to climate change. The Chapter begins with a recognition that "the Anthropocene changes the conditions under which security is pursued or the means by which it can be achieved" (Greaves 2021). This requires consideration of how climate interacts with a broad set of "referent objects" in the Northern and Arctic regions of Canada, and the connectivity between those referent. This expansion erodes the centrality of the State as a referent object, making the argument that other forms of human collectives and organisations are worthy of being secured, and a focus of security studies. As a *universal* threat, climate change affects the human being and the Natural World (non-human animal and plant life, and the foundational climate and environment systems which support life). These also become referent objects, in need of securing. "Connectivity" means insecurity for humans and the natural world becomes a material threat to national security.

5.1 The Arctic; Exceptionalism and "High North-Low Tension"

The Arctic is often perceived as a region apart, located somewhere outside of geopolitics and state-centric security dynamics. The region's special place in security discourse has been referred to as "Arctic exceptionalism"; an aspiration that the security concerns affecting the rest of the world do not apply in the far north (Gjørv and Lanteigne 2020). Rather, the Arctic exists in a High North yet Low-Tension security paradigm (Stravridis 2013). Its climate change-driven colliery is the "Arctic Paradox"; the things that make the Arctic Region stable may in fact contribute instability, under rapidly changing conditions.

Exceptionalism derives from the factors that make the Arctic unique. First, the region's climate and geography historically are too hostile for large-scale state-centric activity, and not suited to military confrontation. When asked how he would respond to news of a foreign into the Canada's far north, then-Chief of the Defence Staff, General Walter Natynczyk, famously replied, "my first duty would be search and rescue" (Deshayes, 2009; Stravridis 2013). Other precursors for inter-state competition are also absent. Small populations, inaccessible economic resources, and the impossibility of transport across vast frozen space. The Arctic's

security profile was raised during the Cold War. Notwithstanding, it did not emerge a primary theatre of state security interest or competition (Gjørv and Lanteigne 2020).

The second reason was the choice of the eight Arctic nations to pursue a regional governance model that emphasised cooperation on matters related to human and economic development, the environment and climate change, and science. Security matters are explicitly placed outside of the Arctic Council's deliberations (Ottawa Declaration, 1996: Art 1).[8] The governance assumption underlying the founding Ottawa Declaration was that physical conditions rendered inter-state competition in the Arctic untenable, and that cooperation was the preferred option. Non-Arctic security issues should not filter into the regional governance. This model has been credited with keeping the Arctic at peace and in relative stability, despite changes in regional conditions and the shifting geopolitical dynamics of recent decades (Arctic Institute 2019).

The concept of "exceptionalism" was always in equal parts aspiration and illusion. During the Cold War, the Arctic was a site of great power strategic competition, but not its main theatre. The practice of locating the Arctic region outside of geopolitics held during the immediate post-Cold War period and into the new millennium. However, the effects of, and interaction between shifting geopolitics and climate change are eroding the Arctic's exceptionalism. Conditions have made it difficult to compartmentalise the region from events elsewhere, driving concern for a new era of strategic competition in the Arctic.

Tensions have risen on a broad range of issues between Russia, the United Stated and western-aligned Arctic Council members. China's rise, its claim to being a "Near-Arctic" state and increasing strategic convergence with Russia on Arctic matters further entangling the region in great power competition. The United States has sharpened its rhetoric about a future of strategic competition with China and Russia in the Arctic.[9] The new dynamics influence NATO's military posture, with one Russian diplomat noting that NATO exercises have become a conduit for non-Arctic states to engage within the region on military matters (Sevunts 2021).

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[8] Article 1 of the Ottawa Declaration (1996) states that the Arctic Council "should not deal with matters related to military security".

[9] For example, see "Looking North: Sharpening America's Arctic Focus, Speech by Michael R. Pompeo, Secretary of State, Rovaniemi, Finland, May 6, 2019", https://www.state.gov/looking-north-sharpening-americas-arctic-focus/

Arctic security dynamics, therefore, are increasingly determined by developments in adjacent regions, and the broader dynamics of global military competition. "Near-Arctic" and "Non-Arctic" states are encroaching on the region, making a claim to participation in governance and access to opportunities, introducing their interests into Arctic discourse (Gjørv and Lanteigne 2020; Depledge et. al., 2019). These entangle the Arctic Exceptionalism in global power competition.

Geopolitics interacts with a second factor. Climate change erodes the Arctic *status quo*, by transforming the region's physicality. The conditions that rendered inter-state competition in the Arctic untenable and incentivised cooperation are literally melting away, as the Arctic warms. The change is one of relative degrees. The Arctic will remain a physically hostile environment, with difficult to extreme conditions. However, disappearing sea ice opens access to shipping routes, and reveals natural resources that were previously inaccessible. These transport corridors and resources are located within the sovereign territory of existing Arctic states. The Arctic's changing physicality is creating opportunity that draws in Near and Non-Arctic nations, who seek a role in the region's governance and development.

As the conditions for "exceptionalism" erode, there is no consensus on a new security paradigm for the Arctic. At least two narratives are emerging, in the security discourse and literature. The narratives are not mutually exclusive. However, they differ in scope of their "Referent Object(s)"; what is to be secured.

The first narrative assumes that the Arctic has become an "area of global power and competition" (Pompeo, 2019). The narrative is based in a state-centric and realist understating of security, where security is achieved by maximising power relative to other states. It posits that climate change is transforming the physical landscape of the Arctic, opening the region to forms of economic development that will escalate competition and conflict between states. It assumes the end of Arctic "exceptionalism", and the region's integration into geopolitical dynamics. In this narrative, climate change drives a narrowing of the Referent Object scope, from broad inter-state cooperation of the Arctic Council's governing declaration, to focus on states.

The second narrative defines the Referent Object scope more broadly. Nation states remain an important agent in security matters. However, also to be secured are human beings – individuals and in their collectives – and of the natural world itself, where all life and

supporting environmental systems exist. It argues that these three referent objects – the states, human beings and the natural world – are interdependent and must be secured as one whole. Climate change cannot be countered by individual states acting alone in the anarchic framework of realism, nor contained with the use of military force. Security, therefore, is maximised by cooperation between states, by the strengthening of different levels of government, up to regional and global governance.

In both narratives, the impact of climate change drives a shift in the Arctic security agenda. Climate change is often described as a "threat multiplier" that is fundamentally changing the security environment. Climate change introduces new threats, as it also accelerates changes that aggravate pre-existing vulnerabilities, and creates new forms of uncertainty. These threats are "characterised by a new kind of interconnectedness and complexity that makes them less predictable and impossible to be tackled through containment and separate security practices" (Kalliojärvi 2019, 3). Their management requires new theoretic models, and perhaps a model of political and social organisation that does not yet exist.

5.2 Theorising Arctic Security

5.2.1 Defining Security and its Referent Objects

The concept of security is subjective and contested. Notwithstanding, Williams and McDonald observe that many definitions converge around a simple concept; "Security is the alleviation of threats to cherished values and institutions, particularly when the threat puts their survival at risk". While "survival" is the minimal threshold, security in its full meaning provides the conditions for pursuing aspirations (Williams and McDonald 2008, 5). Survival is a product of security, "but security and survival are not synonymous". While survival is the essential condition, security "provides the conditions to fashion ambitions and objectives" (2008, 5).

> *Referent Objects in Security Theory*
> A referent object is "an object, or ideal, that is being threatened and needs to be protected".

In Paul Williams definition, security is an inherently political good. It involves choices about what is to be secured – the Referent Object(s) of security – the actions needed to mitigate threats, and the allocation of resources to these tasks relative to other needs.

Consequently, "it matters a great deal who gets to decide what security means, what issues make it on to security agendas, how resources are allocated … and, crucially, what happens when different visions of security collide" (Williams and McDonald 2008, 5).

5.2.2 Neo-Realism and States as the Referent Object of Security

Realism emerged during the 1940s, as the self-defined successor to classical traditions of the ancient period (Morgenthau 1948). The "golden era" occurred during the Cold War, with eventual expansion into different schools of Neo-Realism (Waltz 1979; 1988). The Realist approach to security tends to be "state-centric". They prioritise the nation state as the referent object of security. The Realist and neo-Realist schools focus on contestation between states and military conflict as the main threats to the state. The foundation of security theory was traditionally set on the nation state, and military threats to integrity of state sovereignty. The "state" as the referent object to be secured.

For Realism, the State is both the primary agent of security and its referent object. The State is central because the State is understood to dominate security conditions, at the national and international levels (Buzan 1991, 25). The existence of more than one State in a system generates a security dilemma, as states are threatened by the existence of other states (Buzan 1991, 25). The central problem of security, therefore, becomes the uncertainties and fear that power competition generates.

Neorealism contends that international politics can only be understood by emphasising how structures affect actions and outcomes (Waltz 1988, 618). Neo-Realism agrees that states are at the centre of security. Anarchy is still the essential structural characteristic of the international system, and states are required to provide their own security against threat. However, Neo-Realism focuses on international *systems*, how states respond to the factors that constrain or enable their actions, and how the causal effects of those actions ripple with the system to create their own effects. Outcomes, therefore, depend on situations and characteristics of states, their capacities, decisions and their actions.

Although based in realist concepts, neorealists see the world as less chaotic or concerned with human nature. Focus is on the structure and systems shape state behaviour, rather than on anarchy. Some order can be achieved from alliances, and by cooperation between States (Padrtova 2021, 31). In addition, state-based perceptions of security can

fluctuate in response to the emergence of new types of threats to the state's existence, and ongoing political decisions about security priorities. Neither the perception of threat nor the response, therefore, are fixed.

On systems, cause and effect, Waltz observes:

"From the vantage point of neorealist theory, competition and conflict among states stem directly from the twin facts of life under conditions of anarchy: States in an anarchic order must provide for their own security, and threats or seeming threats to their security abound. Preoccupation with identifying dangers and counteracting them has become a way of life. Relations remain tense; the actors are usually suspicious and often hostile even though by nature they may not be given to suspicion and hostility. Individually, states may only be doing what they can to bolster their security. Their individual intentions aside, collectively their actions yield arms races and alliances. The uneasy state of affairs is exacerbated by the familiar 'security dilemma', wherein measures that enhance one state's security typically diminish that of others." (1988, 619).

In the realist world of competing self-interested state actors, security revolved around preserving the sovereign integrity of the state, its territory and critical institutions. Security means alleviating threats to the state, especially those threats that might threaten the state's survival (Williams 2008). Security is achieved through maximising power, in relationship to and over others. Security, therefore, as synonymous with the accumulation of power. In this context, security is understood as a commodity. To be secure, a state processes certain abilities and assets, from which power relative to, and over, others can be derived. A dynamic that provokes reaction, as other states seek to balance or maximise their own power. Threats to states come from other states (Williams 2008).

Power is the means to achieve security and should be maximised. There are different means of achieving power, based on the resources and capabilities of a state. Regardless, States are positioned as the most important agents and referents of security in international relations. States are threatened by other States.

The evolution of realist theory was driven by the emergence of multiple variants that responded to changing international conditions; the end of Cold War, emergence of a

multi-polar world, transnational terrorism and new threats posed by non-state actors. Realism has proven durable and remains a dominant contributor to the practice and study of security. Hence Realist schools are influential in the approach to Arctic Security, which cast the region's opening in the frame of strategic competition.

Notwithstanding, a second line of security has formed around relations, rather than anarchic competition. Security derives not from the ability to exercise power over others. Rather, by achieving security without depriving others of their security. Relevant are notions of common or collective security, achieved through cooperation. This opening of critical security thinking challenges the centrality of the state and national security (Buzan 1981). It implies other forms of human collectives and organisations that can be the object of security. Critical thinking, therefore, offers a different approach to securing the Arctic.

5.2.3 Towards a hybrid conceptual framework for Arctic Security

Traditional theory for international relations focuses on the competition for power between nation states, usually expressed in military terms as coercive ability. The state is the "referent object" to be secured. The focus is on the military force, and on other factors that might influence power dynamics between states. Two things have contributed to the evolution of security theory since the end of the Cold War. First, the emergence of Critical Security Studies, which broaden the security agenda away from a "state-centric" approach, to incorporate other "referent objects".

Second, and less well studied are the security consequences of *anthropogenic climate change*; a change in natural and human systems that occurs in response to a changing climate, which in turn is caused or influenced by human activity. Climate is the independent variable in security dynamics. It exists outside of the power of the state. However, the effects of climate change can disrupt state stability, and in the process alter interstate power dynamics. At the same time, Climate change is already acting on other "referent objects" identified in Critical Security Studies. In the Arctic, where anthropogenic climate change is occurring at its most accelerated rate, (IPCC, 2018), the security of states, human beings and society, of the environment and natural world are interrelated and co-dependent.

Climate change disrupts traditional security dynamics. Climate is a new independent variable, external, acting beyond the immediate control of individual states but affecting them

all. It is a multiplier of threats that interact with other sources of insecurity, amplifying their effect and changing their character. At the same time, Climate change is creating new sources of insecurities. A new approach to security in the Arctic, therefore, is implicitly the search for the new referent objects of security- and the interventions that will diminish threats to them. Climate hazards come in different forms and timescales, from rapid onset storms and floods to slow onset droughts. Interstate conflict is only one potential security outcome (Busby 2020).

Aspects of traditional international relations theory are still relevant. Climate-driven changes to the Arctic's physicality create new opportunities for inter-state competition – military and economic – as Arctic territory opens, and resources become more accessible. However, no single theory combines the state with other non-state "referent objects", to assess in which domains limited change is affecting the broader security picture. A blended approach, therefore, is needed to capture changes in Arctic security, and Canada's emerging Arctic security policy. This blending is part of building a new approach to Arctic security. Attention will be given to traditional International Relations theory and the concept of realism, and to emerging theory related to Critical Security Studies. These explore the linkages between climate change, Human and Environmental security, as climate change, energy, water, food, population, and development.

Critical security studies have been in the last two decades been dominated by a focus on terrorism and going away from traditional forms of hard security threats such as wars between states, with the September 11th attacks seen as a turning point. In this sense I would agree with Peoples and Vaughan-Williams (2015) that events such as Darfur, Climate change, and so forth should be given more attention (2015, 8). Oversimplification of acts of terrorism by labelling events "9/11", "7/7", "Mumbai", is also an issue, as it does not do much in terms of explaining why these events occur. The simplified labelling also leads to individuals in some cases believing that events occurring prior to September 11th as less critical to a rounded analysis of security theory thereby diminishing the importance of a historical review (2015, 8).

There are two different camps regarding how climate change orientated security theory should be categorised (Kalliojärvi 2019, 10-11). One camp deems security to be a "fixed and inflexible" concept, which in turn will lead to a militarisation of the environment, whereas the other camp the focus deviates towards the importance the concept of Climate Change and

how security theory needs to adapt to modern circumstances (2019, 10-11). The end of the Cold War saw traditional forms of security threats, mainly war, diminish, and replaced by poverty, terrorism, crime, Climate change, and so forth, these threats are not easily predicted, while also being factors that can exacerbate the effects of other threats, and are not easily dealt within the traditional parameters of security theory (2019, 13). Climate change creates challenges to security through creating insecurity, as prominently seen by the "Arctic Paradox".

The "Arctic Paradox" refers to goals of sustainable development in the Arctic and how they contradict each other (Russell 2015). While an actor wishes to preserve the Arctic, that same actor also wants to extract the resources which become available because of Climate change in the Arctic (2015). The state wishes to preserve the Arctic, while at the same time wishing to take advantage of the potential economic gains the untapped resources in the Arctic contain. Extracting and developing these resources will probably need foreign actors, whether private or state run to participate. Thereby, potentially challenging for example Canadian claims of internal waters and sovereignty over the Northwest Passage because of increased use of the straits for transport of equipment and resources.

Kalliojärvi (2019) argues that security as a concept in conjunction with Climate change shouldn't necessarily be changed, but the rationale behind actions taken by actors in the name of security need to be changed (2019, 16). Security throughout time is viewed as an outward issue, but Climate change has widespread effects, ranging from the international community to small Inuit villages along the NWP suffering from soil erosion (Watt-Cloutier, 2018). This would also agree with the Aberystwyth normative approach to security studies created by Booth and Jones which primary focus is on the individual and distances itself from the traditional view of militarisation as a security threat, focusing rather on the "emancipation of the individual" (Peoples and Vaughan-Williams 2015, 9).

Critical security is relevant to understanding the effects of climate change on security dynamics. Increased effects of climate change will lead to greater sovereignty disputes in the form of greater access to the Northwest Passage and, therefore, contested claims of passage from other states whom deem it to be an international strait (mainly the USA and EU, Russia will not claim it to be an international strait because that would lead to the NSR also gaining that classification). This will therefore allow a macro approach in the analysis while focusing

on the effect of critical security theory in relation to soft and hard power approaches implemented by states.

5.3 Human Security and Climate Change

The search for security … lies in development, not in arms (UNDP 1994, 1)
Climate change threatens human security because it undermines livelihoods, compromises culture and identity, increases migration that people would rather have avoided, and because it can undermine the ability of states to provide the conditions necessary for human security.
(Adger et al. 2014, 762)

5.3.1 Human Development and Security

Human security evolved as part of a broader "human development" agenda, and a necessary condition for realising development objectives. Human security responded, in part, to the appearance of new globalisation-driven threats, during the early post-Cold War period. It was arguably mainstreamed into policy debate by the 1994 *United Nations Human Development Report* (UNDP 1994), and instrumentalised in global policy frameworks such as the *Responsibility to Protect* (2005).

In its 1994 report, UNDP assessed that the concept of security was interpreted narrowly, more about the security of nation-states than people. "Forgotten were the legitimate concerns of ordinary people who sought security in their daily lives. For many of them, security symbolised protection from the threat of disease, hunger, unemployment, crime, social conflict, political repression and environmental hazards" (UNDP 1994).

UNDP proposed that, in the post-cold war political climate, the "concept of security must change urgently in two basic way:

- From an exclusive stress on territorial security to a much greater stress on people's security.

- From security through armaments to security through sustainable human development."

The list of threats to human security were organised under seven main categories: Economic security; Food security; Health security; Environmental security; Personal security; Community security, and Political security (UNDP 1994: 24). On environmental security, the UNDP assessed that "threats countries are facing are a combination of the degradation of

local ecosystems and that of the global system." The report, therefore, signalled concern for the effect of a changing climate, noting its impact on the environment and people (UNDP 1994:9).

The seven categories of frequent threats were not to be considered in isolation. Rather, threats are interconnected, and threat values change according to context (Gasper and Gomez 2014: 3). Human security, therefore, was multidimensional. Securing humans required and integrated and contextually relevant interventions, across a range of issues and threats.[10]

Human development, therefore, was a process that would address the root causes of human insecurity rather than just its consequences. These *roots* focused on the counterpart concerns of development – on deprivations from basic needs, and the vulnerabilities, risks, and "forces of disruption and destruction" that might generate threats. Human security analysis is also considered "connectivity". The total context in which people lived was compromised by interconnecting systems, "and of the threats and opportunities that can arise from factors in various parts of this life environment, and from their intersection and interactions" (Gasper and Gomez 2014, 2).

The concept of human security evolved in two directions: (1) a comprehensive vision of security and development focused on human beings (freedom from want), and (2) a linkage of the concept tied to protection of civilians in armed conflict (freedom from threat, in the post-Cold War escalation of intra-state civil conflicts) (Suhrke 2014, 186). The latter was expressed in the *Responsibility to Protect* (R2P) agenda, among other initiatives.[11]

5.3.2 Human Security in Canada's International Policy

Canada was an early adopter of both lines of the human security agenda, and an advocate of the approach within its diplomacy. Canada's 2000 Foreign Policy for Human Security, "Freedom from Fear" defined "the objective of human security is to safeguard the vital core of all human lives from critical pervasive threats, in a way that is consistent with long-term

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[10] See the *United Nations Human Development Report* (UNDP 1994), Chapter Two, "New dimensions of human security", pp. 22 – 47.

[11] The Responsibility to Protect (R2P is a global political commitment, endorsed by all member states of the United Nations at the 2005 World Summit. R2P proposes action on four key concerns, to prevent genocide, war crimes, ethnic cleansing and crimes against humanity, https://www.globalr2p.org/what-is-r2p/

human fulfilment" (DFAIT 2002, 2). The policy responded to globalisation-driven changes in the character of threats, particularly the changing nature of inter and intrastate armed conflict. Putting human beings at the centre of the security agenda was intended to promote human development as a complement to national and international security. The concept took its shape from the human being, which is the "vital core" – referent object – to be safeguarded.

"Freedom from Fear" was deliberately *protective*. It recognised that people and communities could be threatened by external events beyond their control, and that the security of human beings and states was intertwined. State institutions became "duty bearers", with an explicit responsibility for providing human security. As a component of Canada's foreign policy, the concept also raised fundamental issues about the international order, and the role of multilateral institutions in addressing global threats to human security (Alkire 2003, 31-35).

There has been an interplay in Canada's foreign policy, therefore, between theory and the practice of human development and human security for 30 years or more. Evolving from the original UNDP conceptual framing, climate change is a more recent globalised threat, of which human beings are a referent object to be secured. The effects of climate change are *universal*, having some form of impact on every human being.

Human security's emphasis on deprivation and vulnerability draws attention to the "differential consequences of climate change for individuals and communities resulting first and foremost from disparities in human development" (Gasper and Gomez 2014, 3). These consequences derive from multiple factors present in the Arctic context – "connectivity" – the understanding of which can provide a framework for response and adaptation policies.

On connectivity, Greaves notes that "human security threats are not freestanding but overlap with four other areas of Canada's national security that are affected by climate change: economic threats; Arctic threats; humanitarian crises at home and abroad; and the threat of domestic conflict. Each of these contributes to human insecurity but can also be understood as threatening the national security interests of the Canadian state."

5.3.3 Human Security, the Arctic and Climate Change

If security is traditionally seen from the optic of state power, resource extraction and sovereignty, then applying a human security framework for Arctic inhabitants allows for consideration of climate-induced threats to: i) people, communities and institutions, and; ii)

the connectivity between climate threaten persons for the state, its internal stability and relations with other states. Table 7a. offers a framework for assessing these relationships.

Table 7: Conceptual Framework for Human Security		
Dimension of Human Security	**Climate Generated Deprivations and Vulnerability**	**Connectivity with the broader Security Agenda**
Deprivation (freedom from want)	Climate influenced deprivations (culture, livelihood, food, housing, transport, health, as possible deprivations from the NRCan assessment 2019)	Connectivity between Human Security and other Security Categories (National Defense Security and Security of the Natural World) Canada's Human Security Policy Response
Vulnerability (freedom from threats)	Climate influenced vulnerability (extreme weather events and disasters)	
Connectivity (interaction and differential consequences)	How climate influenced deprivation and vulnerability interact and change other dimensions of security.	
Resilience (the enabling capacities that people need to address deprivations, and mitigate, adapt to, and overcome vulnerabilities, at every level of society). Resilience is, in part, based in the policies of states, and the resources allocated to security humans.		

Within this framework, security is a common good, shared between them and based on mutual dependence. Insecure people and communities, threatened by extreme weather events, and food, livelihood and culturally insecure, served by stressed public institutions and infrastructure, may contribute to social instability and weaken the state itself, internally and externally. The state has the responsibility of "duty bearer", with a special responsibility to protect Arctic inhabitants.

6. Case Study: Canada's Arctic Security Policy

"The geographic barriers that once kept our homeland beyond the reach of the most conventional threats no longer guarantee North America as a sanctuary. The Arctic is no longer a fortress wall, but an avenue of approach for advanced conventional weapons and the platforms that carry them."

NORAD Commander General Terrance O'Shaughnessy (Lackenbauer 2021)

Chapter 6 reviews Canada's Northern and Arctic policy, focusing on how the framework intends to address Arctic Security at the regional, national and local levels. The Chapter summarises how traditional and non-traditional security threats are perceived in each of these dimensions, and the actions taken to securitise referent objects. It looks also evidence of an integrated approach to climate action, traditional and non-traditional security framework.

6.1 An Overview of Canada's Arctic and Northern Security Framework

The Arctic is evolving into a multidimensional security complex, incorporating new traditional and non-traditional security dynamics. It no longer appears to be a regional complex. Rather, the Arctic is experiencing an accelerated integration into global security dynamics, as a *primary* location for competition between a growing number of state and non-state actors, consistent with the accelerated rate of warming; two to three times the global average.

The impact of a new variable – climate change – into the Arctic's previously frozen security dynamic, is generating new referent objects to be secured, human and in the natural world. Within this complex, there are four spatial security dimensions where policy action may be needed, including the Global, Arctic Regional, National and Local dynamics (see Table 8 below). At the same time, perceptions of security held by state and non-state actors have also evolved, including the influencing capacity of some social collectives - Canada's First Nations organisations among them - shaping government decisions about security priorities.

Table 8: Security Dimensions on Different Scales

Security Dimension

Global Security challenges originating outside of the Arctic, and influence states in and outside of the region.	Arctic states' engagement/ cooperation with non-Arctic states, and affiliated non-state actors.	Climate Change enables Arctic integration into a global security dynamic, as a primary site of competition.
Arctic Regional Threats that are regional in their scope and effect and require cooperation.	Cooperation between states in the region, acting in consultation with representative non-state organisations.	Disaster management, Coast Guard cooperation, fisheries, environmental protection, pollution.
National	State and society action, focused on traditional and non-traditional security.	Expanded and dual role of states addressing external and internal threats.
Local Security threats that are directly connected to the life of Arctic inhabitants.	Cooperation between communities, including Indigenous peoples.	Human security (food, health, water, housing, infrastructure), indigenous rights, sustainable development, disaster risk mitigation, among other issues.

*Adapted from Padrtova (2021: 37). Padrtova' s Figure 3.2 does not include a "National" level, or the dual role of states in addressing external and internal threats.

Table 9: Canada's Approach to Securing Northern and Arctic Territory

Dimension

Global	Diplomatic and Security Actions in multilateral and with allies	Climate Action within global fora (UNFCCC), Defence policy and alliances (NATO and NORAD), Diplomatic action to support Human Security and Rules-based multilateral architecture.

Regional	Diplomatic, Security and non-state actions to promote regional cooperation.
National	Whole of society approach to
Local	"Whole of government" approach to development in the Northern and Arctic territories.

6.2 New Defence Security Dynamics in the Canadian Arctic

> The future security of the Arctic is inseparably connected to the response of Arctic states to new challenges. These include conflicts outside the region, as well as increased interest in the Arctic manifested by countries that are geographically not directly linked to the region (Padrtova 2021, 40)

Two broad narratives emerge from the literature on Arctic security. The dominant narrative is Neo-Realist, focused on how climate is altering the structural conditions for state competition. Climate is changing the structural parameters of interaction and competition between states, by opening the Arctic to new forms of economic and military activity. States are altering their behaviour within these new structural parameters, intensifying competition. Connectivity is drawing in non-Arctic States, increasing the complexity and density of interstate exchanges, and integrating the Arctic into larger geopolitical dynamics.

This is the "Scramble for the Arctic" scenario, state-focused and concerned with power and competition. The narrative assumes the erosion or end of Arctic exceptionalism, and the formation of new alliances between states with similar interests. Regional stability is conceived as the balance of power achieved between state actors and alliances. The Neo-Realist literature anticipates a growing tension and militarisation of the Arctic region, on the part of Arctic states with the possibility of non-Arctic states taking some role in military dynamics as their interests expand. It identifies at least three potential drivers of future tensions. In part, they are generated by the interaction between pre-existing conditions with

the effects of climate change. There is at least one new and significant effect, with the entry of non-Arctic States. They relate in a causal chain that the literature believes will escalate tension.

The causal chain in the Neo-Realist perspective begins with economic interests driving new forms of regional competition (Heininen, Sergunin, and Yarovoy 2014). The Arctic is perceived as a site of resource extraction, and of transit for shipping traffic. The effect is to integrate the Arctic into global economic and transportation systems, as a source of materials or corridor for the global movement of goods, to productive activity and markets outside of the region. The literature anticipates increased competition for these assets, between states and with the involvement of non-state commercial actors.

Most resources (sites of extraction) and inland waterways (transport corridors) are located within the settled territory of sovereign Arctic states. Structural conditions affecting economic competition will include capacity of territory-holding states to enforce their claims, and their willingness to allow extraction and transit. Further, there are longstanding and unresolved sovereignty questions across the Arctic (Lackenbauer and Huebert 2017, 5). These include territorial and boundary disputes, maritime limitations and the status of waterways and limits of continental shelves, where two or multiple sovereign states have claims. Within the "exceptionalist" framework, Arctic nations have taken a pragmatic approach to these issues. Integration into geopolitical dynamics, with the involvement of self-interested non-Arctic states, is likely to change how disputes are managed, and to harden positions.

Table 10: *US National Security Estimate; Climate Change and International Responses Increasing Challenges to US National Security Through 2040*
Warming is likely to surpass the 1.5C UNFCCC target, intensifying the physical effects of climate change, creating a period of heightened geopolitical tension. In the Arctic: ● *We assess* that Arctic and non-Arctic states almost certainly will increase their competitive activities as the region becomes more accessible because of warming temperatures and reduced ice. ● Military activity is likely to increase as Arctic and non-Arctic states seek to protect their investments, exploit new maritime routes, and gain strategic advantages over rivals. ● The increased presence of China and other non-Arctic states very likely will amplify concerns among Arctic states as they perceive a challenge to their respective security and economic interests. ● Contested economic and military activities will increase the risk of miscalculation. ● Deescalating tensions is likely to require the adaptation of existing or creation of new forums to address bilateral or multilateral security concerns among Arctic states. *(October 2021)*

As the US Department of Defence Quadrennial Defence Review stated, "climate change could have significant geopolitical impacts around the world, contributing to poverty, environmental degradation and the further weakening of fragile governments" (Department of Defence 2010, 85). Military activity is likely to increase as Arctic and non- Arctic states seek to protect their investments, and gain strategic advantages over rivals (NIE 2021, 8; see highlights from the estimate in Table 10).

Scenarios include the formation of new alliances, primarily competition between the United States (and allies) and an emerging Sino-Russian alliance. They may also reflect the filtration of geopolitical tensions elsewhere into the strategic behaviour of the Arctic state, as has occurred since the Russian annexation of the Crimea and the Ukraine, and as Arctic states recognise the region as becoming more central to their interests. Contested economic and military activities in a crowded Arctic will increase the risk of miscalculation and accidental conflict (NIE 2021)

Russian policy preceding the Cold War has been open to greater collaboration, as seen by the several Gorbachev "Zone of Peace" speeches relating to the wish on behalf of the Soviet Union for the demilitarisation of the Arctic, and making it a nuclear weapons free zone through the Murmansk initiative (Åtland 2008, 293). More recently, former Russian president Dmitry Medvedev stated "Our first and fundamental task is to turn the Arctic into a resource base for Russia in the 21st century. Using these resources will entirely guarantee Russia's energy security" (Keating 2008).

6.3 The Growing Presence of Non-Arctic States

> *… clean energy will transform geopolitics. The transition will reconfigure many elements of international politics that have shaped the global system since at least World War II, significantly affecting the sources of national power, the process of globalization, relations among the great powers, and the ongoing economic convergence of developed countries and developing ones. The process will be messy [and] will likely produce new forms of competition and confrontation long before a new, more copacetic geopolitics takes shape."*
> *(Bordoff and O'Sullivan 2022).*

An estimated 32 non-Arctic States have public strategies for engaging in the region, including the 13 Arctic Council Observer States. Non-Arctic states are increasingly showing their intention to be involved in the region's future. Their Arctic strategies and policies demonstrate the complex interactions that are redefining the international role of the Arctic (Heininen 2020). Security dynamics in a geopolitically connected Arctic, therefore, will not be determined by Arctic States acting alone. Rather, by how Arctic States manage the interests of the large number of non-Arctic states seeking access to the region's resources and waterways.

The most-quoted indicators relate to governance, environmental protection including pollution and climate change, economy, international cooperation. The fact that governance and regional cooperation are emphasised can be interpreted as political support for the work of the Arctic Council's work. At the same time, references to security are fragmented, and a comprehensive overview of non-Arctic States to traditional and non-traditional security approaches does not emerge in the policies (Heininen 2020).

Most non-Arctic states formally accept they do not have the sovereign rights in the region, even if their positions are often intentionally ambiguous. However, they do claim a right to engage in economic activities, and to a greater role in the region's governance and development. Their interests appear more transactional, focused on extraction and transit. Non-Arctic states are less likely to share the human or environmental security concerns of the Arctic states, as their populations and territory are not directly involved (Lanteigne 2021, 311; Klimenko 2019; Lajeunesse 2018, 5).

The following sections analyse the Arctic policy statements of three supranational organisations - NATO, the EU and - and China. The Arctic policies of additional states are included as Annex I to this thesis.

6.3.1 North Atlantic Treaty Organisation (NATO)

NATO's most recent Arctic policy paper, *NATO and Security in the Arctic* (2017), notes that the region's strategic importance diminished after the Cold War, as the nuclear threat from the Soviet Union diminished (Connolly 2017, 1). It has since played a limited role in the region, a position that is under review, as NATO assesses there is growing militarisation and strategic competition in the Arctic.

According to *NATO and Security in the Arctic* (2017)*,* the state actors that should now draw increased are Russia and China, noting China's emergence as a strategic competitor to alliance members and increased presence in the region (2017, 1). The Russian naval fleet, with its nuclear capabilities are mainly concentrated in the Arctic, as well as where they test new weapon's systems (2017, 1). NATO does not wish to have a legally binding treaty on how the Arctic is to be governed, as it allows flexibility in regards to climate change and how the political landscape in the Arctic is ever-changing, although the organisation would not be opposed to future treaties that would aid in regulating access to the Arctic by non-Arctic states (2017, 3).

NATO agrees with the overall IPCC assessment, and highlights the increasing yearly temperatures rate in the Arctic opposed to other regions on the planet (Connolly 2017, 4). The position coincides with Canada's approach. NATO expresses concern for the probability of increased maritime traffic through the NSR and Northwest Passage as the quantity of sea ice lessens. The loss of sea ice will also make approximately 25 percent of remaining oil and gas resources available for extraction, leading to an increase in interest from non-state actors (2017, 4). This will likely have a negative impact on the Arctic ecosystem, as well as increase the chances of environmental disasters such as oil spills. With the increase of non-Arctic state actor's influx into the Arctic, NATO identifies the need to increase its own military assets in the area, along with strengthening search and rescue operations with the increased likelihood of accidents occurring (2017, 5).

With the lessening of sea ice in the Arctic, and Russia's heavy dependence on oil, NATO assesses that Russia is likely to begin extraction of natural resources to supplement its resources found in Western Siberia and the Caucuses (Connolly 2017, 6). This has led to Russia heavily investing in Arctic infrastructure when access to the Northern Sea Route (Russia) becomes widely available. Along with the increased focus on civilian infrastructure build-up, military infrastructure in the Arctic has increased dramatically since 2008, with new anti-air defence installations along the Arctic coast, increasing quantity of Arctic infantry, increasing submarine attack capacity, and the modernisation of the Arctic Murmansk naval fleet (2017, 6-7).

Along with Russia, China is highly interested in the potential natural resources that are becoming available in the Arctic, as its growing economy is heavily dependent on coal and oil. China along with the EU is the largest exporter of goods annually, so access to the Northwest Passage and Northern Sea Route for commercial shipping would be highly beneficial (Connolly 2017, 8). Under the Chinese Belt and Road Initiative (BRI), China has begun investing heavily in specifically Iceland, singing a free-trade agreement, as it will probably become a major polar transportation hub with the decrease in sea ice, it is also focusing on improving trade relations with the Scandinavian actors in an effort to gain greater access to the Arctic (2017, 8). NATO argues for an Arctic based strategy to mirror the actions taken by Russia and China, some of the Arctic Council member states argue against it because it would lead to non-Arctic states having a greater influence in Arctic policy (Connolly 2017, 8).

NATO's conclusion is that state interactions in the Arctic are productive and there is a positive sense of cooperation, as natural resources are still difficult to extract. However, NATO maintains that security precautions should be taken, noting the increasingly aggressive posture of Russia in the Ukraine, Georgia, Moldova, and China in the South and Eastern China Sea (Connolly 2017, 9).

NATO recommends that Arctic member states develop a comprehensive strategy for regulating their sovereign territories when they become accessible as ice dissipates, analysing the resources needed for Arctic infrastructure development, and monitor Russian and Chinese activities in the Arctic.

6.3.2 The European Union

The EU has three Arctic member states (Sweden, Denmark and Finland), while two are also members of the European Economic Area (EEA) - Norway and Iceland. The EU, therefore, is highly invested in the future of the Arctic region. Climate change, sustainable development, and international cooperation in the Arctic are the main goals of the EU's Arctic policy. It's policy document aligns with IPCC assessments, and highlights the 40% decrease in sea ice since 1979 (European Commission 2016, 5).

The EU policy prioritises the allocation of increased resources to Arctic research and the effects of climate change, with €200 million earmarked under the Horizon 2020 program

(European Commission 2016, 6). As a permanent observer of the Arctic Council, the EU further advocates for a lead role on Arctic climate change research priorities (2016, 6). To combat increasing temperatures in the Arctic, the EU will continue to work toward the Paris Agreement on limiting global temperature increases to 1.5*C, with a commitment of 20% of the EU budget being allocated to the goal (2016, 7).

Under the UNCLOS the EU, with its members and partners in the Arctic are law bound to protect the Arctic environment, while the EU along with the AC wishes to create marine protected zones. The EU is positive about resource extraction from the Arctic, however, if this is to occur there needs to be extensive infrastructure in place to handle any potential ecological disasters (2016, 8).

In terms of infrastructure development, the EU is willing to aid in funding transportation links between the Scandinavian countries to generate greater access to the Arctic region (European Commission 2016, 12). Specifically land based transportation infrastructure would aid in connecting deep-water ports in the Arctic region, leading to a reduction in potential bottlenecks for import and export of goods traveling through the Northwest Passage and NSR (2016, 12). As seen in other chapters of this thesis, space has become an increasingly important global arena, therefore the EU intends to improve the Copernicus and Galileo systems to further map changing ice trends, navigational mapping, and increased telecommunications opportunities for the inhabitants of the Arctic (2016, 12). Surprisingly the EU does not currently have a policy proposal for maritime traffic in the Northwest Passage, with its focus being on the Russian Northern Sea Route, so therefore there is a strong need for international cooperation.

The EU, through the UN, wants an increased role in policy negotiations pertaining to environmental protection and climate change, while also wishing to apply the UNCLOS to governance of the Arctic Sea when it becomes widely accessible (European Commission 2016, 14). In terms of Arctic governance, it will rely on mandates put forth by the AC, while also discussing how UNCLOS should be implemented once the Arctic Sea is accessible year-round (2016, 14). The EU also has the goal of increased cooperation with the five Asian observers of the AC - China, India, South Korea, Japan, and Singapore - with the increased use of the NSR (2016, 15). As seen, the EU's security policy for the Arctic seems lacking,

although one would assume that it is NATO who will convey the traditional security policy on behalf of the Union.

6.3.3 China

China's Arctic Policy White Paper (2018) cites the country's history in the Arctic, dating back to 1882, when Chinese scientists partook in inaugural International Polar Year, and later being a signatory to the Spitsbergen treaty in 1925 (Dams et al. 2020, 6). The Arctic plays an important role in Chinese nuclear security, as any potential attacks would likely come over the Arctic, with there being an increased focus on Russian and American nuclear capabilities (2020, 7). As mentioned in the section above, China has an expanding economy which is heavily reliant on natural resources, therefore the potential resource availability due to decreasing sea ice is of high interest to the Chinese Communist Party. China has not until recently had the capacity to be a major actor in the Arctic, having only become a permanent observer of the Arctic Council in 2013. The CCP in 2014 proclaimed that China had to become a "polar great power", resulting in the first Chinese Arctic policy paper in 2018 (2020, 9).

The Northern Sea Route is of great interest for the CCP, for one it would grant access to vast LNG supplies with the consent of Russia, second it's a waterway that the United States have little influence over in fear of escalating tensions with the Kremlin; it is projected that the NSR will be fully operational for maritime traffic by 2030 (2020, 10). Thereby boosting the Chinese Polar Silk Road Initiative. China is also a major investor/actor in the Russian economy, specifically after the 2014 sanctions imposed on Russia by the United States following the annexation of Crimea; meaning western access to the Russian economy was highly limited (Dams et al. 2020, 14). China, through multiple state owned entities, owns 39.9% of the Yamal LNG plant, and is also building a Arctic deep water port in Arkhangelsk, meaning that LNG can reach mainland China in under two weeks, under half the time it would take traversing the Suez Canal (2020, 15). China and Russia have also begun joint military exercises - 2018 - in Russian Arctic Territory (2020, 16).

Mike Pompeo, the US Secretary of State under President Donald Trump in 2019 highlighted the potential threat of growing Chinese influence in the Arctic at the 2019 Arctic Council roundtable; *"Beijing attempts to develop critical infrastructure using Chinese money,*

Chinese companies, and Chinese workers - in some cases, to establish a permanent Chinese security presence" and, *"Do we want the Arctic Ocean to transform into a new South China Sea, fraught with militarisation and competing territorial claims?"* (Johnson and Wroughton 2019). A month after Pompeo's speech at the Arctic Council, the United States published a new Arctic defence strategy, targeting Russian and Chinese activity in the Arctic (2020, 18).

6.3 Threat Perception in Canadian Defence Policy

Strong, Secure, Engaged, Canada's Defence Policy is Canada's current defence policy paper. Released by the Canadian government in 2017, the policy is updated continuously within a 20 year framework for the funding of the Canadian Armed Forces (Government of Canada, 2017).

From the policy, Canadian security and defence documents highlight concern for growing tensions in the Arctic and militarisation in the region, for China's entry into the region as a strategic competitor, and for a possible Sino-Russian alliance. There is an assessment also that Russian posture in the region is becoming more aggressive, and linked with tensions between Russia and NATO members elsewhere. Notwithstanding concerns, Canada does not appear to assess that a military threat is imminent.

Historically, Canada's primary security concern in the Arctic has been sovereignty, and enforcement within Canadian territory. Canada has perceived the United States as the most significant threat to its sovereignty in the Arctic. The US and Canada have territorial disputes on extension of the Alaska border into the Arctic Sea, and the US does not recognise the Northwest Passage as a Canadian inland waterway. Sovereignty and enforcement concerns are expected to increase, and remain at the policy's center.

6.4 Canada's Arctic Defence Policy Response

6.4.1 "Objective 1: Strengthen Canada's cooperation and collaboration with domestic and international partners on safety, security and defence issues"

Domestic security partnerships in the Canadian Arctic are crucial, with indigenous communities being an important stakeholder. Operation NANOOK supports a partnership between indigenous communities and the Canadian Armed Forces, as an element of security and sovereignty enforcement capacity (Government of Canada, 2019). The operation focuses on cold weather training, and improving readiness across multiple levels of government, and

increased cooperation with international partners. Through training facilities in Nunavut, Resolute Bay, and the Natural Resources Canada's Polar Continental Shelf Program, the Canadian armed forces are able to project Canadian sovereign claims over the Arctic.

The Canadian military cannot effectively conduct land patrols of the Arctic territories, given their size. The solution was formation of the Canadian Rangers, a reservist force within the armed forces, mainly composed of indigenous members (Government of Canada, 2019). Its objective is to "provide a military presence in those sparsely settled Northern, coastal, and isolated areas of Canada which are not otherwise served by the Canadian Armed Forces" (2019). As a domestic partnership, the Canadian Rangers serve as a key link between the federal government and the Arctic communities. The Junior Rangers program also serves as an additional positive influence on indigenous youth as it encourages a sense of pride in one's community and provides the opportunity for youth to build important life skills while sharing and encouraging passing down indigenous traditions between generations.

International cooperation in the Canadian Arctic is crucial for security and prosperity. Canada is a member of the Arctic Council, and therefore partakes in the Emergency Prevention, Preparedness, and Response Working Group, a collaboration of Arctic states addressing human created or natural disasters, with the goal of finding the best solutions for dealing with crises in the Arctic (Government of Canada, 2019). The Canadian Coast Guard and Navy also actively cooperates with other Arctic states through the Agreement on Cooperation on Aeronautical and Maritime Search and Rescue, the agreement sets out detailed areas which each state needs to conduct safety and patrol operations in (2019).

With the United States, through the binational North American Aerospace Defence Command (NORAD), Canada monitors northern entryways into the continent (Government of Canada, 2019). NORAD is in need of modernising to keep up with the security demands of the present and future. Arctic surveillance is primarily conducted in cooperation with the United States and Denmark - because of Canada's maritime border to Greenland, although Canada hopes to include Norway and other northern NATO states in the future (2019). Canada started a yearly military exercise NANOOK in 2007, with foreign partners participating after 2010 (Government of Canada, 2018). Its goal is to train on Arctic

surveillance, sovereignty patrols, reacting to crises, search and rescue, and mobilisation in the Arctic.

6.4.2 *"Objective 2: Enhance Canada's military presence as well as prevent and respond to safety and security incidents in the Arctic and the North"*

The "Strong, Safe, Secure" Canadian defence policy paper outlines why an increased military presence is needed over an extended time period in the Arctic for the common defence of the state and North America, as a show of force projection, it will be analysed in detail later in the dissertation.

The Canadian Coast guard serves as a federal representative in many Arctic communities (Government of Canada, 2019). Presently the coast guard has three ice-breakers capable of operating in Arctic waters, with the goal being to supplement this force in the future in accordance with the "National Shipbuilding Strategy" (2019). Transport Canada acts as the Canadian government's federal watchdog, monitoring shipping, marine security, and ice conditions through its Natural Aerial Surveillance Program (2019).

Search and Rescue (SAR) is a good example of the need for cooperation between the Canadian government and civilian actors. Primarily SAR is conducted by the Royal Canadian Air Force, its efforts are aided by the Civil Air Search and Rescue Association, supplying trained private citizens and aircraft (Government of Canada, 2019). As Transport Canada constantly monitors the Arctic, its unmanned aircraft are often the first responders to any incidents, supplying information to relevant parties. Maritime SAR is the responsibility of the coast guard, with an auxiliary force of 25 vessels and volunteers available if needed (2019). Ground SAR is a collaboration between federal and provincial agencies and governments, usually spearheaded by the local police force with the assistance of the Canadian rangers or airforce (2019).

Border security in the Arctic is an immense security challenge. The Canada Border Service Agency (CBSA) has the responsibility to assert sovereignty and verify that actors are legitimately entering and traversing Canadian territories at fixed points, such as airports and ports, with the RCMP responsible for other segments of the border (Government of Canada, 2019). The CBSA has the task of identifying security needs in the Arctic, and managing infrastructure improvements to fixed points (2019).

6.4.3 *"Objective 3: Strengthen Canada's domain awareness, surveillance, and control capabilities in the Arctic and the North"*

As the ice mass in the Canadian Arctic subsides, increased movement by actors in the territories and waters is expected. Therefore, it becomes paramount to address any gaps in situational awareness to avoid potential disasters. Marine Security Operations Centres (MSOC) play an important role in supplying information relating to weather, climate, ice and water information (Government of Canada, 2019). The MSOC is composed of several federal and civilian agencies, providing the necessary infrastructure to conduct security operations in the Arctic. The role they play in asserting maritime awareness is to detect, monitor, and analyse traffic in the Canadian Arctic waters while identifying any security related incidents that federal government agencies need to respond to (2019). Increased cooperation with the indigenous populace is important for improving situational awareness in the Arctic as they are the most likely to be physically present.

Canadian airspace over its northern territories is heavily trafficked, therefore an expansion to the Canadian Air Defence Identification Zone (CADIZ) is needed. CADIZ monitors air traffic in the Arctic but the expansion is needed to be able to better monitor approaches into the Arctic territories (Government of Canada, 2019). As mentioned earlier, NORAD plays an important role here, so along with its modernisation and cooperation with CADIZ, defence of arctic airspace is greatly improved.

6.4.4 *"Objective 4: Enforce Canada's legislative and regulatory frameworks in the Arctic and North"*

There are four main legislative acts referring to the Canadian Arctic; the *Marine Liability Act* (MLA), the *Canadian Shipping Act* (CSA), the *Marine Transportation Security Act* (MTSA)*,* the *Arctic Waters Pollution Prevention Act* (AWPPA)*,* and the *Arctic Shipping Safety and Pollution Prevention Regulations* (ASSPPR) (Government of Canada, 2019). These regulatory and legislative frameworks make up the Canadian "Polar Code". The Polar Code is paramount for regulating maritime traffic in the Arctic while protecting the populace and environment. To be able to track vessels in the Arctic the Northern Canada Vessel Traffic Services Zone Regulations (NORDREG) is used (2019).

The MTSA is important to protecting indigenous Arctic communities with an increase of tourism in the Arctic as a consequence of increased traffic of cruise liners in Arctic waters. These communities can possibly supply the infrastructure needed for these vessels to dock, there therefore needs to be strict regulations on how these vessels discharge waste and so forth (2019). Another important factor in regards to regulatory and legislative frameworks is investment in the Arctic by foreign actors. If the framework works as intended then investment will benefit Arctic communities and its inhabitants, while not compromising Canadian national security.

6.4.5 "Objective 5: Increase whole-of—society emergency management capabilities in the Arctic and Northern communities"

Emergency management in the northern Arctic communities is critical. There, therefore, needs to be an effective emergency management strategy that incorporates federal, provincial, and territorial approaches to Arctic security. The Canadian federal government also sees the need to increase the involvement of indigenous communities in the emergency management strategy as their knowledge of the Arctic is invaluable (Government of Canada, 2019). The next subsection will look at the last goal the Government of Canada has for its Arctic territories.

6.4.6 "Objective 6: Support community safety through effective and culturally-appropriate time prevention initiatives and policing services"

On rule of law and public safety, the Royal Canadian Mounted Police (RCMP) function in Arctic and indigenous communities, and are adopting "culturally-sensitive crime prevention programs and community safety planning initiatives" (Government of Canada, 2019). The Aboriginal Community Safety Planning Initiative (ACSPI), run by Public Safety Canada has the role of addressing concerns brought forward by Arctic communities, and adapting its methods accordingly because of the unique nature of said communities (2019). The RCMP, while policing the Arctic territories, is also an important example of projecting Canadian sovereignty in the North through border patrols preventing illegal migration, crime activities, and so forth (2019).

Because of the remoteness of most Arctic communities, illegal commodities such as drugs have a higher value compared to Southern regions, making it a market for criminal

actors. With expanding infrastructure projects such as deep-water ports, access to Northern communities becomes less challenging, therefore an expansion of existing RCMP forces is needed to maintain control of goods entering the Northern communities (Government of Canada, 2019). Currently the RCMP conducts traditional policing duties, intelligence collection, and creating positive bonds with the community they serve.

Strong, Secure, Engaged, Canada's Defence Policy funding for the armed forces is expected to grow from $18.9 billion in 2016-2017 to $32.7 billion by 2026-2027 (Government of Canada 2017, 11). Increases in personnel and equipment include acquiring 15 Canadian Surface Combatant ships to replace ageing and retired frigates and destroyers the Navy; modernisation of command and control assets in the Army; modernisation of the land based fleet; purchase of 88 new fighter aircraft for the Airforce; expanding Special Forces capabilities both domestically and abroad; and, an addition of 3,500 troops in the regular forces, allowing for increased investment in especially cyber security (2017, 13).

Figure 2: Canadian Armed Forces Goals
1. "Actively address threats abroad for stability at home"
2. "Field an agile, well-educated, flexible, diverse, combat-ready military"
3. "Develop sophisticated awareness of its operating environment to better predict and respond to crises"
4. "Act as a responsible, value-added partner with NORAD, NATO, and Five-Eyes partners"
5. "Work with the United States to ensure that NORAD is modernised to meet existing and future challenges"
6. "Balance traditional relationships with the need to engage emerging powers"
7. "Field advanced capabilities to keep pace with allies and maintain an advantage over potential adversaries"
8. **"Address the threat stemming from terrorism and the actions of violent extremists organisations, including in ungoverned spaces"**
9. "Bolster ability to respond to increasingly severe natural disasters at home and abroad"
10. **"Increase presence in the Arctic over the long-term and work with cooperatively with Arctic Partner"** (emphasis added)

(Source: Government of Canada 2017, 14)

In addition to the ten goals listed in the table above, the Canadian Armed Forces have three more general goals:

> *"**Strong at home,** its sovereignty well-defended by a Canadian Armed Forces also ready to assist in times of natural disasters, other emergencies, and search and rescue; **Secure in North America,** active in a renewed defence partnership in NORAD and with the United States; **Engaged in the World,** with the Canadian Armed Forces doing its part in Canada's contributions to a more stable, peaceful world, including through peace support operations and peacekeeping."*

(Government of Canada 2017, 14)

To achieve the goals listed above the Canadian Armed Forces intend to "Anticipate, Adapt, Act" (Government of Canada 2017, 15). **Anticipating** entails detecting ongoing and future threats and challenges to Canadian security. To do this vast information networks need to be built, modernised and maintained, so said information can transition through the military and civilian command structure seamlessly; allowing the appropriate sectors of the federal government to respond effectively to emerging and ongoing situations (2017, 15). Domestically, the Arctic presents the greatest challenge in a security perspective. Therefore, the acquisition of modernised surveillance equipment, in the form of remotely piloted aircraft (drones) will bolster the armed forces' ability to project Canadian sovereignty over its territory in the Arctic (2017, 15). To add civilian expertise to the Armed Forces, scholarships worth up to $102.5 million are being given to Masters and Post-Doc students interested in the securities field (2017, 15).

Adapting refers to how the armed forces and civilian bodies react to an ever expanding and fluid security environment. The first step being taken is to modernise cyber and space capabilities to better surveil its territories, and combat expanding cyber threats from actors at home and abroad (2017, 15). As mentioned in the table on the previous page, investment in remotely piloted aerial systems is a high priority for the different branches of the armed forces. As well as an increase to service members in the active armed forces, the Armed Forces reserves will be increased by 1500 to 30,000, while also streamlining the integration of the reserves into the armed forces through a series of new directives (2017, 16). To increase the Armed Forces ability to become carbon neutral $225 million has been

allocated to diminish the creation of greenhouse gasses through modernisation of military infrastructure (2017, 16). **Act** refers to the armed forces abilities to participate in NORAD, NATO and active theatres simultaneously while also conducting peacekeeping operations and search and rescue missions (2017, 16). Anticipate, Adapt and Act become feasible objectives because of the increased injection of funds into the department of defence budget in its current funding period up until 2026-2027.

6.5 Investing in Peacekeeping and Security

6.5.1 The Royal Canadian Navy (RCN)

Having the world's longest coastline, second largest continental shelf, and fifth largest Exclusive Economic Zone - EEZ (Government of Canada 2017, 34), the need for a modern and highly responsive Navy is necessary, especially when taking into consideration the contestation of Canada's sovereignty claims over the North-western Passage. The RCN is currently undergoing a modernisation and acquisition of new materiel, including; acquiring 15 Canadian Surface Combatants and two Joint Support Ships, the acquisition of five-six Arctic patrol boats, the modernisation of four Victoria Class submarines, upgrades in surveillance and reconnaissance tools, and upgrades to lightweight torpedoes carried by helicopters, surface ships, and maritime patrol aircraft (2017, 35). Through a "Naval Task Group" - four surface combat ships, a support ship, and in some cases a submarine if needed, the RCN can rapidly deploy where needed domestically and internationally (2017, 35). If the RCN acquires the equipment it has stated it will, then it will be able to operate at least three Naval Task Groups at any given time, allowing for the control of Canadian Arctic territories.

6.5.2 The Canadian Army (CA)

The Canadian Army consists of four subgroups integrated into one force: the Regular Force, Canadian Rangers, civilian personnel, and Army Reserves (Government of Canada 2017, 36). To be effective in different theatres the CA generally operates in Brigade groups consisting of about 4,800 service members, usually divided into groups consisting of for example Infantry, Artillery, Engineering, Reconnaissance, Support, and so forth, they then form Battle Groups to coordinate deployments (2017, 36). As the report states, it is critical for the CA to improve its capabilities in the Arctic region, this will be achieved through a modernisation process of acquiring and/or rehabilitating existing transportation infrastructure, and extensive training

exercises in the Arctic at brigade and battle group levels (2017, 37). As mentioned earlier in the paper, the role of the indigenous population in securing the Canadian Arctic is paramount, which has in turn been showcased in the 2017 defence report. The increase in funding for the Canadian Rangers - a military subgroup consisting largely of indigenous peoples and operating mainly in the Arctic, is a clear example of the increased attention being given to the Arctic region by the Armed Forces.

6.5.3 The Royal Canadian Air Force (RCAF)

Canada has the second largest landmass on the planet, as well as the longest coastline, so it becomes imperative to have a fully functioning, modern air force to secure Canadian territory and aid in operations abroad. Because the Canadian territory is as vast as it is, it therefore needs a quick reaction force that can respond to external threats such as encroachments on borders, and internal issues such as search and rescue. The role of the RCAF is aviation and space-based surveillance of Canadian territory; full time search and rescue standby and assistance; as well as reacting to terrorist threats and natural disasters (Government of Canada 2017, 38).

In a partnership with the United States in NORAD, the RCAF jointly patrols Canada, and shares borders in North America (2017, 38). The RCAF also tends to play a major role in most NATO operations, as well as assisting in humanitarian missions through the UN, mainly using large transportation aircraft such as the C-17 (2017, 39). Up until the next defence funding round in 2027-2028 the RCAF has a multitude of goals; replace CF-18 fleet with 88 modern fighter jets, replace RADARSAT with modernised space surveillance equipment, modernise communications equipment, replace the CC-150 Polaris air-tanker transport planes, replace the ageing maritime surveillance aircraft, expand the drone capabilities, upgrade fighter jets weaponry, update training modules for airmen/women, and expand and improve search and rescue capabilities, especially in the Arctic (2017, 39).

6.5.4 Special Forces Operations Command (SOF) and Armed Forces Joint Capability

SOF are small extremely effective military units used where larger conventional forces cannot operate effectively. SOF are commonly used for domestic and international anti-terrorism operations, reconnaissance, partner building with allied forces, and as a quick reaction force to threats (Government of Canada 2017, 40). During the current 10 year defence budget round

the SOF aims to; acquire mid-range unmanned surveillance equipment, upgrade the motor fleet with better armour capabilities, upgrade combat sea and land based vehicles, add 605 service members to the SOF command (2017, 40).

The investments that this defence budget round will make into armed forces joint capabilities are; acquiring information systems which can be integrated into a joint command structure with the branches of the armed forces, acquiring surveillance systems better suited to monitor cyberspace and intercept malicious data (2017, 41). While improving; improve the mobility of the intelligence regiments, improve detection and response capabilities of the the Chemical, Biological, Radiological, Nuclear, and Explosives units, and improving cyber awareness (2017, 41). The next sub-chapter will explore the Canadian Armed Forces in a Global Context.

6.6 The Canadian Armed Forces Abroad

The *Strong, Secure, Engaged* 2017 report lists three global security trends; "the evolving balance of power, the changing nature of conflict, and the rapid evolution of technology" (Government of Canada 2017, 49).

6.6.1 The Evolving Balance of Power

Power has, the last few centuries, been concentrated in the West, this is changing now with the emergence of economic powers in Asia, especially China who have become a major international actor after ending their isolationism in the 1960's. China is particularly growing its influence in third-world countries, through mass investment in large infrastructure projects. Russia on the other hand has demonstrated its preparedness to challenge the international status quo by its actions in Crimea in 2014. Therefore, the CAF needs to adjust to the evolving world stage. Deterrence plays an important role in stopping potential conflict with adversaries. Traditionally, deterrence has been related to nuclear capabilities, however, recent technological advances in the last decades has seen cyber and space capabilities strengthened (Government of Canada 2017, 50). So state competition is evolving, and with growing accessibility to the Arctic, conventional tactics need to change. The Arctic states, through the Arctic Council, have managed to cooperate well.

6.6.2 The Changing Nature of Conflict

The report sees that climate change is one of the major factors in why modern conflict occurs, together with economic inequality, human migration, putting a large strain on international organisations such as the UN (Government of Canada 2017, 51). As the report states, "In Canada, climate change is transforming the Northern landscape, bringing an evolving set of safety and security challenges, from greater demand for search and rescue to increased international attention and military activity" (2017, 51). As mentioned in Chapter 2.1 climate change is a threat multiplier, thereby aggravating existing problems in the Arctic while also creating new ones. Grey Zone tactics and Hybrid warfare is growing in use. The Grey Zone refers to the spread of misinformation, causing tension and confusion in the international community; while hybrid warfare refers to acts of aggression that are on the verge of being classified as armed conflict, but do not meet the definitional criteria, for example; cyber-attacks, election fraud, and so forth (2017, 53).

6.6.3 Rapid Evolution of Technology

The evolution of technology in a defence scope is divided into two domains, cyber and space. The cyber domain, as seen already, is a growing potential threat, with intelligence and military state actors and non-state actors abusing its readily available anonymity to attack other states, individuals and non-state actors, with the threat increasingly growing as systems become more advanced (Government of Canada 2017, 56). C4ISR (command, control, communications, computers, intelligence, surveillance, reconnaissance) are critical military systems which are constantly under threat in the cyber domain (2017, 56). The CAF sees the increased use of satellites as a potential issue, as more equipment is sent into space, more congestion arises, and the probability of damage to equipment rises (2017, 56-57). The government and CAF prefer the space domain to remain a peaceful one, however, with the progression of technology, disruption and damage to surveillance systems, GPS, and so forth. The final sub-chapter will examine the CAF approach moving forward.

6.7 The Canadian Armed Forces Aims Moving Forward

The *Strong, Secure and Engaged* policy targets of the CAF translate into, Strong at Home, Secure in North America, and Engaged in the World (Government of Canada 2017, 59). Strong at home refers to the CAF projecting Canadian sovereignty while also conducting

search and rescue operations and reacting to natural disasters. Secure in North America is continuing the fruitful partnership with the United States through NORAD. Engaged in the world is projecting Canadian values through the international stage and international operation in a bid to create a prosperous and peaceful world. CAF strategic interests to ensure Canadian prosperity and security have three contributing factors; collective defence, rules based international order, and global security (2017, 59). Future actions taken by the CAF will follow their core values; inclusion, compassion, accountable governance, and respect for diversity and human rights (2017, 61).

6.8 Concluding; Implications for the Canadian Arctic

Current defence policy indicates that Canada is allocating more resources to Arctic security, and defining the role of the Canadian Armed Forces and public security institutions as the region changes. Projecting and enforcing sovereignty is the highest priority, with issues of contestation in the Northwest Passage and Beaufort Sea from the United States. The other state-actor linked with increasing encroachments on Canadian sovereignty in the Arctic is breaches of the air identification zone (ADIZ) by Russian bombers and fighter jets (Lindsey 2018)

This chapter has shown that non-Arctic states and supranational organisations have vested interests in the Arctic. Most clearly state that their interest lies in preventing further negative trends of climate change, predominantly through scientific engagement in the area. There are also clear traditional security factors at play, although there is almost a consensus that the Arctic should follow the example of Antarctica and become a nuclear free zone. The potential benefits of the Northern Sea Route and the Northwest Passage opening for commercial maritime traffic are of immense interest especially to the non-Arctic Asian countries. One clear issue for the Canadian Arctic is the interest in the NWP, as all state actors with sub-chapters in this chapter contest Canadian sovereignty over the NWP, claiming that it is an international right under the UNCLOS treaty.

There are therefore two security dimensions. They challenge Canada's sovereign control of shipping lanes (maritime) and seek access to land-based natural resources. Possible threats in each security dimension, with maritime being defence focused and land-based resource competition affecting the security of human collectives and the natural world.

7. Climate Change and Human Security in the Arctic

Northern communities' ability to adapt to climate change depends on interconnected factors such as housing, poverty, food security, and traditional skills. These factors are key to maintaining cultural identity, and health and well-being.
(CCA 2019, 61)

7.1 Assessment of Existing and Emerging Threats to Human Security in the Canadian Northern and Arctic Regions

The second narrative emerging from the literature is broadly based in Critical Theory. This narrative calls for the deeping of exceptionalism rather than its demise, and focuses on human and environmental security. Regional security is achieved through further institutionalising regional cooperation, and a "whole of government/ whole of society" approach to human and environmental security at the national level.

The approach requires that climate change response - as military defence, and human and environmental security - be integrated into a single policy framework, to be implemented across government and with social and private sector stakeholders. Security issues are identified by states acting as duty bearers that accept responsibility to securitise a broad group of referent objects, but with some elements of security being self-articulated by the communities living in the Arctic (Klimenko 2019).

Deprivation-related human *insecurity* is acute in the Arctic and sub-Arctic regions, with a differential impact on Indigenous communities. The region is massive, posing a range of climate challenges. It comprises diverse climate regions, ecosystems, and species; limited and vulnerable infrastructure and connectivity; and population centres that are largely placed in small and isolated rural communities (Greaves 2021).

Vulnerabilities pre-date climate induced disruptions. Now changes affect a broader range of critical needs, such as access to traditional food sources. Some literature maintains that the human security impact of climate change has not fully "securitised" in Canada, "despite the material threats it poses to human and national security… (Greaves 2021, 183). At the same time, vulnerabilities-related threats are also increasing, from the occurrence of extreme

weather events and deteriorating environmental conditions. In the future, these threats may also derive from domestic or international conflicts.

Overall, the "factors that affect people's climate-adaptation capacities intersect to render Indigenous people, especially Indigenous women, particularly vulnerable to human insecurity" (Geaves 2021). As Grieves observes, "indigenous identities and cultural practices are predicated on a close relationship to the natural environments of their ancestral territories. This connection makes security for Indigenous peoples inseparable from damage to the land itself" (Greaves 2021).

For the critical literature, therefore, climate change is intertwined with social, political, and economic processes in the region. A primary concern is for the protection of environmental systems and life in the natural world, and of peoples and communities. Extractive development, the crowding-in of non-Arctic actors and increasing military activity all amplify threats to the environment. Rights and protections are dependent on political and cultural rights – the ability of social actors to participate in governance and to influence and develop choices. Within this framework, literature focuses on the security of access to basic services (health, education, infrastructure), housing, food and water, and economic development that serves communities (Kalliojärvi 2020, 9).

Nationally, these securities depend on the "Whole of Society" approach to the governance and development of the Arctic. Regionally, the Arctic Council a critical platform for interaction between state and social actors, which is essential for the broadening referent objects beyond the state. The erosion of exceptionalism, therefore, reduces the access of social actors to state actors. It also diminishes region-wide coordination between people and communities on the security issues of interest to them.

7.2 How Canadians Perceive Threats to Arctic Security

Canadians' perception of threats have been recorded in public opinion polling. Looking over the past decade, the polling suggests that Canadians have a strong northern identity, no matter what part of Canada they live in; North or South. They want Canada to have a strong role in Arctic regional governance, and support Canada's engagement with the Arctic Council and other multilateral fora. Canadians also support the government's robust stand on sovereignty, and they perceive threats to Canada's sovereignty as vital.

Canadians also share a growing concern over threats to the environment. However, issues related to climate change and non-traditional threats to human security, the perception of threat was more strongly expressed by northern populations and communities, where the effects are most closely felt. On this point, threat perception does not appear to not be equally shared outside of the Arctic and Northern region.

7.2.1 Canadian Opinions, Northern and Southern Demographics

The Walter and Duncan Gordon Foundation with the collaboration of The Canada Centre for Global Security Studies have done several surveys of the Canadian populace, splitting the groups into "North" and "South", to analyse their views on issues concerning the Arctic and its inhabitants. The main subjects of examination in the survey are; Quality of Life, Expected Quality of Life, Rated Health, Primary Issues in Canada, Primary Issues in the Arctic, Defining Security, Military role in the Arctic, International Cooperation, Allies and Foes, and Supranational organisations in the Arctic (EKOS 2011, i-ii). First the highlights of the survey will be examined, before going into greater detail.

The survey conducted had about 9,000 sampled interviews, and nine separate populations, while also splitting the three Northern Territories (The "North) and the "South" (2011, iv). While there were also surveys conducted in the other Arctic Council permanent member states (2011, x). An important difference that was noted between the northern and southern populations what they deemed to be the most important when the survey was conducted, the northern population deeming improvements in Arctic infrastructure as critical, while the southern population put an emphasis on traditional security issues, such as border control, sovereignty, and military presence (2011, vi-vii).

Quality of life ratings between the northern and southern populations where almost identical based on the surveys conducted, with the northern population slightly edging it in the "good" category, whereas the southern population had greater numbers defining their quality of life as either "average" or "poor" (EKOS 2011, 3-4). With expected quality of life, the northern populace saw a greater chance for improvement, while the southern populace expected it to either remain the same or worsen over time. The younger northern populace was the most optimistic for improvements to quality of life, while the ageing southern populace correlated with a fear of quality of life deteriorating over time (2011, 5). Current

health ratings in the northern and southern populaces mirrored the results of the quality of life and expected quality of life surveys (2011, 6-7). It can be argued that based on the surveys conducted that the northern population in Canada is more optimistic than the southern populace under current and future circumstances.

When asked which issues were the most pressing for the two populations, differences did present themselves. The northern surveyed population was more concerned with infrastructure development, economic development, standards of living, and the environment. While the southern population were most concerned with the economy, jobs, and governance issues (EKOS 2011, 8). When looking at issues concerning the Canadian Arctic, respondents from the two populations agreed that "environment" was the most pressing issue, the greater difference between the populations related to their stance on the importance of Canadian Arctic security, the southern populace ranking it right behind the environment (EKOS 2011, 10).

When not given a clear definition of what security entailed, traditional military security did not top the list of security issues concerning the populations, the north prioritising environmental security, and the south prioritising social security. Both groups did however agree that the military should prioritise the Arctic and expand its influence there, especially concerning search and rescue capabilities over international engagements (EKOS 2011, 13). When given a concrete definition of security in the Arctic, the northern populace still prioritised environment, social, economic, and cultural security over traditional military security. While in the southern population a greater emphasis was set on traditional military security, however, the same issues the northern population wanted to focus on remained similar to the southern population (2011, 15). When given either the option of increasing the Canadian military in the Arctic or diverting resources to international roles, around 60 percent of both populations want an increase in the Arctic presence, whereas around 30 percent of the northern population want an increased international presence opposed to 15 percent in the south (2011, 18).

The role the Arctic should play in Canadian foreign policy does not differ between the northern and southern population. 55 percent of the northern population surveyed wanted the Arctic to be the central component of Canadian foreign policy while 53 percent of the

southern population agreed (EKOS 2011, 19). Within both groups approximately 30 percent agreed that the focus of the Canadian foreign policy should be targeted at regions outside the Canadian Arctic (2011, 19-20). So even if the two populations don't necessarily agree on what security issues should be prioritised by Canadian policy, they do almost come to a consensus when asked about the role of Canadian foreign policy in the Arctic.

The southern population places a greater importance on military security, whereas the northern population wants expensive infrastructure projects and increased protection of cultural and social security. Both survey groups rank similarly when discussing quality of life for Canadians, while they also agree that a potential solution to shift greater importance over the Canadian Arctic is to have a greater Canadian civilian presence in the Northern Territories, and that any government policies targeting the Arctic must take into consideration the effect it will have on the indigenous population and hear their opinion on the matter (EKOS 2011, 22-23). Both populations also want the Arctic to become a nuclear weapons free zone - like Antarctica, (2011, 23) which means a foreign policy directive that encourages both the United States and Russia to withdraw nuclear armaments from the area is needed.

Infrastructure is seen as critical for northern communities. Over 90 percent of those surveyed in the Northern population agree that there needs to be extensive access to quality healthcare, drinking water, and education. Infrastructure linked to emergency response and public transportation also rank above 90 percent in the northern surveys (EKOS 2011, 24). In the southern surveys the importance of different infrastructure elements is almost ranked the same, where they differ is the how important they deem them to be, with the percentages varying between 85-80 percent (2011, 24).

The values, therefore, are shared between the northern and southern groups, however the importance assigned to the different elements is clearly apparent. Emergency response in the Arctic outside of the larger population centres is handled by the Canadian Rangers, a mostly ingenious militia associated with the armed forces - also in the armed forces reserves, and the Coast Guard - when they can effectively navigate the Northwest Passage (NWP) or at least parts of it. Both the northern and southern survey groups agree that militias need to be expanded, better trained, and given better and modernised equipment, with an about 10 percent increase in the northern population - 82 versus 71 percent (EKOS 2011, 33-34).

On the issue of sovereignty in the Canadian Arctic, two contested areas - both with the United States, with different levels of contestation, present themselves: the Beaufort Sea and the NWP. The issue of the Beaufort Sea is the closest to being solved, as the American government is willing to negotiate, however at the same time the American government refuses to recognise the NWP as Canadian internal waters, as it would impede their ability for freedom of navigation through the waters (EKOS 2011, 35).

In the Beaufort Sea dispute, about 50 percent of both southern and northern Canadians want the Canadian government to assert full sovereignty over the area, with about 40 percent wanting a settlement to be reached with the American government. Surprisingly, over 60 percent of Americans surveyed wanted a compromise with the Canadian government to be reached, while only ten percent wanted the American government to assert full sovereignty over the contested zone (2011, 39-40). The next section will focus on different areas of interest with the survey results of the two Canadian populations combined with the other Arctic states - the USA, Russia, Norway, Denmark (Greenland), Finland, Iceland and Sweden.

7.2.2 Canadian and International Opinions in Combined Surveys

When all the Arctic states were surveyed in relation to whom they would prefer to negotiate with over Arctic issues the Scandinavian countries topped the list, but in most cases Canada followed, with the exception being the United States which ranked them first. The Canadian participants were the only group to rank Russia as their third choice – all the others had the Russian government outside their top three (2011, 35-36). When it came to which country the Arctic states least wanted to participate in solving Arctic issues, all but Russia mentioned China as their least preferable partner. Interestingly, when the northern and southern survey groups were separated their least preferred second and third choice partners differed, the north ranking the United States above Russia, and the opposite results in the south (2011, 37).

Making the Arctic a nuclear weapons free zone, such as Antarctica is largely agreed upon by most of the states surveyed, with a 74-82 percent approval rate. The only two states who lie at about 50 percent are unsurprisingly the two states within the Arctic zone with nuclear weapons capability, the United States and Russia (EKOS 2011, 38). When it comes to how the Arctic is to be divided up, if that is the result, Canada, Iceland and Russia don't wish to compromise their zones of autonomy, while Norway, Denmark, and Finland prefer to

negotiate a compromise with the other Arctic states; Sweden prefers the Arctic to become an international territory such as Antarctica.

Americans are divided between the Arctic becoming an international zone and negotiating with other Arctic states (2011, 42). So as seen opinions on what the potential solutions for navigating Arctic issues are spread quite evenly across the board, except for the nuclear weapons issue. The issue of the NWP in an international context is not surprising, Canada being the only state deeming it to be internal waters. Overwhelmingly the other Arctic states deem it to be an international waterway apart from Iceland, which is divided between recognising the Canadian claim and deeming it an international waterway (EKOS 2011, 45).

The Arctic Council, an intergovernmental forum, with the Arctic states and indigenous communities within them as representing its membership, while also having the observers such as China and the European Union. Its role is discussing and solving issues facing the Arctic region, with environmental protection and development of the Arctic being its primary goal. When the Arctic states were surveyed, Canada was clearly the most positive to the Arctic Council, concurrently also wishing to introduce a security and peace building mandate, while excluding non-Arctic actors such as China and the European Union from joining the council (EKOS 2011, 47). When asked how "aware" survey respondents from the different states were of the Arctic Council, Northern Canada ranked joint highest with Iceland with 61 percent, followed by Denmark, Southern Canada, and Finland (around 50 percent). Sweden (27 percent), Russia (21), and the United States (16) ranked the lowest (2011, 47). With the exception of Russia (55 percent) and the United States (56 percent) most of the member states widely support the Arctic Council and its mandate (2011, 49).

Supporting an expanding mandate for the Arctic Council differs between an increased peacebuilding role and an increased military role in the Arctic. Almost all the member states are for the larger part positive to an increased peace building mandate, apart from Denmark (57 percent of respondents). While an increased military mandate is most positively viewed by Russia alone (81 percent), with all the other member states falling below 62 percent (2011, 51). When it comes to inclusion of Non-Arctic states into the Arctic Council and including new members in decision processes, with the exception of Sweden (64 percent) all other

member states drop below 50 percent approval rate, with Canada dropping to 22 percent (EKOS 2011, 52-53).

7.3 Threat Perception in Canadian Human Security Policy and Approach

> *Climate change in Nunavut cannot be addressed without considering other factors. Communities' ability to cope and adapt to climate change will be limited by factors such as housing, poverty, food security, language, modernization, and the erosion of traditional land-based skills. All of these factors have direct impacts on the maintenance of Inuit cultural identity, and the well-being of Nunavummiut.*
> (Nunavut Climate Change Center 2021)

Canada's perception of possible threats to human security are set out in *Canada's Climate Change Report* (CCCR 2019), *Canada's Arctic and Northern Policy Framework* (NRCan 2020) and *Canada's Top Climate Change Risks; The Expert Panel on Climate Change Risks and Adaptation Potential* (CCA 2019). Official documents were complemented with information from the *Nunavut Climate Change Center*.[12] Table 9 paraphrases the highlights from these reports.

Table 9: Assessment of threats to human security in the Canadian Arctic

Threats to people	Successful climate risk management and adaptation in Inuit communities consider climate risks along with documented social determinants of Inuit health: "quality of early childhood development; culture and language; livelihoods; income distribution; housing; personal safety and security; education; food security; availability of health services; mental wellness; and the environment" (CCA 2019)
	Increasing incidence of adverse health impacts, including physical and mental health conditions and loss of life caused by extreme weather events, lower ambient air quality, and increasing ranges of vector-borne pathogens.

[12] The *Nunavut Climate Change Center* is an entity of the Government of Nunavut, Ministry of Environment, https://climatechangenunavut.ca/

Threats to communities and culture/ tradition	In the Arctic, the health and well-being of local communities is being affected as climate change compromises the availability of traditional foods and water supplies (CCA 2019) Increasing damage to northern communities and infrastructure (e.g., buildings, roads, pipelines, power lines, airstrips) and reduced or disrupted access to communities and facilities due to thawing permafrost, warmer winter temperatures, increased snowfall, more frequent mid-winter freeze-thaw cycles, and earlier spring onset (CCA 2019) Declining opportunities for practising Indigenous ways of life and cultural activities due to changing weather patterns and environmental conditions, more frequent extreme events, and associated impacts on safety, food security, communities, traditional knowledge, language, and culture (CCA 2019). Increasing risk to Arctic communities and public safety stemming from heavier marine traffic and the potential for more frequent marine accidents due to the opening of the Northwest Passage because of reduced summer sea-ice extent (CCA 2019).
Threats to critical infrastructure	Where relative sea level is projected to rise, the frequency and magnitude of extreme high water-level events will increase. This will result in increased flooding, which is expected to lead to infrastructure and ecosystem damage as well as coastline erosion, putting communities at risk. (CCA 2019; CCCR 2019) Increasing damage to infrastructure from extreme weather events, such as damage to homes and buildings from heavy precipitation events, high winds, and flooding; increased probability of power outages and grid failures; and an increasing risk of cascading infrastructure failures. Changes in permafrost, ice conditions, precipitation, drainage patterns, temperatures, and extreme weather events can have negative results for infrastructure designed for permafrost conditions.

Threats to the environment	The loss of sea ice could be largely absent from the Arctic Ocean by the late 2030s posing threats to a range of species including seals, walrus, and polar bears.
	Permafrost is warming and thawing, and glaciers in both the Arctic and the western mountains are shrinking, with consequent impacts on runoff and water systems now and in the future.
	Estimates suggest global temperature increase could lead to a 40% or more decline in the range of Arctic char. Cold-water fish species across higher latitudes are in general expected to "experience local extinctions and extirpations at large scale" due to higher air and water temperatures.

7.4 Observations on Canada's Human Security Policy and Approach

Climate change is currently arguably the greatest danger to human security, as it has the potential to affect most individuals in some manner or another, whereas armed conflict and political instability can be set in distinct areas. As Adger et al. (2014) summarise: "Climate change is an important factor threatening human security through (1) undermining livelihoods; (2) compromising culture and identity; (3) increasing migration that people would rather have avoided; and (4) challenging the ability of states to provide the conditions for human security" (2014, 758).

To exemplify the effect of the four factors listed by the four Adger et al. factors the Canadian Inuit communities as seen by the 2004 ACIA report; "the sum of these factors threatens to overwhelm the adaptive capacity of some Arctic populations and ecosystems. The increasingly rapid rate of recent climate change poses new challenges to the resilience of Arctic life" (Hassol 2004, 5). As further stated by the IPCC "the rapid rate of which climate is changing in the polar regions will impact natural and social systems and may exceed the rate at which some of their components can successfully adapt" (Larsen et al. 2004, 1570). This thereby makes the Canadian Inuit community a critical point of analysis in preceding chapters as they feel the greatest effects of Climate change.

8. Conclusion: Towards a New Theoretical Framework for Arctic Security

> *Security in a rapidly changing Arctic region can no longer be exclusively about military threats and dangers, and sovereignty cannot fixate solely on the rights of states. We must deepen and broaden our understanding of the terms "sovereignty" and "security" now, if we are to reduce the vulnerability and increase the resilience of Arctic societies in the face of compounding and accelerating social and environmental changes.*
>
> *(Lackenbauer and Greaves 2016)*

The Arctic is evolving into a multidimensional and global regional security complex, incorporating new security dynamics. Once considered a regional complex governed under the rules of exceptionalism, the Arctic is experiencing an accelerated integration into global security dynamics, traditional and non-traditional. The introduction of a new security variable – climate change – is widening the referent objects that must be secured, to include human collectives and in the natural world. Within this complex, there are four interacting dimensions; Global, Arctic Regional, National and Local dynamics. At the same time, perceptions of security held by state and non-state actors (corporate, institutional and community) have also evolved, influencing decisions about security priorities.

The first purpose of this thesis was to explore the relationship between climate change and security in the Arctic, using Canada as the case study. This guiding research problem was based on a simple hypothesis; ***traditional security theory is inadequate to conceptualise, measure and address new security dynamics that climate change may be creating in the Arctic***. The second purpose of the thesis, therefore, was contributing to theory development for new approaches to securing the Arctic. The research questions were constructed to provide the evidence and theory basis on which a contribution could be made. The results suggest that a unified theoretical approach, integrating traditional and critical theory elements, is needed to secure the widening of referent objects that climate change is generating, and which are reflected in Canadian security policy.

8.1 Is climate change creating new security dynamics in the Canadian Arctic?

(a) Does climate change generate new security threats, and/or amplify existing threats to Canada?

Climate change is generating new security threats in the Arctic, by accelerating the region's integration into geopolitical dynamics. The most significant emerging defence security challenge is the crowding-in of non-Arctic state and non-state actors. While Canada assesses open military conflict is not imminent, increased economic competition and negative implications of non-state actors, involved in resource extraction, may contribute to further militarisation of the region. Even with greater accessibility to the Canadian Arctic, it is still an extremely remote region, and responses to for example oil spills are incredibly difficult. As seen in Table 8 of Section 6.1, the effects of security threats exist at the macro, meso, and micro levels.

Coates et al. (2008) assess that the Canadian military presence in the Arctic at the time of writing is glaringly inadequate. This assessment appears correct. Canada is the least developed of the Arctic 5 states in this regard, lacking the capabilities to enforce its own sovereignty in the Arctic if it was to be seriously challenged (2008, 191). Therefore, on a security basis the military and general security presence needs to be expanded and modernised, while on a humanitarian basis SAR capabilities need to be improved.

The acquisition of ice-strengthened patrol boats and other assets expand the positive direction for strengthening the Canadian sovereignty claim over the Northwest Passage. However, the acquisition of additional icebreakers is a critical and still unmet priority, as their movement capabilities in Arctic sea ice are far superior (2008, 194). When the Northwest Passage becomes regularly ice free, Canadian sovereignty will be increasingly challenged by state and non-state actors, therefore, the need for an improved security presence.

In these regards, it may be the end of the era of Arctic exceptionalism, as the Arctic will not be protected from geopolitics by its hostile environment for much longer (IPCC 2021), as shown in chapter 4 "Climate Change and the Arctic". Said predictions identify the Arctic as an ice free region in the "near" future, therefore, a new consensus on a security paradigm for the Arctic, and especially the Canadian Arctic, is needed.

(b) Which referent objects does climate change threaten, and need to be secured?

With high confidence, therefore, the evidence is that climate change has generated new security threats in the Canadian Arctic that are shared commonly throughout the region. These threats come with new and unique referent objects that need to be securitised. The future scope and trajectory of threats and referent objects is likely as unpredictable as the effects of climate change itself. Canadian security threat assessment and its Defence and Arctic policies assumes that future military threats to the Canadian Arctic are real and significant. These threats are generated from two primary sources:

Challenges to Canada's sovereignty, as climate-driven changes to the Arctic's physicality expands access to the region. These threats relate to transit *through* the Arctic and are not specifically generated in the region. Here, the power requirement is a combination of international diplomacy to advocate Canada's sovereignty over inland waterways within its territory and the physical enforcement of its claim. Canada's position is likely to be challenged in both the diplomatic and enforcement realms by non-Arctic states crowding into the Arctic, China first among them but also including erstwhile Canadian allies. Historically, the most significant challenge comes from the United States.

The Arctic's integration into geopolitical competition, as non-Arctic states and affiliated non-state actors crowd the region, with interests – extraction and transit – that are different from Canada. Unlike enforcement challenges, the emergence of direct military confrontation is not assessed as imminent, notwithstanding the possibility of errors leading to confrontation that result from the expanding military presence in the region. The emergence of such a military threat would mean that the period of Arctic Exceptionalism is over, and the regional governance model is no longer effective. An escalating threat, therefore, is an indicator of a crisis of governance.

For the non-traditional referent objects proposed by Critical theory, the imminent threats are those "in" the Arctic (Hubert 2019). These are the direct threats to the Peoples of the Arctic – as individuals and in collectives – to the climate systems, the environment and to life in the Natural World. These are produced by the direct effects of climate change, and in some cases the results of militarisation or increased economic activity. While climate

generates primary effects through physical changes, these effects are also producing *secondary* effects in the way that Arctic and non-Arctic states chose to expand their military and economic activity. They require a "common security" approach, deepening not eroding Arctic exceptionalism, and focusing on collective action to govern the Arctic, in the region and in Canada.

To address these threats, Canada needs a comprehensive defence and human security policy with an expanded set of "referent objects". These need to be the principal objects in Canada's northern security framework. Further, securing non-traditional referent objects has direct consequences for the securitisation of traditional referent objects. The integrity of Canada's claim to sovereignty is based on its ability to protect and "secure" northern peoples and the physical basis for life in the Arctic and northern territories.

(c) What has Canada's security policy response been, to the military and non-military dimensions of security?

Canada's Northern and Arctic policy framework addresses security issues as they manifest in each of these dimensions, within an integrated climate action, traditional security and sustainable development framework. As seen in Chapter 6, the Canadian military response has been outlined by their six objectives moving forward in the latest internal defence rapport. These include upgrading and expanding armed forces capabilities, increased participation in international operations, asserting sovereign claims in the Canadian Arctic, and increased cooperation with civilian actors in the North.

The Canadian federal government has not been able fully integrate its northern territories, with these areas still heavily dependent on the federal government function (Coates et al. 2008, 191-92) Canada has arguably not completed the state building process in the North compared to other Arctic states, this is because of the vast territory, and that communities have vast distances between them and the infrastructure needed to link these communities is unreliant. To closer link northern communities with the federal government, initiatives such as the Arctic Rangers need to be continued and arguably expanded.

One area in which the Canadian government does better than other Arctic states is regulation of shipping in its internal waters through programs such as NORDERG and AWPPA. With the NWP becoming increasingly accessible, Canada needs to greatly improve its Arctic shipping infrastructure, through building deepwater ports, surveillance capabilities, SAR presence, and disaster mitigation. As the United States appears likely to assert itself in the Arctic, Canada needs to find a way to cooperate, at the same time as ensuring that it has effective capacity to enforce its sovereignty over its marine territory.

(d) Are novel approaches to theory needed to conceptualise emerging security dynamics in the Arctic, attributed to climate change?

Existing theory on security is inadequate to conceptualise climate-driven security dynamics in the Arctic. The two dominant bodies of theory emerging from the literature review are both inadequate. Neo-Realism maintains a narrow scope of referent objects, focusing on states and power, without proper consideration of how threats to society and the environment can alter state power, and may become essential threats to the state's survival. Critical Theory is better suited to widening the scope of referent objects, to include emerging climate related threats to human beings, other human collectives than state formation and non-human referent objects in the natural world. However, it does not properly address the defence and sovereignty enforcement requirements of the new Arctic context.

The opening of security theory to critical approaches challenges the centrality of the state and national security. In this regard, the theory options have expanded in the past two decades, beyond the state and towards the securitising human beings and the natural world through human security theory. The widening of theoretical models is consistent with the effects of climate change in the Arctic. Both Neo-Realist and Critical models. Both the Neo-Realist and Critical narratives assume that the Arctic is an important security region. Beyond that, both models are limited in the scope of threats they address.

Realism describes a future of state and power in a warmed Arctic. Climate change is a variable driving change in the systems and structures in which competition will occur. Within this frame, Neo-Realism imagines the Arctic as a primary theatre of global power competition and a site of resource extraction or transit. It does not offer solutions to mitigate or decelerate the impact of climate change, nor does Neo-Realism describe a future for Arctic inhabitants or

the natural world. In security terms, the erosion of human well-being and the physical assets within a state are also threats to its power. These are certain to have implications for the legitimacy and stability – political and institutional – of Arctic governments, including relative to non-Arctic actors.

Critical theory is the opposite. It provides a framework for securitising people, communities, and the natural world. It both recognises climate change as a threat accelerator and multiplier and can be used to frame adaption and risk mitigation. However, critical approaches do not address the great power competition, which is real. If competition is the product of exceptionalism's loss, the region's integration into geopolitics and the crowding of the Arctic with interests of the non-Arctic states, then critical approaches need to model how competition can be decelerated and managed.

A novel theoretical approach, therefore, would be a unifying theory that allows a comprehensive approach to the full range of threats. This includes consideration of both Neo-Realist and Critical elements and understanding the interaction between them. The basis for a unified theory may be found in the relationship and interaction between referent objects, the interdependence between traditional and non-tradition referent objects, and how they should be securitised within a common approach.

8.2 Towards a New Approach for Securing the Arctic

Interplay of Dimensions/Variables
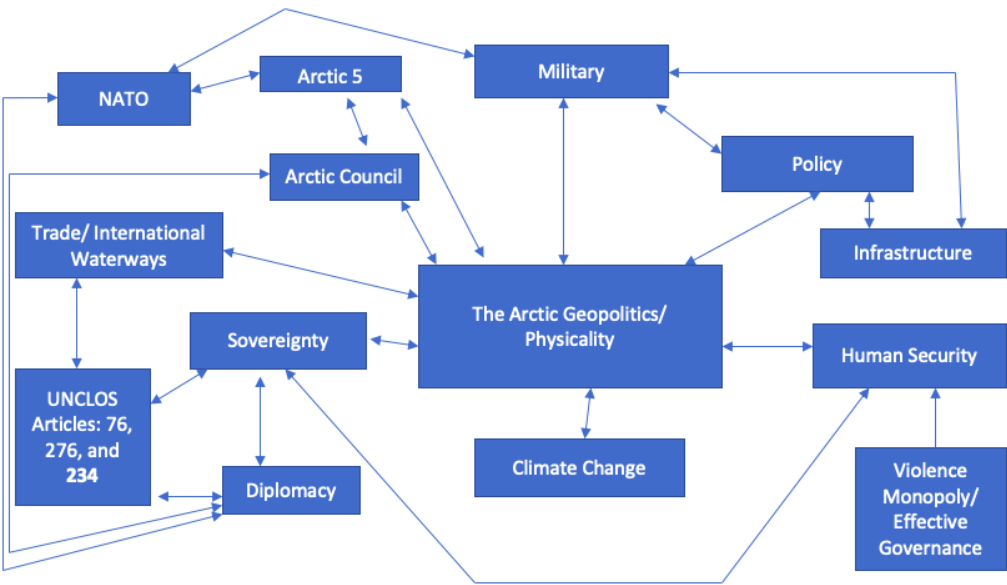
There are two scenarios for the future of Arctic Security. On the one hand there is the Neo-Realist approach, which assumes the end of exceptionalism as mentioned above, and that the Arctic will become a primary zone of geopolitical competition. The Neo-Realist approach also sees a fragmentation of regional governance, erosion of rules, and the lack of consensus based engagement. The erosion of consensus based agreement would lead to inter-alliance competition. Thereby resulting in increased militarisation in the Arctic and a tense standoff occurring.

The main competition will revolve around resource extraction. However it is unknown what the quantity of said resources are in the Arctic, with only estimates available. To transport resources after extraction access to the Northwest Passage and Northern Sea Route are critical. Canada, therefore needs to enforce its sovereign claim on the NWP, which would be against the interests of for example the United States and the EU, who are Canadian allies. Resources such as rare earth minerals will only continue to increase in value as they are critical in technology production, while resources such as hydrocarbon and oil could diminish in value as the world seeks to turn to zero-carbon energy sources. With Canada having a vast Arctic territory, the possible resources available could turn Canada into a critical state actor.

The threat or "proximate cause" of insecurity is climate change, including as it interacts with pre-existing geopolitical dynamics and other variables. Climate change is a systemic phenomenon, affecting all parts of the natural world, of which human collectives are resident and form a part. Climate-related threats are generated, multiped and amplified through complex interactions occurring within natural systems. These affect human and non-human collectives, by alternating the life sustaining environmental systems on which life depends. The Natural World, therefore, becomes an important "referent object" of security.

In the "Anthropocene", human behaviour is the primary input to these complex systems influencing change. In this context, security from the effects of climate change can only be achieved by reducing and eventually reversing that change. As all the behaviours of most or all states are responsible for climate change, then security can only be achieved through collective action – common security formed in stable and predictable relationships with shared responsibilities and burdens.

At the same time, secondary causation throws up conflicting challenges, which may undermine the pursuit of a common security solution. The changing physicality of the Arctic creates a Neo-Realist security dilemma of power competition. The dilemma reflects the shifting interests of Arctic nations, as much as the appearance of non-Arctic states and affiliated actors. It is generated by the rush to position for access to trade routes and resources, and to a role in the region's governance, and is framed geopolitically by larger dynamics. The dilemma is contributing to remilitarisation of the Arctic, which never really demilitarised after the Cold War. Provoking a power response, with classical realist insecurity of seeking to maximise power, and rebalance in the face of others holding a power advantage.

The secondary causation of threat rests with the specific effects of climate change on different parts of the natural world. Specifics dimensions of the human collective. Threats to human beings, and to life in the natural world, plant and animal. The risk of climate change will be mitigated, to the extent that Canada participates in and contributes to common security actions. This addresses the proximate cause of insecurity. Secondary causation requires a security policy with multiple referent objectives, and mutually reinforcing actions that address change in complex climate, environmental and human systems.

Military threats persist, but the movement is towards individual persons and human beings in collectives (society), and the environment, to the extent that human beings are part of the natural world and depend on it for their survival. The State remains a critical referent object, as a channel for collective action, society to state, state to the international community of states, and a holder of the institutions and resources through which human and environmental security is pursued.

The challenge to Canada is to find the right balance of regional cooperation (soft power and a revised regional governance), military force (hard power to enforce sovereignty and deter State actors and non-state actors), and to pursue human and environment security objectives that securitise these referent objects, and at the same time sustain the integrity of the Canadian state.

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Annex A: The Policies of Non and Near Arctic State

Non-Arctic States and Supranational Organisations Policies for the Arctic

This chapter will analyse the other foreign policies directed at the Arctic to find similarities and differences to the Canadian policy; NATO, EU, and China have been analysed in chapter 6. Arctic Council members will not be part of the analysis, as their policies and influence are discussed in other sections.

Germany

Germany, along with every other actor listed so far sees the importance of the potential availability of new resources in the Arctic, navigable Arctic sea routes, and deems it a potential point of contention in terms of international cooperation in the Arctic (The Federal Government 2019, 23). The 2016 federal White Paper mentions seven factors important to German Arctic security policy; the Arctic should be as demilitarised as possible; any military actions in the Arctic must have a defensive nature; potential conflicts should be detected and stopped before military actions are taken; the Arctic should be integrated into a global governance framework; Germany will defer binding decisions on the Arctic to the NATO and EU of which it is a key member; uphold UNCLOS; and lastly, follow the EU Maritime Security Strategy (2019, 25). With its icebreaker, Germany, with the consent of the Arctic actors, will continue to conduct research in the Arctic on the effects of climate change, with the aid of the French polar institute (2019, 27).

Resource extraction and maritime traffic in the Arctic are two concerns for the German government. Although maritime traffic traversing the NSR has its obvious benefits as the shortest route between Asia and Europe, the effects it will have on the Arctic climate are still relatively unknown (The Federal Government 2019, 31). German policy relating to development and sustainability in the Arctic follows the guidelines set for by the 2030 UN Sustainable Development Goals (SDG) which have the aim of protecting the Arctic environment (2019, 32). Further it wants the international community to uphold UNCLOS;

develop safe and sustainable methods of shipping; improve search and rescue capabilities in the Arctic alongside its allies; continue to support the AC in its mandate; increase investment into German shipyards specialising in Arctic transportation; create protected areas in the Arctic; create a stabilised and sustainable source of energy resources; and regulate alongside Arctic actors, fishing activities in the Arctic (2019, 33-34). The next policy under analysis is the United Kingdom.

The United Kingdom

Since 2013 the United Kingdom has created a specialised ministry within the Foreign Affairs office, highlighting the importance of British influence within the Arctic arena (Polar Regions Department 2017, 3). Like other Arctic actors, their goal is primarily continuing research initiatives and working towards a conflict free Arctic (2017, 3). Scientifically, the UK is heavily invested in the Arctic, with only three other states - The United States, Russia, and Canada - publishing more papers on the Arctic (2017, 11).

In 2019 the UK supplemented its Arctic research capacity by launching the ice-strengthened ship *RSS Sir David Attenborough,* to supplement the two blue-water research vessels to assist researchers at the Ny-Ålesund research station on Svalbard. Any research project applications that are successful within the 2020 Horizon initiative before the UK's exit from the EU are guaranteed funding from the British government (2017, 13). Going forward, the UK has a 25-year plan for combating climate change. This plan entails reducing carbon emissions, building an infrastructure to detect extreme weather events linked to climate change, how to minimise damage from said events, and generally improve methods on how to protect the environment (2017, 16). Alongside Germany, the UK wishes to create protected marine zones within the Arctic in accordance with the UNCLOS treaty (2017, 18).

Security wise, the UK looks to the Arctic Council to solve tensions in the Arctic, even though the AC does not have a security mandate (Polar Regions Department 2017, 21). As a major actor within NATO, the UK sees the growing militarisation of the Arctic as a potential source of future conflict. Since 2018, the UK has increased its own military capabilities in the Arctic, sending ever larger Royal Marine deployments to partake in Arctic military drills in Norway, as well as reviving nuclear submarine capabilities in the area (Depledge et al. 2019, 5). Through its air force bases in Scotland, the Royal Air Force (RAF) monitors Russian

activity, and has since 2019 patrolled the airspace over Iceland, while using Poseidon aircraft to monitor Russian submarine activity in the Arctic (2019, 5). Even with the UK's exit from the EU, they will maintain their presence in the Arctic through partnerships with NATO allies that have Arctic territory.

France

France, like most actors listed in this chapter, see the increased availability of resources in the Arctic as a direct effect of climate change both positively and negatively. On the positive side, commerce between the East and West will eventually become more efficient as the NSR and NWP become ice-free over prolonged periods of the year, with shipping times drastically reduced compared to the use of the Panama and Suez canals. On the opposite side of the scale, particularly Russian militarisation of the Arctic is troubling along with the influx of Chinese investment in the region (Ministry for the Armed Forces 2019, 2). The French claim that, because the Arctic is composed of approximately 50% Europeans, that it has become a European issue.

French activity in the Arctic has an extensive historical background. It was the first state actor to establish a research station on Svalbard in 1963, as well as becoming one of the inaugural observer states of the Arctic Council (Ministry for the Armed Forces 2019, 4). France is also an active member in the Arctic Security Forces Round Table (ASFRT), which is one of the few organisations that have a military purpose in the Arctic, created by Norway and the United States, with the main task of conducting search and rescue operations (2019, 4). France also conducted the first non-Russian autonomous military passage of the NSR in 2018, without the aid of icebreakers (2019, 7). Surprisingly, the French government rejects most sovereignty claims in the Arctic, wishing the region to follow the same ruleset as treaties governing Antarctica (2019, 2). The next Arctic policy to be reviewed is that of the Netherlands.

Netherlands

The Netherlands, like its European counterparts, sees climate change as an existential threat for the Arctic. As a participant of the 2030 Agenda for Sustainable Goals, the Netherlands is required to meet sustainability goals (The Ministry of Foreign Affairs 2021, 14). Melting sea ice has an adverse effect on the Netherlands as a low-lying country highly susceptible to

flooding, so preventing future annual temperature rises is high on the list of priorities (2021, 16). One of the Netherland's scientific priorities is to create a framework of binding targets within the *Post-2020 Global Diversity Framework,* thereby aiding the threatened biodiversity in the Arctic (2021, 19). The Netherland's is also one of 24 signatories to the ILO 169 Convention (Indigenous and Tribal Peoples Convention), focusing on the protection of indigenous communities, their customs, and traditions; with only Denmark and Norway being signatories and members of the Arctic Council (2021, 19). Like other policies, the Netherlands emphasises combating climate change and protecting the Arctic and its inhabitants.

The Netherlands sees the UNCLOS treaty, along with the AC as the foremost tools for effective and peaceful governance of the Arctic, especially as there is a mandate within UNCLOS to resolve conflicts (The Ministry of Foreign Affairs 2021, 24). As an observer state within the AC since the Iqaluit Ministerial meeting in 1998, the Netherlands supports the mission of the AC in non-security matters concerning the Arctic and is a regular participant in AC working groups (2021, 26).

Within the Dutch framework, security has three spheres: ecological, economic, and military and political (2021, 28). Economic interests are highlighted by decreasing sea ice, therefore allowing for greater resource extraction and maritime transit through the northern passages. Ecologic security has been mentioned in the paragraph above, pertaining to protecting the environment, species, and its inhabitants. The political sphere is the Dutch participation in the AC and being a signatory of for example UNCLOS and ILO 169. The Netherlands prefers that any military decisions on the Arctic be agreed upon within NATO (2021, 28-29). Security matters concerning the Netherlands in the Arctic is Russian militarisation and growing Chinese influence. The next set of policies under analysis are those of Japan, South Korea, Singapore, and India. They are placed together because of their similarities.

Japan, South Korea, Singapore, and India

Japan has been granted observer status in the Arctic council, and has been an actor in the Arctic for over 70 years, and as a demilitarised state following World War II, it has mainly conducted research on resource sustainability and recently climate change (The Nippon

Foundation 2017, 2). Japan's Arctic policy is intertwined with their ocean policy, as an island state heavily reliant on the waters around them. Japan along with Canada agrees with the assessment presented by the IPPC regarding climate trends in the coming decades (2017, 2).

Arctic policy in Japan is a single point of focus with the "policies and measures concerning the oceans" originally adopted in 2013 (2017, 3). Japan's ocean and Arctic policy revolves around five points: *Enhancement and Promotion of Arctic Research; Protection of the Marine Environment of the Arctic Ocean; Promotion of the Ocean Economy; Securing Safety and Security of the Arctic Ocean;* and *Promoting International Cooperation on the Arctic* (2017, 1). So unlike other state actors in the Arctic, Japan's Arctic agenda is not one overly influenced by traditional security issues.

Maritime activity is a troubling concern for Japan, because of increasing temperatures, the Northern Sea Route (NSR) in Russia will become more accessible. Entering and exiting the NSR on the eastern side requires traversing the Sea of Japan, this could therefore lead to congestion of the area in the future (The Nippon Foundation 2017, 6). Therefore, it is Japan's goal to create designated transportation lanes throughout the Soya, Tsushima, and Tsugaru straits, to minimise potential damage to the marine ecology (2017, 6). Unlike Canada, Japan's primary Arctic focus is on the NSR, and what decreasing ice masses means for the Japanese ocean dependent "Blue" economy.

Japan's goal, therefore, is to improve Arctic sea-based infrastructure, so that the state can capitalise on growing tourism, access to ocean-based resources, while raising awareness for climate change through its Arctic research (2017, 8). Japan's other main Arctic policy goal is increasing bilateral programs with neighbouring Arctic coastal states to improve growth of their prospective Blue economies (2017, 9). The policy report does briefly venture into the traditional security realm for Japan in the Arctic. Their main focus being bilateral cooperation with members of the Arctic Council, and upholding the UN Convention on the Law of the Sea (UNCLOS), specifically freedom of navigation, which would mean contestation of Canada's sovereignty claims over the NWP (The Nippon Foundation 2017, 12).

South Korea's Arctic policy published in 2013 is relatively brief, with no mention of traditional security policy; this is likely because traditional security actors within the state were not involved in drafting the policy paper. South Korea, like Japan, heavily focuses

research in the Arctic, while also seeing the potential commercial advantages of an ice free NSR. Similarly, to other actors in this chapter, they emphasise the need to protect the Arctic environment and marine ecosystem; it has also recently been given observer status in the Arctic Council (Maritime Institute of Korea 2013, 3).

South Korea's goals as an Arctic actor; sustainable development in the Arctic, increased international cooperation, increased research and scientific activity, and, increased commercial cooperation with other AC permanent and observer members (2013, 5-6). The Republic of Korea sees the treaties concerning Antarctica as a blueprint for a policy framework for the Arctic, where research should take precedence over militarisation, particularly with the establishment of an international research centre (2013, 15).

Singapore is an emerging non-Arctic state in the Arctic. Singapore became a permanent observer of the Arctic Council in 2013 (Burke and Saramago 2018). Where Singapore differs from other observer states to the AC is that it does not have a significant scientific presence in Arctic affairs, focusing primarily on trade. As one of the major transportation hubs on the planet, Singapore is heavily reliant on maritime trade, therefore the opening of the northern shipping routes could both be a threat and opportunity to Singapore's status in the international community (Watters and Tonami 2012, 105-106). The threat arises from the potential for ships to avoid the Straits of Malacca and Hormuz, instead opting for a direct route from north-east Asia straight through the NSR (2012, 107-108). On a positive note, the Singaporean state has extensive expertise in managing shipping, which could be used to develop new ports in China (2012, 108). It is also likely that the NSR cannot be used year-round to the point that it becomes financially profitable for private actors and states to frequently use the waterway soon.

India claims to have an Arctic presence dating back to the singing of the Svalbard treaty in 1920 as one of the British overseas dominions, sending its first scientific team in 1981 (Pronina, Valeriaa et al. 2020, 3). Along with Singapore, South Korea, and Japan, India gained observers status in the Arctic Council in 2012. India's expanding economy is heavily reliant on coal, with 70% of the economy deepening on it for power (2020, 4). Therefore, untapped natural resources in the Arctic are essential for the growing economy.

India's main competitor in the region, China, is a growing reason for Indian participation in Arctic governance, as per now, India can theoretically block off trade to China by blocking of the Strait of Malacca, this would however not be the case with a navigable NSR, thereby making India lose most of its diplomatic leverage (2020, 7-8). For most of the Asian observer states, scientific engagement in the Arctic plays an important role in policy formation, however, it is quite clear that the potential northern shipping routes take precedence, as they would drastically lessen shipping costs and travel in the future when they become navigable without the aid of icebreakers. The need for natural resources in these expanding economies, especially for India and China is also an important reason for increased activity in the Arctic. The final Arctic policy up for analysis in this chapter is that of China.

Summary of Chapter

This chapter has shown that non-Arctic states have vested interests in the Arctic. Most clearly state that their interest lies in preventing further negative trends of climate change, predominantly through scientific engagement in the area. There are also clear traditional security factors at play, although there is almost a consensus that the Arctic should follow the example of Antarctica and become a nuclear free zone. The potential benefits of the NSR and NWP opening for commercial maritime traffic are of immense interest especially to the non-Arctic Asian countries. One clear issue for the Canadian Arctic is the interest in the NWP, as all state actors with sub-chapters in this chapter contest Canadian sovereignty over the NWP, claiming that it is an international right under the UNCLOS treaty.