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The Arctic in World Environmental History

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The Arctic in World Environmental History

Jonathan D. Greenberg*

ABSTRACT

This Article situates the Arctic in global environmental history across the long duration of time.

For millions of years, the Arctic has been the world's most important "barometer of global change and amplifier of global warming."¹ For twenty thousand years, the Arctic has been the homeland of modern human settlement, and it has played a central role in the interplay between global climate change and human migration throughout Eurasia and the Americas. Since the late fifteenth century, Arctic aboriginal peoples, lands, and seas have been thoroughly integrated into the international history of European trade, capitalism, and colonization; the territorial expansion of modern nation states; and the transnational strategic history since the outset of the Cold War, including the continued basing of nuclear-armed missiles, bombers, and submarines throughout the Arctic region.

Appreciation of this international history can provide lessons for contemporary policymakers to help mitigate grave risks to human life and biodiversity in the Arctic and sub-Arctic. For example, this Article calls for negotiations between the U.S., NATO, and the Russian Federation on the basis of Russian President Mikhail Gorbachev's 1987 proposal to transform the Arctic into "a zone of peace" and, specifically, to establish "a nuclear free-zone in northern Europe."²

In conclusion, this Article identifies how deeply embedded global systems of political economy and international relations continue to shape recent developments in the Arctic at this time of exacerbated climate change and resulting ecological crisis. Appreciation of the Arctic's environmental history can help decision-makers to more knowledgeably and effectively support

1. Andrew Davies et al., Letter, *Late Cretaceous Seasonal Ocean Variability from the Arctic*, 460 NATURE 254, 254 (2009).

2. Mikhail Gorbachev, Speech at the Presentation of the Order of Lenin and the Gold Star Medal to the City of Murmansk (Oct. 1, 1987), available at http://www.barentsinfo.fi/docs/Gorbachev_speech.pdf.

indigenous self-determination, resource conservation, and environmental stewardship throughout the circumpolar bioregion.

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One of the oldest dreams of mankind is to find a dignity that might include all living things.

Barry Lopez, *Arctic Dreams: Imagination and Desire in a Northern Landscape*.³

I. INTRODUCTION

Now we know that the ice caps are melting, effectively changing the polar environment forever. Asked to close our eyes and imagine the Arctic as it appeared in years past, polar bears may come to our minds. Yet now we imagine a single bear wobbling upon a patch of broken-off sea-ice, a searing image cycled through the internet into the world's consciousness as a metaphor for the Arctic's fate in our new and rapidly warming millennium. We worry about the extinction of polar species and the fate of vulnerable coastal populations (in the Ganges delta of Bangladesh, for example), whose lands and lives would be destroyed if Greenland ice sheets melt into the Arctic Sea. Indeed we are right to worry and take whatever collective action we can as families, societies, organizations, and governments. We know about huge megaprojects of oil, gas, and mineral extraction and production throughout the far North. We are simultaneously aware that huge economic opportunities, even for indigenous peoples, come fraught with grave risks. But we may not have the background to place current life-changing developments in historical context. We may not understand that our recent problems and challenges have deep origins and structural roots. Without this understanding, we are hobbled in our efforts to manage them effectively.

A. Nunavut and Ultima Thule

The Arctic is a place on the earth at the globe's circumpolar north. Yet the Arctic also represents an idea, a place in the human mind. For centuries, the North Pole and its surrounding ice, land, and sea has evoked a kaleidoscope of images and stories: heroic expeditions either defying or embracing an icy death; Eskimo

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3. BARRY LOPEZ, *ARCTIC DREAMS: IMAGINATION AND DESIRE IN A NORTHERN LANDSCAPE* 405 (Vintage Books 2001) (1986).

generosity extending, so it is said, to the warm comfort of a gracious host's wife on a dark, below-zero night; or today's terrified polar bear, cast adrift into the sea.

Of all of these polar tropes, two images reside at the heart of Arctic history. Each of these conceptions evokes the passions and certainties of bedrock beliefs held, respectively, by indigenous and foreign actors. The first image envisions the Arctic as *nunavut*: the Inuit word for "our land."⁴ In the second image, the Arctic is *Ultima Thule*: the awesome, icebound, resource-abundant northernmost boundary of classical and early modern European imagination and ambition, and the last frontier of civilization's global, national, and commercial development.⁵ I would argue that the fateful tension between these competing visions—played out in struggles to control resources in northern lands and seas since the first European-aboriginal contact—is the primary engine driving the long, dramatic narrative arc of the region's modern history, chapter by chapter, across the circumpolar north.⁶

The image of *nunavut* evokes deep feelings of identification with the particular homeland and natural ecosystem to which each northern aboriginal people belongs and on which each depends for its sustenance and survival. Canadians know this term well because it was taken by Inuit of northwest Canada as the name of the Nunavut Territory. Established in 1999 as Canada's first official geographic and political unit with a primarily indigenous population, Nunavut is administered as a Canadian territory under aboriginal self-government.⁷ In this Article, I use the term *nunavut* with a small "n" to connote traditional conceptions of aboriginal self-determination more generally across hundreds of indigenous nations throughout the circumpolar north.

In contrast, *Ultima Thule* evokes ancient and modern European images of "a distant northern place, geographically undefined, and

4. Galit A. Sarfaty, *Nunavut Territory Established: Inuit Gain New Homeland April 1*, 23 *CULTURAL SURVIVAL* Q. 16, 16–17 (1999).

5. JEAN MALAURIE, *THE LAST GREAT KINGS OF THULE* 3 (Adrienne Foulke trans., E.P. Dutton 1982) (1976); see also U.S. Dept. of Energy, Energy Information Administration (EIA), State Energy Profiles: Alaska, http://tonto.eia.doe.gov/state/state_energy_profiles.cfm?sid=AK (last visited Oct. 4, 2009) (describing Alaska's vast amount of natural resources).

6. In this analysis, I draw on Robert Bone's discussion of competing Canadian perceptions of Canada's North: "[f]or most, the North represents the colder lands of North America where winters are extremely long and dark, where permafrost abounds, and where few people live. Canadians also perceive of this cold and diverse environment in two ways: either as a frontier or as a homeland." ROBERT M. BONE, *THE GEOGRAPHY OF THE CANADIAN NORTH: ISSUES AND CHALLENGES* 1 (2d ed. 2003).

7. About Nunavut, <http://www.canadavisa.com/about-nunavut.html> (last visited Oct. 4, 2009). See also Alexandra Kersey, *The Nunavut Agreement: A Model for Preserving Indigenous Rights*, 11 *ARIZ. J. INT'L & COMP. L.* 429, 431 (1994).

shrouded in esoteric mystery.”⁸ The term “Thule” is most often traced to the Greek explorer Pytheas, who imagined and tried to find a fabled archipelago north of Scandinavia.⁹ Early and medieval European poets extolled the stark, compelling beauty of *Ultima Thule*—the most hyperborean realm of all: “[t]he end of the world; the last extremity.”¹⁰ It was a place of overwhelming mystery and yet, at the same time, limitless treasure and utility. In *Georgics*, Virgil prophesizes its future mastery: *tibi serviat Ultima Thule* (the farthest Thule shall serve you).¹¹ Throughout the subsequent centuries, in the spirit of Virgil, European scientists, adventurers, mercantilists, and mercenaries dreamed of navigating polar seas, exploring Northern geographies, reaching the North Pole itself, and conquering Arctic territories for their king or state. *Ultima Thule* never lost its power to evoke humanity’s ultimate northernmost frontier; to inspire enormously difficult, challenging, and costly endeavors to reach and conquer it; and to propel among the most heroic feats of exploration, endurance, and engineering in global human history.

Implicitly or explicitly, each image also embodies fiercely-held conceptions of justice, law, property, and governance. In Arctic lands imagined as *nunavut*, aboriginal inhabitants have always held legal jurisdiction, land rights and title, and political control—each naturally derived from principles of national sovereignty and territoriality based on indigenous self-determination within understood if not demarcated boundaries. But in Arctic lands imagined as *Ultima Thule*, the rights of foreign occupants derived

8. Rolf Gilberg, *Thule*, 29 ARCTIC 83, 83 (1976). The European intellectual history of “Thule” has a very dark, proto-Nazi chapter. See generally Jeffrey A. Goldstein, *On Racism and Anti-Semitism in Occultism and Nazism*, 13 YAD VASHEM STUDIES 53, 65–72 (1979) (describing the militant, anti-semitic Thule Society). On August 17, 1918, at the swastika-adorned Hotel Vier Jahreszeiten in Munich, German anti-Semites launched a new racist organization, The Thule Society (*Thule Gesellschaft*). *Id.* at 67–68. Proclaiming occult beliefs in the Nordic polar origins of the original Aryans, the Society’s leadership identified the German race as the true heirs of ancient Thuleans. *Id.* at 68. Already by 1918, at the close of World War I, when German victory was unattainable, Thule leader Rudolph von Sebottendorff exhorted Germans to fight “against ‘our deadly enemy, Judah’ . . . ‘until the swastika rises victoriously out of the icy darkness.’” JOSCELYN GODWIN, ARKTOS: THE POLAR MYTH IN SCIENCE, SYMBOLISM AND NAZI SURVIVAL 51 (1996). Nazi Party officials who had been Thule Society members include Karl Fiehler, Gottfried Feder, Hans Frank, Rudolf Hess, Alfred Rosenberg and Count Arcoauf Valley. Goldstein, *supra*, at 69.

9. See, e.g., 1 THE GEOGRAPHY OF STRABO ch. 5, § 8 (Horace Leonard Jones trans., 1917) (“Now Pytheas of Massilia tells us that Thule, the most northerly of the Britannic Islands, is farthest north, and that there the circle of the summer tropic is the same as the arctic circle.”).

10. E. COBHAM BREWER, DICTIONARY OF PHRASE & FABLE (1898). Brewer suggests its possible etymology in the Gothic *tiule* (the “most remote land”) or the Greek *telos* (“the end”). *Id.*

11. ANDREW H. MERRILLS, HISTORY AND GEOGRAPHY IN LATE ANTIQUITY 322 (2005) (citing JORDANES ET AL., THE GOTHIC HISTORY OF JORDANES IN ENGLISH VERSION 52–60 (Charles C. Mierow trans., Speculum Historiale 1966) (1915)).

from legitimate claims of national sovereignty based on the proper application of the customary international law principle of *terra nullius* (discovery and occupation of land unclaimed by any other nation-state sovereign).

During the five or six hundred year period following the initial contact between Europeans and indigenous northern peoples, these opposing Arctic images and claims have been irreconcilable. In no case did indigenous sovereignty claims prevail—at least not until the adoption of the Nunavut Land Claims Agreement Act and the corresponding Nunavut Act by the Canadian Parliament in 1993, and related current developments discussed in this Article’s conclusion.¹²

B. *Political Ecology and the Longue Durée*

This Article honors Ernest Gruening, Governor of the Alaskan Territory (1939–1953), who delivered a forward-thinking talk at the September 1951 Alaska Science Convention subsequently published as “The Political Ecology of Alaska” in the December 1951 *Scientific Review*.¹³ “An explanation of my title is scarcely necessary,” he states.¹⁴ “I propose to discuss the relation of the human organisms that have constituted and still constitute Alaska’s population to their institutions, both public and private, and to their physical surroundings.”¹⁵ For Gruening, political ecology is “political history, economic history, social history, all closely interwoven.”¹⁶ Examining this history helps us remember that “Eskimos and Indians were here first and presumably they will always be here.”¹⁷ In this context, respect for the Arctic’s indigenous peoples is a fundamental value, if not the highest priority, of regional governance.¹⁸ Long before the emergence of a global “environmental movement,” and in contrast to so many regional leaders for whom hydrocarbon extraction has trumped environmental protection and indigenous social welfare,¹⁹

12. Kersey, *supra* note 7, at 439–40.

13. Ernest Gruening, *The Political Ecology of Alaska*, 73 SCI. MONTHLY 376, 376–86 (1951).

14. *Id.* at 376.

15. *Id.*

16. *Id.* at 377.

17. *Id.* at 384.

18. *Id.*

19. Walter Hickel, Governor of Alaska and later U.S. Secretary of the Interior, is most famous for the “Hickel Highway” he commissioned in 1968, a bulldozed road to enable oil from Prudhoe Bay to be hauled in tanker trucks all the way south to Fairbanks. The Alaska Pipeline: Governor Walter J. Hickel and the Hickel Highway, http://www.pbs.org/wgbh/amex/pipeline/peoplevents/p_hickel.html (last visited Oct. 4, 2009). Governor Hinkel describes the origin of the highway in a flash of insight that came to him when he flew over Anaktuvuk Pass on May 2, 1967: “[a]s I looked over the long gradual ramp of the North Slope, where the continental divide slowly merges with the Arctic Ocean, a vision hit me, or call it intuition: I saw an ocean of oil. ‘There’s 40

Governor Gruening sought to understand the relationship between Arctic history, indigenous culture, and contemporary political events. Upon that foundation, he identified and pursued a vision of sustainable Arctic governance that remains compelling today.

“Political ecology” scholarship has developed significantly since Governor Gruening’s 1951 talk. This interdisciplinary field of inquiry investigates the relationship between human groups (including nation states, indigenous communities, and external economic actors) and identified local or regional physical environments over time.²⁰ Today, political ecology scholars include cultural and physical anthropologists, human geographers, environmental scientists and policy analysts, and conservation biologists.²¹ Independently or in multi-disciplinary teams, they examine “cultural, demographic, economic, and political dimensions of resource use and ecological change, focusing on these issues and their linkages at and across multiple spatial and temporal scales,” with attention to historical forces shaping present conditions and relationships.²²

Without understanding the environmental history of a region under investigation—in particular, interactions between sovereignty, territoriality, and patterns of resource extraction and use over time—assessments of current developments would be insufficiently thick and prescriptions for regulatory process or policy actions would risk failure. An enormous and rich library of environmental, political, and

billion barrels of oil down there,’ I said.” *Id.* The Hinkel Highway has since been replaced by the Dalton Highway, commonly referred to as the “Haul Road.” The Dalton Highway: A Multi-Media History of Alaska’s Arctic Road, http://jukebox.uaf.edu/haul_road/index.htm (last visited Oct. 4, 2009).

20. Political ecology research involves, or incorporates, ethnographic field work in communities living in an identified physical region or habitat; it includes attention to relationships between human beings, animals and other living things in the relevant ecosystem; and it examines relationships between regional inhabitants and external actors contesting local sovereignty claims and competing for local resources. See, e.g., Jamie Kirkpatrick, *The Political Ecology of Biogeography*, 27 *J. BIOGEOGRAPHY* 45, 45–48 (2000) (discussing how biogeographic research can affect political change); R.P. Neumann, *Political Ecology of Wildlife Conservation in the Mt. Meru Area of Northeast Tanzania*, 3 *LAND DEGRADATION & REHABILITATION* 85, 85–96 (1992) (examining conservation problems in Tanzania from the perspective of political ecology); William Wolmer, *Transboundary Conservation: The Politics of Ecological Integrity in the Great Limpopo Transfrontier Park*, 29 *J. S. AFR. STUD.* 261, 261–78 (2003) (examining political and economic rationales behind the Transboundary Natural Resource Management initiative in Southern Africa).

21. PAUL ROBBINS, *POLITICAL ECOLOGY: A CRITICAL INTRODUCTION* 5 (2004).

22. Neumann, *supra* note 20, at 86–87 (focusing on a common objective of scholars in the field: to understand “the political, economic and social structures and processes which underlie the human practices leading to degradation” of land, natural resources, and ecosystems). Neumann identifies a shared research framework based on three elements: “(1) a focus on the land users and the social relations in which they are entwined; (2) tracing the linkages of these local relations to wider geographical and social settings; and (3) historical analysis to understand the contemporary situation.” *Id.* at 87.

legal scholarship about the Arctic has been created in recent years, especially as concern about global warming has become heightened.²³ However, there is a surprisingly small literature addressing the transnational history of the Arctic as a region.²⁴

Scholars have largely studied the Arctic in national or local context—anthropologists and ethnographers because of the professional orientation toward smaller geographical and community units, and political scientists and historians because of longstanding national categories of expertise or because “area studies” programs only very rarely include the Arctic as such a subject “area.”²⁵ But there may be other explanations as well. Fernand Braudel, the great historian of European capitalism and civilization, cautioned that “[t]here are always some areas world history does not reach, zones of silence and undisturbed ignorance.”²⁶ Perhaps historians have perceived the Arctic—with its small native populations, geographical distance, and brutal climate—as such an isolated zone.²⁷

While embracing Braudel’s attention to “temporalities of long and very long duration” (what Braudel calls the “*longue durée*”),

23. This literature includes outstanding scholarship by Arctic experts Fikret Berkes, Scott Borgerson, Michael Byers, David Caron, Henry Huntington, E. Carina H. Kesitalo, Timo Koivurova, Igor Krupnik, P. Whitney Lackenbauer, Ted McDorman, Mark Nuttall, Rosemary Rayfuse, Donald Rothwell, David L. Vanderzwaag, and Oran Young, as well as the by the transnational research teams who have produced invaluable reports by the Arctic Council working groups. I especially recognize the great expertise of the authors of accompanying articles in this volume, whose presentations at the February 2009 Symposium at Vanderbilt University Law School added immensely to my own knowledge of the Arctic and awareness of cutting-edge geographical, scientific and legal research in the field.

24. Researching this Article, I consulted my own personal library of world history volumes, a combined total of thousands of pages of fine print, but there were no references to the Arctic in any of these books. See, e.g., THE COLUMBIA HISTORY OF THE WORLD (John A. Garraty & Peter Gay eds., 1972) (containing no reference to the Arctic as a region); J.A.S. GRENVILLE, A HISTORY OF THE WORLD IN THE 20TH CENTURY (Belknap Press 2000) (1980) (same); J.M. ROBERTS, A CONCISE HISTORY OF THE WORLD (Oxford Univ. Press 2005) (1993) (same); JOEL KRIEGER ET AL., THE OXFORD COMPANION TO POLITICS OF THE WORLD (1993) (containing no entry for “Arctic”).

25. For important exceptions, see, for example, the historical chapters of SANJAY CHATURVEDI, THE POLAR REGIONS: A POLITICAL GEOGRAPHY (John Wiley and Sons 1996), the chapters on Arctic whaling and the Siberian fur trade in the outstanding JOHN F. RICHARDS, THE UNENDING FRONTIER: AN ENVIRONMENTAL HISTORY OF THE EARLY MODERN WORLD 517–46 (2003), and the eloquent LOPEZ, *supra* note 3.

26. Achille Mbembe, *At the Edge of the World: Boundaries, Territoriality, and Sovereignty in Africa*, 12 PUB. CULTURE 259, 260 n.3 (2000) (citing 3 FERNAND BRAUDEL, CIVILIZATION AND CAPITALISM: THE FIFTEENTH TO THE EIGHTEENTH CENTURY 18 (Siân Reynolds trans., Harper and Row 1984)).

27. But see CHATURVEDI, *supra* note 25 (documenting Arctic history); RICHARDS, *supra* note 25, at 517–46 (containing chapters on Arctic whaling and the Siberian fur trade). The North American environmental history of Richard White and regional Arctic histories by Robert McGhee and Richard Vaughan are also invaluable exceptions.

Cameroonian political thinker Achille Mbembe rejects the notion that Africa should be considered such a zone, removed from both international history and global political economy, at the “margins” or “edge” of the world.²⁸ American anthropologist Eric Wolf went even further, rejecting the idea that any such “zones of silence and undisturbed ignorance” ever existed.²⁹ Specifically, Wolf identified within modern historiography (and throughout the social sciences) an implicit, profoundly erroneous conception of aboriginal nations and communities as “people without history.”³⁰

This discussion of the Arctic in world history is inspired by Mbembe and Wolf—just as its extremely long time frame is inspired by Braudel. In Braudel’s work, the investigation of social and environmental transformations over many centuries does not preclude attention to the short time span of events and the details of individual experience, however idiosyncratic or seemingly inconsequential.³¹ On the contrary, Braudel emphasized that “what matters is the fact that our discussion will move between these two poles of time, the instant and the *longue durée*.”³²

In this spirit, this Article argues that the Arctic has never been a pristine oasis or an isolated, undisturbed zone at the top of the world. On the contrary, even the smallest northern aboriginal nation and the most remote polar micro-environment have been impacted by foreign intervention; business and political decisions made in places like Amsterdam, London, Moscow, and Washington; and the purchase of Arctic-originated commodities in places like Beijing, Copenhagen, St. Petersburg, Stockholm, and New York. No community or environment in the Arctic remained untouched and unchanged by the larger historical forces, ideologies, and economic engines that have shaped the international system as it evolved since the beginning of the European nation-state system. In sum, Arctic peoples and

28. Mbembe, *supra* note 26, at 260.

29. See ERIC R. WOLF, *EUROPE AND THE PEOPLE WITHOUT HISTORY* 3 (1982) (“[T]he world of humankind constitutes a manifold, a totality of interconnected processes, and inquires that disassemble this totality into bits and fail to reassemble it falsify reality.”).

30. *Id.* at 18. Wolf exposes this misconception even in anthropology, the discipline which has studied indigenous cultures and societies more than any other, and to which historians, in leaving the histories of indigenous peoples largely unexamined, have deferred. *Id.* at 18–19. For Wolf, the most important connections and interrelationships between local communities and Europeans, initiated by mercantile and colonial expansion, has been obscured in each of two prevalent strands of modern social and cultural anthropological studies: on the one hand, ethnographic investigation of “local microcosms of meaning, conceived as autonomous systems”; and, on the other hand, “the statistical cross-cultural comparisons of coded features drawn from large samples of ethnographically known cases.” *Id.* at 16–18.

31. FERNAND BRAUDEL, *ON HISTORY* 27 (Sarah Matthews trans., Univ. of Chi. Press 1980) (1969).

32. *Id.*

ecosystems have always been highly integrated into this global history. Indeed, there are not two separate histories here at all, I would argue; rather, they are one and the same. Arctic regional history is a theatre in which international history has played out from its beginning.

II. DEEP TIME ECHOES

Consider the earth's history as the old measure of the English yard, the distance from the King's nose to the tip of his outstretched hand. One stroke of a nail file on his middle finger erases human history.

John McPhee, *Basin and Range*.³³

The overwhelming consensus of climate scientists today is that we have already commenced a dramatic period of global climate change in which higher temperatures are likely to be sustained beyond levels that human beings as a species have ever experience before.³⁴ The cyclical nature of planetary climate history suggests that a cooling period will eventually follow after some period of millennia.³⁵ However, we are in *terra incognita*, because we do not know whether human intervention (particularly through the vastly increased carbon emissions from the burning of fossil fuels) has so altered the system's highly sensitive climate triggering mechanisms that it has thrown them radically off course. All we can do at this point (other than tax emissions, reach binding international agreements to reduce them globally, improve renewable energy technologies and greatly expand their use, consume less and conserve more) is to make sure that the best scientists are well-funded to go back to the laboratory for more data collection and analysis. For this urgent investigation, the richest climate change laboratory in the world—the best-stocked, the most fertile and productive, and the ideal place to study the effects of global warming—is the Arctic itself.³⁶

33. STEPHEN JAY GOULD, *TIME'S ARROW, TIME'S CYCLE: MYTH AND METAPHOR IN THE DISCOVERY OF GEOLOGICAL TIME 3* (Penguin Books 1988) (1987) (quoting JOHN MCPHEE, *BASIN AND RANGE* (1981), *reprinted in* JOHN MCPHEE, *ANNALS OF THE FORMER WORLD* (1998)).

34. U.N. Intergovernmental Panel on Climate Change [IPCC], *Synthesis Report, 2007 CLIMATE CHANGE* 30.

35. See Peter N. Spotts, *Ice Age to Warming - and Back?*, CHRISTIAN SCI. MONITOR, Mar. 18, 2004, at 13.

36. See V. M. Kotlyakov et al., *Deep Drilling of Glaciers in Eurasian Arctic as a Source of Paleoclimatic Records*, 23 Q. SCI. REV. 1371, 1371-73 (2004) (using deep drilling of arctic glaciers to study temperature change and other effects of global warming).

A. 70 Million Years Ago

A 1983 Canadian scientific expedition to the Arctic's Alpha Ridge seabed recovered an astonishing treasure trove: "cores containing shallow buried Cretaceous diatom ooze," including sediments dating from 70 million years ago (70 mya).³⁷ In 2009, a team of U.K. paleoclimate scientists obtained access to samples of this material that had been stored at a Nova Scotian oceanographic institute.³⁸ Identifying "superbly preserved diatoms" (tiny plant-like organisms) for micropalaeontological study,³⁹ their results suggest that the greenhouse conditions of the Late Cretaceous period (i.e., an ice-free summer, intermittent sea ice in the winter, and seasonal phytoplankton growth) resemble current transformations in the Arctic Sea, and that these changes, in turn, "could affect the fisheries and the entire ecosystem."⁴⁰

B. 55 Million Years Ago

The Palaeocene-Eocene thermal maximum (PETM) was "a period of intense global warming about 55 million years ago . . . attributed to a rapid rise of greenhouse gas levels."⁴¹ In 2007, a team of British geologists and biochemists published evidence that the PETM rise in Arctic temperatures generated an increase in the production and release of more potent greenhouse gases in the form of carbon-saturated methane.⁴² Reviewing the PETM data, a team of German marine scientists concluded that current (2009) conditions of thawing circumpolar permafrost "could release large quantities of greenhouse gases into the atmosphere, thus further increasing global warming and transforming the Arctic tundra ecosystems from a carbon sink to a carbon source."⁴³ In Western Siberia, a vast frozen peat bog is melting so fast that "[a]n area the size of Germany and France combined could be poised to release seventy billion tons of methane,"⁴⁴ a prospect botanist Sergei Kirpotin describes as "an

37. Davies et al., *supra* note 1, at 254.

38. *Id.*

39. *Id.*

40. Abstractions, 460 NATURE 149, 149 (2009) (quoting Alan Kemp, Paleo-Oceanographer, U.K. Nat'l Oceanography Ctr., Univ. of Southampton).

41. Richard D. Pancost et al., *Increased Terrestrial Methane Cycling at the Palaeocene-Eocene Thermal Maximum*, 449 NATURE 332, 332 (2007).

42. *Id.*

43. Walter C. Oechel et al., *Recent Change of Arctic Tundra Ecosystems from a Net Carbon Sink to a Source*, 361 NATURE 520, 520-23 (1993).

44. BILL STREEVER, COLD: ADVENTURES IN THE WORLD'S FROZEN PLACES 241 (2009).

ecological landslide that is probably irreversible.”⁴⁵ According to the 2007 scientific report of the International Panel on Climate Change (IPCC), “on a per molecule basis, methane has more than 20 times the warming influence” of carbon dioxide.⁴⁶

Meanwhile, also in 2009, a team of Colorado-based paleontologists has analyzed mammalian tooth enamel specimens from fossil assemblages retrieved from Ellesmere Island, Nunavut, and dating back to the “deep time laborator[y]” of the Eocene period (between 50 and 55 mya).⁴⁷ The team’s results confirmed that the Eocene Arctic was approximately 40°C warmer than it is today. Filled with deltas, swamps, and forests, it was year-round home to “a diverse mammalian fauna most similar to coeval lower-latitude faunas in western North America,” including alligators, tortoises, and lizards.⁴⁸ This evidence suggests that that current global warming will lead lower-latitude plants and animals to migrate north to polar environs (i.e., alligators, tortoises, and lizards may one day return home, after all).⁴⁹

C. *From Pleistocene to Holocene (our own era)*

Beginning with the expansion and thickening of polar ice sheets approximately 2 million years ago, the Pleistocene era (approximately 2 mya to 12 thousand years ago, or 12 kya) and our own Holocene era (12 kya to present day) together comprise the earth’s last great

45. Fred Pearce, *Climate Warning as Siberia Melts*, NEWSIDENTIST, Aug. 11, 2005, <http://www.newscientist.com/article/mg18725124.500>.

46. U.N. Intergovernmental Panel on Climate Change [IPCC], *Impacts, Adaptation, and Vulnerability*, 2007 CLIMATE CHANGE ch. 15, at 662; see also Sarah Simpson, *The Arctic Thaw Could Make Global Warming Worse*, SCI. AM., June 29, 2009, available at <http://www.climateark.org/shared/reader/welcome.aspx?linkid=130363&keybold=permafrost%20AND%20%20carbon%20AND%20%20melt>.

In a complete Arctic thaw, [permafrost at the bottom of Arctic] lakes could discharge a whopping 50 billion tons of methane: 10 times the amount already helping to heat the planet.

Whether a total or more moderate release is in store is still anyone’s guess. But pound for pound, methane in the atmosphere traps 25 times more of the sun’s heat than CO₂ does. Consequently, even a modest thaw of the perennially frozen soil that lies under these ephemeral lakes and caps the dry land around them could trigger a vicious cycle: warming releases methane and creates lakes, which thaw permafrost and liberate more gas, which intensifies warming, which creates more lakes, and so on.

Id.

47. J. Eberle et al., *Lower-Latitude Mammals as Year-Round Residents in Eocene Arctic Forests*, 37 GEOLOGY 499, 499 (2009).

48. *Id.*

49. *Id.* at 502.

glacial epoch, which geologists call the “Quaternary Ice Age.”⁵⁰ Human civilization still inhabits the Quaternary epoch,⁵¹ although if global warming trends continue unabated, this period might be ending on an accelerated schedule. Climate and sea-level fluctuations in Arctic regions since the outset of the Pleistocene era have involved three broad phases: long periods of slowly emerging cycles of glaciation (in which temperatures very slowly became cooler, “taking as much as 90,000 years to change from temperate to extreme cold conditions”); shorter periods of equilibrium and temperate climate (lasting up to 20,000 years); and precisely three periods of extremely rapid global warming involving the abrupt melting and eventual collapse of Arctic marine ice sheets.⁵² Geologists have called these warming moments “terminations,” referring to the end of an equilibrium period.⁵³ The first glacial termination took place approximately 125 kya, the second approximately 14 to 12 kya, and the third during our own miniscule flash of geological time.⁵⁴

III. MOTHERLAND AND BRIDGE

Our story begins approximately 30 kya, in the waning millennia of the late Pleistocene era. I say “our story” because it the narrative of the migration and settlement of modern humans or *Homo sapiens*—our own species (replacing the archaic Neanderthal populations that had colonized warmer latitudes 200 kya).⁵⁵ In this dramatic story, the Arctic (or, more specifically, Siberia’s far northeast) plays two starring, mutually dependent roles: motherland and bridge.⁵⁶ Applying revolutionary methodological advances in genetics, skeletal morphology, population geography, biostatistics, linguistics, archeology, and other fields related to ancient historical

50. 2 THE GEOLOGY OF CENTRAL EUROPE 1304 (Tom McCann ed., 2008). In Greek, *pleistos* means “most” and *kainos* “new,” so the Pleistocene Era is the “most new.” Smithsonian National Museum of Natural History, Pleistocene: Overview, <http://paleobiology.si.edu/geotime/main/pleistocene1.html> (last visited Oct. 4, 2009). *Holos* means “whole” or “entire,” so the Holocene Era is “entirely new.” Smithsonian National Museum of Natural History, Holocene: Overview, <http://paleobiology.si.edu/geotime/main/holocene1.html> (last visited Oct. 4, 2009).

51. WILLIAM J. MILLER, AN INTRODUCTION TO HISTORICAL GEOLOGY: WITH SPECIAL REFERENCES TO NORTH AMERICA 328 (2d ed. 1922).

52. BRIAN M. FAGAN, THE GREAT JOURNEY: THE PEOPLING OF NORTH AMERICA 104 (1987).

53. *Id.* (citing Wallace S. Broecker & Jan van Donk, *Insolation Changes Ice Volumes and the O18 Record in Deep-Sea Cores*, 8 R. GEOPHYSICS 169, 169–98 (1970)).

54. *Id.*

55. *Id.* at 71.

56. Ted Goebel et al., *The Late Pleistocene Dispersal of Modern Humans in the Americas*, 319 SCIENCE 1497, 1497 (2008) (asserting human dispersal to the Americas originated from “a single Siberian population toward the Bering Land Bridge”).

archives (e.g., data samples of excavated skeletons, allele patterns of current indigenous groups, human genome sequences), scientific detectives are beginning to clarify an empirical understanding of the Arctic's role in human migration that had only been imagined in the past.⁵⁷

This history was imagined by explorers and missionaries as what is referred to as the “early modern period” of European expansion.⁵⁸ José de Acosta, the Spanish Jesuit naturalist, spent much of his life as a missionary in Peru.⁵⁹ Following his return to Spain, his *Historia natural y moral de las Indias* was published in 1590.⁶⁰ Reflecting on his experience working with indigenous peoples, he proposed an unusual explanation for the mystery of aboriginal settlement.⁶¹ Where did the South American “Indians” come from? How did they get there? They came from Asia, de Acosta answered—and they walked.⁶² For 140 years, de Acosta's theory was largely ignored until the Danish explorer Vitus Jonassen Bering, while sailing along the Kamchatka coast as an officer in the Russian navy, inadvertently discovered Alaska, the Aleutian Islands, and the strait that bears his name.⁶³ Now, at the outset of the twenty-first century, informed by revolutionary advances in scientific methodologies for studying ancient fossils and breakthroughs in quantitative linguistic analysis of existing indigenous populations, we can test de Acosta's wild theory with richer and more diverse evidence than ever before.⁶⁴

A. Original Siberian Settlers

Northeastern Siberia had been frozen and unfrozen during periods of glacial advance and retreat over thousands of millennia

57. See, e.g., Jody Hey, *On the Number of New World Founders: A Population Genetic Portrait of the Peopling of the Americas*, 3 PLOS BIOLOGY 965, 965 (2005) (discussing the application of a new method to questions on the founding and history of Amerind-speaking Native American populations); Tamm et al., *Beringian Standstill and Spread of Native American Founders*, 5 PLOS BIOLOGY 1, 1 (2007) (using genetic studies in a study of those persons who migrated to the Americas from Siberia). One particularly exciting feature of current interdisciplinary scholarship in human migration is fieldwork conducted by transnational research teams including archeologists, forensic pathologists, human geographers, biological anthropologists, geneticists, linguists and biostatisticians from universities, medical schools and research institutes throughout the world.

58. JOSÉ DE ACOSTA, NATURAL AND MORAL HISTORY OF THE INDIES 63 n.6 (Jane E. Mangan ed., Frances M. López-Morillas trans., Duke Univ. Press 2002) (1590).

59. Walter D. Mignolo, *Introduction to NATURAL AND MORAL HISTORY OF THE INDIES*, *supra* note 58, at xvii–xviii.

60. *Id.* at xvii.

61. *Id.* at xx, xxiii.

62. ACOSTA, *supra* note 58, at 63.

63. David Colterjohn, *In the Beginning*, VANCOUVER SUN, Dec. 11, 2004, at F.19.

64. Hey, *supra* note 57, at 965.

between the Eocene and the late Pleistocene era (roughly the period from 2 million years ago to 10,000 years ago).⁶⁵ Until very recently, scientists believed that Siberia was not inhabited by human beings until the area around the Lake Baikal region was settled by Upper Paleolithic hunters and gatherers around 15–18 kya when, it was believed, the region first became warm enough for human habitation.⁶⁶ These people produced and used sophisticated stone blades, tools, and cultural artifacts, and they hunted reindeer stocks in various directions as they migrated southeast from the Baikal region.⁶⁷

Then, in 1993, Mikhail Dashtzeren, a Russian geologist searching for Ice Age animal bones by the Yana River in the desolate Siberian tundra, discovered an unusually well-preserved object: the horn of a woolly rhinoceros.⁶⁸ This was not simply an animal fragment. Seeking geological and biological specimens, Dashtzeren had unwittingly discovered an artifact of human culture: the Yana horn had been carefully beveled into the foreshaft of a spear.⁶⁹ Eventually, Dashtzeren brought the foreshaft he had stumbled upon to archaeologists who understood the stunning value of the discovery.⁷⁰ From 2001 to 2004, researchers found in the Yana site a treasure of bones, tools, and carved stones confirming that modern humans had originally colonized the Arctic about 30 kya—twice as long ago (previously scientists had dated the first Siberian migration to 15 kya) and during a much colder period than had been previously believed.⁷¹

65. Smithsonian National Museum of Natural History, Pleistocene: Pleistocene Glacial Events, <http://paleobiology.si.edu/geotime/main/htmlVersion/pleistocene3.html> (last visited Oct. 4, 2009); Smithsonian National Museum of Natural History, Eocene: Shifting Continents and Changing Climates, <http://paleobiology.si.edu/geotime/main/htmlVersion/eocene4.html> (last visited Oct. 4, 2009).

66. See V. V. Pitulko et al., *The Yana RHS Site: Humans in the Arctic Before the Last Glacial Maximum*, 303 *SCIENCE* 52, 52 (2004) (noting that researchers believed the environment of East Siberia before 18,000 years ago to be too harsh for human occupation).

67. Jeff Hecht, *Ancient Site Hints at First North American Settlers*, *NEWSIDENTIST*, Jan. 2, 2004, <http://www.newscientist.com/article/dn4526-ancient-site-hints-at-first-north-american-settlers.html>; Brian T. Wygal, *Prehistoric Colonization of Southcentral Alaska: Human Adaptations in a Post Glacial World 7* (May 2009) (unpublished Ph.D. thesis, University of Nevada, Reno) (on file with ProQuest).

68. Pitulko, *supra* note 66, at 52.

69. *Id.*

70. *Id.*

71. *Id.*; Richard Stone, *A Surprising Survival Story in the Siberian Arctic*, 303 *SCIENCE* 33, 33 (2004); Tamm et al., *supra* note 57, at 1.

B. Across to Berengia and Beyond

Radiometric and accelerator mass spectrometry studies of the Yana material, in combination with mitochondrial DNA (mDNA) haplogroup analysis of Native American skeletal fragments, provides confirming evidence that ecological barriers forced the original settlers to remain isolated in the Siberian region for perhaps *another* 15 thousand years. After that long hiatus period, Siberian settlers migrated throughout northeast Asia and northeasterly to the other side of Berengia: the vast, steppe-tundra landmass connecting Siberia to North America that had formed during the Early Wisconsin Glacial (70 to 50 kya) but had previously been inhospitable to human migration.⁷²

The precise dates, routes, waves, and population numbers of modern human settlement in northeast Siberia, and the migrations from Siberia throughout north Asia and the Americas remain subject to intense scholarly debate. Astonishing correspondences and bitter conflicts in scientific research have, in turn, unexpectedly heightened this debate. Scientists from a variety of different fields still debate competing theories about the length of time that the original settlers stayed in the North American side of Berengia before migrating south, the size of the original migrant population(s), whether or not Native American and Western Berengian populations derived from a single founding group, and whether South American colonization proceeded in a single stage or in distinct, multiple stages.⁷³

72. See Tamm et al., *supra* note 57, at 2 (arguing that a swift migration followed the long pause at Beringia). Archeologists have found artifacts similar to the rhino spear and chiseled stone tools and figurines of the Yana site in archeological excavation sites in Inner and Outer Mongolia and Manchuria, the Korean peninsula, and in Jomon sites in Hokkaido, Sakhalin and the Kuriles; and they have found such tools in Kamchatka, the Aleutian Islands and Northwest Alaska. *E.g.*, Toshishiko Kikuchi, *Ainu Ties with Ancient Cultures of Northeast Asia*, in AINU: SPIRIT OF A NORTHERN PEOPLE 47, 48 (William W. Fitzhugh & Chisato O. Dubreuil eds., 1999).

73. See, e.g., Stephanie Bourgeois et al., *X-Chromosome Lineages and the Settlement of the Americas*, AM. J. PHYSICAL ANTHROPOLOGY, May 7, 2009, <http://www3.interscience.wiley.com/journal/122377297/abstract> (noting that while there is consensus that the source of Native American migrations lies somewhere in North Eastern Asia, there is no consensus on the number, timing, or routes of migration); Nelson J.R. Fagundes et al., *Mitochondrial Population Genomics Supports a Single Pre-Clovis Origin with a Coastal Route for the Peopling of the Americas*, 82 AM. J. HUMAN GENETICS 583, 583–90 (2008) (noting that the timing and means of migration to the New World is “hotly debated”); Goebel et al., *supra* note 56, at 1497–1502 (noting that the “peopling of America debate is far from resolved”); Juan Moscoso et al., *HLA Genes of Aleutian Islanders Living Between Alaska (USA) and Kamchatka (Russia) Suggest a Possible Southern Siberian Origin*, 45 MOLECULAR IMMUNOLOGY 1018, 1018–26 (2008) (noting that recent genetic studies have challenged Greenberg’s three-wave model); Walter A. Neves & Mark Hubbe, *Cranial Morphology of Early Americans from Lagoa Santa, Brazil: Implications for the Settlement of the New World*, 102 PNAS 18309, 18309–14 (2005) (hypothesizing that New World colonies derived from two distinct biological populations); Dennis H. O’Rourke, *Human Migrations: The*

Notwithstanding these differences in methodology and result, consensus has emerged among contemporary scientists on the following world historic patterns and events: (1) Modern humans settled northeastern Siberia about 30 kya; (2) for a roughly 4,000-year window beginning approximately 16 kya, the Bering Strait land bridge was sufficiently accessible, dry, and stable to permit migration of Siberian people across to Western Berengia/North America (as they also migrated throughout North East Asia); (3) this window effectively closed around 12 kya when sea level rise from the second glacial termination identified above flooded and eventually submerged the bridge; and (4) these foundational migrations (whether from a single group or multiple waves) led to the peopling of the Aleutian Islands and across Western Berengia (with a possible North American standstill up to 15 thousand years) and the Americas.⁷⁴

Thus, more than 400 years after the publication of José de Acosta's *Historia natural*, twenty-first century scientists prove that he was a visionary. Now we know that all indigenous peoples from Russia to the Canadian far north and throughout the Americas (i.e., all of the nations, tribes and communities that originally settled the northwest coast of Alaska on the Chukchi Sea, across to Nunavut and further east, and south from Florida and Mexico all the way to Tierra

Two Roads Taken, 19 CURRENT BIOLOGY 203, 203–04 (2009) (noting the uncertainty of the timing and composition of migration to the New World); S. Ivan Perez et al., *Discrepancy Between Cranial and DNA Data of Early Americans: Implications for American Peopling*, 4 PLOS ONE 1, 1–10 (2009) (discussing the migratory and local diversification hypotheses); Kari B. Schroeder et al., *Haplotypic Background of a Private Allele at High Frequency in the Americas*, MOLECULAR BIOLOGY AND EVOLUTION 995, 995–1014 (2009) (arguing that modern Native Americans and Western Beringians “trace a large portion of their ancestry to a single founding population”); Tamm et al., *supra* note 57, at 1–5 (indicating that human genome sequencing studies, linguistic tracing of repeat alleles among sampled Native American communities today, and cranial morphology analyses sometimes present different answers). In particular, studies of mtDNA haplotypes, X and Y chromosomal patterns, and private allele frequency suggest a single, consistent migration from a founding Siberian group to the Americas, while morphological studies suggest multiple waves across the Bering Strait. Tamm et al., *supra* note 57, at 1–4.

74. For evidence suggesting human occupation in Northeast Siberia as early as 30 kya, see Pitulko et al., *supra* note 66, at 52, 54; Stone, *supra* note 71, at 33; and Tamm et al., *supra* note 57, at 1. For evidence suggesting a “window” for migration across the Bering Strait, see Goebel et al., *supra* note 56, at 1498 (suggesting colonization from Berengia occurred about 16 kya); and DAVID J. MELTZER, *FIRST PEOPLES IN A NEW WORLD: COLONIZING ICE AGE AMERICA* 34 (2009) (noting that although likely not hospitable, the Bering Strait was certainly navigable for millennia). For evidence of the window's closing due to sea level rise, see MELTZER, *supra* (Bering Strait was passable until flooded by rising post-glacial seas around 11 kya). For sources describing resulting peopling, see JOHN M. MURRIN, *LIBERTY, EQUALITY, POWER: A HISTORY OF THE AMERICAN PEOPLE* 3 (Thompson Wadsworth 2008) (1996) (describing migration waves from Aleutian Islands and Alaska to the Americas).

del Fuego) trace their ancestry to the Siberian Arctic, our American motherland.⁷⁵

IV. ABORIGINAL PEOPLES AND NATIONS

It is important neither to romanticize the communities and lives of Arctic indigenous peoples before or after contact with Europeans nor to idealize their cultural practices and values. Human life in the farthest north has always been dominated by the brutal struggle to survive in desolate, inhospitable climes.⁷⁶ In the initial millennia of life in Western Berengia, people were vulnerable to attack by powerful, hungry mammals (including those enormous woolly mammoths and vicious saber-toothed cats we remember from the Ice Age dioramas and National Geographic pictures, and many other predatory and man-eating creatures we can only imagine).⁷⁷ In turn, human beings, along with freezing temperatures, likely contributed to the mass extinction of prehistoric mammalian species.⁷⁸

The killing and butchering of whales, walruses, seals, polar bears, and wild caribou—inseparable from Arctic indigenous survival—has always been a gory business, and so it remains. Even today, naturalists are disturbed by the harsh treatment, even beating, of underperforming sled dogs.⁷⁹ However, animals were not

75. PBS, Arctic Journeys Travel Guide: History and Culture, <http://www.pbs.org/beringlandbridge/guide/history.html> (last visited Oct. 4, 2009).

76. Kersey, *supra* note 7, at 432 (describing the arctic landscape as “inhospitable” and discussing the Canadian government’s initiative to improve Inuit quality of life).

77. See generally DONNA HART & ROBERT WALS SUSSMAN, *MAN THE HUNTED: PRIMATES, PREDATORS AND HUMAN EVOLUTION* (2005) (citing fossil evidence indicating man was prey to early mammals, including saber-toothed cats).

78. Barry Lopez reflects, “[h]unting wild animals to the point of extinction is a very old story.” LOPEZ, *supra* note 3, at 50. “Aleut hunters, for example, apparently wiped out populations of sea otter in the vicinity of Amchitka Island in the Aleutians 2500 years ago.” *Id.* Similarly, “[w]e lament the passing of the Eskimo curlew, the sea mink, the Labrador duck, Pallas’ cormorant, and Steller’s sea cow.” *Id.* at 52. Note, however, that the most recent “Vital Arctic Graphics” report of the United Nations Environmental Programme (UNEP) cites a different history, at least with respect to the first and last of these species: “[i]n the 1700s, Russian fur traders reached from Asia across to Alaska, leading to the extinction of the Steller sea cow and the near-extinction of the sea otter.” GRID-ARENDAL. *VITAL ARCTIC GRAPHICS: PEOPLE AND GLOBAL HERITAGE ON OUR LAST WILD SHORES* 19 (2005), available at http://www.grida.no/_res/site/file/publications/vitalarcticgraphics.pdf. Ironically, Gruening observes, “[t]he ruthless killing of sea otter and fur seal by the Russians led to the minimization of Alaska’s value in the eyes of the Russians and, among other motives, led to its sale to the United States.” Gruening, *supra* note 13, at 377.

79. See MALAURIE, *supra* note 5, at 185 (“A hunter is bound—very closely bound—to his dogs, but if one of them is hurt and is unable to work, his fate is sealed.”). Malaurie observed an Inuit hunter shoot a dog (one of the hunter’s favorites) after the dog had been found limping. *Id.*

the exclusive target of aggression. In "Law-Ways of the Primitive Eskimo" (1941), the American anthropologist E. Adamson Hoebel published a legal ethnography of Inuit life at the time.⁸⁰ "Anthropologists are unanimous in their admiration of the Eskimos," Hoebel affirmed.⁸¹ "Their culture represents one of man's most ingenious devices for meeting the exigencies of a difficult physical environment."⁸² Yet, in the context of these harsh exigencies, Hoebel notes that the killing of children, invalids, and elderly people, when deemed necessary for communal survival, were accepted as legal forms of homicide.⁸³ Such killings were "responses to the basic principle of Eskimo society that only those may survive who are able (or potentially able) to contribute to the subsistence economy of the community."⁸⁴ Such a system of triage (at least as recently as seventy years ago) is explained by extreme conditions of scarcity, but it is disturbing nevertheless. In this context, notwithstanding the racist elements of Hobbes' vision of aboriginal life, Europeans had reason to imagine the life of native Arctic peoples as nasty, brutish, and short. Moreover, indigenous nations engaged in blood feuds and wars, as discussed below.⁸⁵ As in our own day and civilization, perhaps the most territorial and predatory of all mammals were human beings.

It is also important to refrain from speaking of the Arctic's native "people" as a single group. Rather, since the original crossing of the Bering land bridge, there has always been a large multiplicity of Arctic *peoples*.⁸⁶ With small populations uniquely adapted to highly-differentiated physical environments that compose the many inhabited sub-regions of the circumpolar north, aboriginal peoples of the Arctic include hundreds of separate national and social groups,

80. E. Adamson Hoebel, *Law-Ways of the Primitive Eskimos*, 31 AM. INST. CRIM. L. & CRIMINOLOGY 663, 663-82 (1940-1941).

81. *Id.* at 663.

82. *Id.*

83. *Id.* at 670-72.

84. *Id.* at 670. Hoebel notes that "[s]urplus children are subject to disposal." *Id.* at 670. "This is effected by offering the child for adoption, and if there are no takers, by infanticide." *Id.* at 670-71. Old and sick people were often asked or expected to kill themselves. *Id.* at 671-72. Like many clichés, the image of the noble self-sacrificing old Eskimo, walking in dignity into empty fields of ice, derives from an idealized version of empirical truth. But Hoebel notes that "legal homicide" could come in a variety of forms: "[s]tabbing, hanging, strangulation, blocking up in snow house to freeze and starve, and abandonment in the open are all used by various Eskimos." *Id.* at 671. These were all *acceptable* forms of killing "because the strain upon the community well-being is eased by the act," and because those who died violently were believed to be "transported directly to the best of the Eskimo heavens." *Id.* at 672. Under extreme circumstances, disposal of the dead could be achieved to community benefit; Hoebel notes that starvation-induced cannibalism was a "legally acceptable," albeit regrettable, emergency measure. *Id.*

85. *Id.* at 675.

86. UNEP, *supra* note 78, at 14-19.

each associated with one or more of six major language “families” (Indo-European, Uralic, Altaic, Eskimo-Aleut, and Na-Dene) or one or more additional “isolated” languages (e.g., Ketic and Yukagir).⁸⁷ Each of these peoples maintains its communal history of ancestry, migration, and settlement, as well as its own unique array of economic, political, and cultural practices as they have evolved over time (particularly in response to each group’s history of relations with European-based traders, colonists, and state bureaucrats over the past five hundred years).

Even within a distinct aboriginal group such as the people we used to call “Eskimo” (we now use the indigenous name “Inuit”), one can identify many different sub-groups. For example, the Eskimo–Aleut culture developed roughly eight kya along the 1,300 km chain of Aleutian Islands in the Bering Sea, later branching into separate Unangan (Aleut for “coast” or “seashore”) and Inuit Eskimo nations.⁸⁸ After crossing the Bering land bridge, the Inuit took another 1,200 or more years to reach Labrador.⁸⁹ Hoebel explains that “[t]he practice of lumping the hundred or more local groups into seventeen larger geographical-cultural units is the ethnologist’s handiwork, not the Eskimo’s.”⁹⁰ In turn, the Russian officials classified the Siberian Yakuts as a “nomadic people (with a tendency to settlement)” and the neighboring Tunguses as “a wandering people (with a tendency to

87. *Id.*, at 16. The James Bay Cree of Northern Quebec speak dialects of Montagnais-Naskapi-Cree, even today. Harvey A. Felt, *The Cree of James Bay Quebec*, in ENDANGERED PEOPLES OF THE ARCTIC: STRUGGLES TO SURVIVE AND THRIVE (Milton M.R. Freeman ed., 2000) [hereinafter ENDANGERED PEOPLES]. The Evenkis, dispersed throughout Eurasia, live close to many neighboring nations, including the Evenys, Solons, Negedaletses and Oroks, with whom they are closely related by language and culture, and with the Enneche, with whom they intermarry. DAVID G. ANDERSON, IDENTITY AND ECOLOGY IN ARCTIC SIBERIA 182 (2000); David G. Anderson, *The Evenkis of Central Siberia*, in ENDANGERED PEOPLES, *supra*, at 59–71.

88. Helen D. Corbett & Susanne M. Swibold, *The Aleuts of the Pribilof Islands*, *Alaska*, in ENDANGERED PEOPLES, *supra* note 87, at 1.

89. MELANIE MCGRATH, *THE LONG EXILE: A TALE OF INUIT BETRAYAL AND SURVIVAL IN THE HIGH ARCTIC* 10 (Vintage 2008).

90. Hoebel, *supra* note 80, at 663. Hoebel refers to the following early 20th century Inuit taxonomy: (1) Aleuts (inhabiting multiple islands off the coast of Alaska); (2) Pacific Eskimos (Prince William Sound); (3) Asiatic Eskimos (Capes Dezhnev, Chukotsk, Ulakhapen); (4) Bering Straits Eskimos (Bristol Bay, the lower Kuskokwim, Nunivak Island); (5) Colville Eskimos (Kobuk River); (6) Point Barrow Eskimos (Wainwright Inlet; Cape Smyth; Point Barrow); (7) Mackenzie Eskimos (Hershel Island, Liverpool Bay); (8) Copper Eskimos (Minto Inlet; Prince Albert Sound; Dolphin; Coronation Gulf; Kent Peninsula; Queen Maude Gulf); (9) Netsilik Eskimos (Adelaide Peninsula; Bellot Strait; Pelly Bay); (10) Caribou Eskimos (Baker Lake; Kazan River); (11) Iglulik Eskimos (Repulse Bay; Melville Peninsula; Pond’s Inlet); (12) Southampton Eskimos (Southampton Island); (13) South Baffin Islanders (Cumberland Sound; Frobisher Bay; Hudson Bay); 14. Labrador Eskimos (Atlantic coast; Hudson Strait); (15) Polar Eskimos (Humbolt Glacier; Melville Bay); (16) West Greenlanders (Melville Bay; Cape Farewell); (17) East Greenlanders (Angmagssalik Fjord; Scoresby Sound). *Id.* at 664.

regular nomadism).”⁹¹ Thus, generalizations break down and categorizations confound.

What have the indigenous groups and sub-groups, family-branches, nations, and ethnicities had in common throughout the millennia of their Arctic settlement and across the vast landscapes and varied ecosystems of the polar north? I wish to emphasize two themes: first, how indigenous Arctic peoples understood and defended sovereignty, territoriality, and national borders; and second, how they constructed and maintained sustainable hunting and sea-based economies over thousands of years.

A. *Sovereignty and Territoriality*

A national culture—the way of life of a people, evolved through the centuries—is a contribution to the world of infinite value, for when it has disappeared, nothing can replace it.

Terrence Armstrong, *The Russians in the Arctic*.⁹²

Ethnographer Ernest Burch describes the nineteenth century Iñupiac Eskimo nations in North America as “fiercely independent peoples who conducted external affairs in a very aggressive manner.”⁹³ These external affairs included the conduct of wars against other nations for a variety of reasons: to expand territory; to capture better hunting grounds; to obtain more wives; to control the most lucrative trading channels in the five hundred year history of fur trade with Europeans; and to inflict vengeance on enemies.⁹⁴

When, in the 1990s, Burch asked Iñupiaq elder Robert Nasruk Cleveland to describe Eskimo peoples of Northwest Alaska, Cleveland replied that they were “nations, just like France, Germany, and England are today.”⁹⁵ In the Iñupiaq language, the term is *nunaqatigiich*.⁹⁶ This understanding is perhaps unusually strong in the Alaskan Arctic, as compared, for example, to many Siberian and Scandinavian aboriginal peoples; not all Arctic indigenous peoples

91. ANDERSON, *supra* note 87, at 79.

92. TERRENCE ARMSTRONG, *THE RUSSIANS IN THE ARCTIC: ASPECTS OF SOVIET EXPLORATION AND EXPLOITATION OF THE FAR NORTH 1937–1957*, at 132 (1958) (emphasis added).

93. ERNEST S. BURCH, JR., *ALLIANCE AND CONFLICT: THE WORLD SYSTEM OF THE IÑUPIAQ ESKIMOS* 57 (2006).

94. *Id.* at 57–69.

95. ERNEST S. BURCH, JR., *THE IÑUPIAQ ESKIMO NATIONS OF NORTHWEST ALASKA* 8 (1998).

96. *Id.* There is evidence that the Alaskan arctic peoples maintained an especially strong sense of national (as opposed to tribal) identity compared to aboriginal populations in other Arctic regions. ERNEST S. BURCH, JR., *SOCIAL LIFE IN NORTHWEST ALASKA: THE STRUCTURE OF IÑUPIAQ ESKIMO NATIONS* 127 (2006).

understood communal self-determination in primarily national form.⁹⁷ Nevertheless, throughout the circumpolar north, indigenous groups consistently regarded themselves as sovereign peoples. In one form or another they claimed sovereignty over defined territorial areas, and they exercised that sovereignty domestically (within the boundaries of the jurisdiction) and in external relations (with neighboring groups, often also understood as nations, in peace and war).⁹⁸

As in France, Germany, and England, sovereignty and territorial control were integrated, mutually reinforcing concepts among indigenous Arctic peoples, and no less fiercely-held.⁹⁹ More than just vague concepts, sovereignty and territoriality were clearly defined and strongly defended. In her examination of "Land Tenure and Polity of the Bering Strait Eskimos," anthropologist Dorothy Jean Ray explained that every indigenous nation she studied "was as aware of its boundaries as if fences had been erected."¹⁰⁰

Yet, paradoxically, borders between Arctic indigenous nations were in many ways porous—much more so than the policed, regulated borders of modern states. Notwithstanding clear knowledge of territorial demarcations, Arctic peoples moved back and forth across these boundaries constantly in the normal course of their activities.¹⁰¹ This is because the survival of hunter-gatherer communities required (and still requires) a nomadic, extremely intimate relationship with both the land and the herds of reindeer and caribou that know and respect no political borders.¹⁰²

B. Sustainable Resource Use

Over millennia following the Ice Age mammalian extinctions, all indigenous peoples have maintained, continually updated, and constantly utilized a vast and comprehensive empirical "database" of bioregional information and wisdom gained from deep, sustained

97. Mark Nuttall, *Indigenous Peoples, Self-Determination and the Arctic Environment*, in THE ARCTIC: ENVIRONMENT, PEOPLE, POLICY 377, 379 (Mark Nuttall & Terry V. Callaghan eds., 2000).

98. BURCH, THE INUPIAQ ESKIMO NATIONS OF NORTHWEST ALASKA, *supra* note 95, at 8.

99. *Id.* at 309.

100. *Id.* (citing Dorothy Jean Ray, *Land Tenure and the Polity of the Bering Strait Eskimos*, 6 J. WEST 371 (1967)).

101. *Id.* Entering foreign territories, Inupiaq Eskimos did so with full knowledge of their status and acted appropriately, either as trespassers (moving by stealth, potentially met by force) or guests (traveling openly, warmly greeted, invited to feasts and ceremonies). *Id.* At least in the Northwest Alaskan Arctic sub-region, "many members of most nations regularly used parts of *other* nations' territories, at least some of the time, every year." *Id.*

102. *See id.* at 310 (discussing how size of the range, the land upon which hunter-gatherers hunt, was greater than that of the estate, where they lived).

intimacy with the land and sea (steppe, tundra, forest, ice, snow, water, and cohabitating animals and plants). On the basis of this “traditional knowledge,” the Arctic’s aboriginal peoples have customarily practiced natural resource sustainability: maintaining small populations and subsistence-based societies; preserving animal, marine, and plant populations; replenishing communal traditions closely related to cooperative *potlatch* economies; passing along, from generation to generation, spiritual practices inherited from Siberian shamans nurturing close relationships with the souls of animals and other living beings with whom humans shared physical environments; and preserving *nuannaarpoq* (Inuit), the quality of “taking extravagant pleasure in being alive,”¹⁰³ throughout seasons of abundance and seasons of stark adversity.¹⁰⁴

The aboriginal peoples of the Arctic have always been hunters and gatherers, fishermen, and herders. Amazingly—notwithstanding tremendous social and economic changes brought by centuries of interaction with Europeans, commercial systems, and state bureaucracies—traditional economic, social, and cultural practices have endured. “Within the limits set by a miolithic culture,” Hoebel writes, Eskimos “reveal a remarkable precocity in subsistence techniques.”¹⁰⁵ Necessity is the mother of invention; in the Arctic, the insufficiency of skills or tools means death. Like the Eskimos’ ancient Yana ancestors who ingeniously beveled elegant spears thirty thousand years ago, the indigenous peoples of the Arctic developed tools and expertise in subsistence hunting and fishing in order to survive.

Stated simply in the most recent United Nations Environmental Program (UNEP) Arctic report, “Arctic peoples have developed their lifestyles through co-evolution with their surroundings.”¹⁰⁶ Depending on the physical environment of the territory in which the Arctic peoples live, this “co-evolution” corresponds to the harvesting and maintenance of sustainable reindeer/caribou or sea mammal stocks from generation to generation until the present day.¹⁰⁷

1. Reindeer/Caribou Peoples

Most aboriginal Arctic peoples inhabiting inland environments in Siberia (including the Chukchi, Chuvan, Dolgan, Even, Evenk, Khanti, Komi, Koryak, Nenets, Nganasan, Sakha/Yakut, Tungus and

103. LOPEZ, *supra* note 3, at 202.

104. *See id.* (noting that Eskimos are “resilient, practical and enthusiastic” and “tak[e] extravagant pleasure in being alive” despite being people “who live in a world where swift and fatal violence . . . is inherent in the land”).

105. Hoebel, *supra* note 80, at 663.

106. GRID-ARENDAL, *supra* note 78, at 14.

107. *Id.*

Yukagir) and North America (including the Cree, Dogrib, Gwich'in, Inupiat, Inuit, Inuvialuit, Koyokon Dene, Innu, Metis, Naskapi and Yupilt) traditionally hunted, herded, harvested and lived among wild (and, in some cases, domesticated) reindeer and caribou for hundreds of thousands of years, and many continue to do so today.¹⁰⁸ Small groups of hunters or shepherds followed the reindeer herds across vast distances, traveling on foot, often in silence, eating what they killed along the way. Their focused minds, eyes, and ears surveyed the subtle, minute transformations in animal behavior and migratory routes, the discipline or anxiety of the herds, and the shifting conditions of the physical environment: pastures, steppes, forests, and tundra; frozen and unfrozen lands; patterns of ice, wind, clouds, and sky.¹⁰⁹ In an aboriginal Arctic society, the focus of a hunter "was not killing animals but attending to the myriad relationships he understood bound him into the world he occupied with them."¹¹⁰

This is "indigenous knowledge": sustained intimacy with the land, its flora, and its animal creatures derived from extraordinarily close attention to the physical world, exquisitely fine-tuned perception, and intuitive decision-making based on the lived awareness of hugely complex empirical data and constantly evolving and changing connections, webs, and relationships.¹¹¹ This traditional knowledge (a living *process* of moment by moment sensory-based data-collection by a learned, practiced attunement to the land and all living things that inhabit it) is entirely distinguished from a Western conception of knowledge as *corpus*.¹¹²

108. See PIERS VITEBSKY, *THE REINDEER PEOPLE: LIVING WITH ANIMALS AND SPIRITS IN SIBERIA* 17–40 (2006) (describing the "partnership" between arctic peoples and the reindeer).

109. See *id.* at 17 (noting the number of reindeer bones found in human camps along migration routes); ANDERSON, *supra* note 87, at 60 ("[H]erdsman trusted the instinct of the reindeer to travel together in one group.").

110. LOPEZ, *supra* note 3, at 200.

111. For an excellent discussion of indigenous knowledge sustained by aboriginal Arctic peoples today, see Henry Huntington & Shari Fox et al. eds., *The Changing Arctic: Indigenous Perspectives*, in *ARCTIC CLIMATE IMPACT ASSESSMENT* (Carolyn Simon et al. eds., Cambridge Univ. Press 2005).

112. See Fikret Berkes et al., *Ecological Complexity, Fuzzy Logic, and Holism in Indigenous Knowledge*, 41 *FUTURES* 6, 7–8 (distinguishing between traditional knowledge, "evolving by adaptive processes and handed down through generations by cultural transmission," and the Western concept, which sees knowledge "as the thing known," as opposed to a process). Learned scholars of the European university tradition demonstrated mastery of an officially-recognized discrete, privileged "body of knowledge" affiliated with a proud scholarly tradition often dating to the philosophers, political theorists, and natural scientists of Greek antiquity. *Id.* at 9. Of course, this is an extraordinarily rich tradition, upon which we depend in this day. Still, a *corpus*, at least by implication, is something dead. *Cf. id.* 6–12 (2009) (discussing how indigenous knowledge is able to deal with ecosystems as complex adaptive systems); Fikret Berkes et al., *Exploring the Basic Ecological Unit: Ecosystem-Like Concepts in Traditional Societies*, 1 *ECOSYSTEMS* 409, 409–15 (1998) [hereinafter Berkes, *Exploring the Basic Ecological Unit*] (noting that the "chasm between indigenous knowledge and Western

Take for example the concept of land. The word for “land” in Dene is *ndeh*; in Eastern James Bay Cree, *ashkii*. These indigenous terms convey a very different understanding from European conceptions of a meaning much closer to what current natural scientists refer to as ecosystem—the complex, dynamic physical environment in which human beings, animals, and plants live closely with each other and interact.¹¹³ As Fikret Berkes observes, “[t]he Western James Bay Cree consider that ‘the Indians go with the land’ as part of ‘land’s dressing’ in the sense that the presence of humans makes the land complete.”¹¹⁴ Humans make the land complete because they belong to the land, they are part of the land, and they live on the land with all of the earth’s creatures—including the spirits of animals, natural objects, and human ancestors.¹¹⁵ These are not word games. Rather, they suggest ways of living required for human survival in a world where poor decisions mean freezing or starving to death.

The Siberian Eveny reindeer people, for example, believe that “[a] hunter can kill a wild animal only when it offers itself at the behest of Bayanay.”¹¹⁶ Bayanay is the name of wild nature spirit, appearing in the form of an old man “who is the ‘owner’, ‘keeper’, or ‘master’ (in Russian, *khozyzyn*) of the animals and of the forest in which they live.”¹¹⁷ It is Bayanay “who decides whether to give an animal or withhold it, place it in the hunters path or send it off in another direction.”¹¹⁸ He is temperamental and prone to hurt and anger; his ways are mysterious, and his generosity can never be taken for granted.

At one moment he may favor you, so that you and your family eat well; at another he may desert you, so that you starve. To encourage animals to give themselves, humans must strive to be worthy of Bayanay’s favour by pleasing his creatures. An animal will give itself only to a hunter who treats its body and soul correctly. When it is reincarnated, it will offer itself again to the human who respected it the previous time.¹¹⁹

science has evaporated in recent years” and that “[s]ome areas of science, such as chaos theory, resemble ‘savage thought’”).

113. Berkes et al., *Exploring the Basic Ecological Unit*, *supra* note 113, at 410.

114. *Id.* (citing Preston et al. eds., *Perspectives on Sustainable Development in the Moose River Basin*, in PAPERS OF THE 26TH ALGONQUIAN CONFERENCE 378–93 (D.H. Pentland ed., 1995)).

115. *Id.*

116. VITEBSKY, *supra* note 108, at 262.

117. *Id.*

118. *Id.*

119. *Id.* at 263.

2. Sea Mammal Peoples

Indigenous coastal groups have always fished and hunted for sea mammals.¹²⁰ Among these peoples, the Eskimo/Inuit were among the most skilled and aggressive.¹²¹ Their most valued prey was the majestic bowhead whale (*balaena mysticetus*).¹²² “Found only in Arctic and sub-Arctic waters,” bowheads are renowned for their great size (an average length of 50–60 feet with mouths alone that can be as long as 16 feet, as high as 12 feet, and as wide as 8 feet, and tongues weighing about one ton); the deep tones of their “singing”; and their long natural lives (at a life expectancy well over a hundred years, bowhead whales “may be the longest-lived mammal on Earth”).¹²³ They have only two known predators: killer whales and human beings.¹²⁴ To hunt a bowhead, Inuit whalers traditionally paddled long distances silently in *umiaks* (small boats made from walrus skins or the stitched hides of bearded seals) until they were close enough strike the whale with a harpoon.¹²⁵

The enormous size, weight, and power of each bowhead presented extremely difficult challenges for the small aboriginal communities.¹²⁶ A successful hunt required sustained pursuit, repeated harpooning, and life-threatening danger.¹²⁷ Bowheads in pursuit can dive through openings in the ice, and swim beneath it for long periods, escaping their pursuers and leaving them stranded or stuck in the ice.¹²⁸ With the strength and power to smash back up through ice seven inches thick, bowheads could easily knock an *umiak* out of the water like a toy, leaving its passengers to drown.¹²⁹ Wounded bowheads, harpoons sticking out of their bodies, have thrashed violently in mortal combat with their human assailants.

120. GRID-ARENDAL, *supra* note 78, at 14.

121. RICHARDS, *supra* note 25, at 580.

122. See Michael Vlessides, *Bowhead Hunt, Part II (Inuit Whale Hunting Traditions)*, 118 CAN. GEOGRAPHIC 28, 28 (1998) (noting that bowhead whale hunting traditions are a cornerstone to the Inuit’s effort to rebuild community and a sense of self-worth).

123. American Cetacean Society Fact Sheet: Bowhead Whale, <http://www.acsonline.org/factpack/bowhead.htm> (last visited Oct. 4, 2009).

124. *Id.*; see also RICHARDS, *supra* note 25, at 578 (describing the behaviors and predators of the bowhead whale); Polar Conservation News (PCO), Bowhead Whale, <http://www.polarconservation.org/education/arctic-animals/arcticwhales/cetaceans/bowhead-whale> (last visited Oct. 4 2009) (same).

125. RICHARDS, *supra* note 25, at 583; STREEVER, *supra* note 44, at 154.

126. See RICHARDS, *supra* note 25, at 582 (noting that nearly the entire community’s service was required for a day or more in order to butcher and haul the meat and blubber after a kill and that “only settled, relatively densely populated communities could mobilize the human energy to hunt whales successfully”).

127. *Id.* at 582–84.

128. See STREEVER, *supra* note 44, at 127–28 (describing bowhead tactics for navigating icy waters).

129. See *id.* at 128 (discussing the ability of bowheads to break through ice).

When Inuit harpoonists succeeded in killing the great animal, the whale had to be hauled to the beach, an extraordinary feat in itself. Then came the slaughter, the carving up of the meat and *muktuk* (blubber with skin attached), the extraction and storage of oil, the carrying of heavy loads of blubber, the digging of freezer pits in the permafrost, the packing of valued meat into the pit, and the hauling and delivery of surplus to neighboring peoples for trade.¹³⁰ This complex and enormously labor-intensive process had to be completed with great care and speed in order to collect and preserve as much food as possible, prevent rotting, and avoid waste.¹³¹ To accomplish these goals required the urgent and intensive collaborative effort of all able men and women of the kinship group.¹³²

In sum, the required planning, organization, struggle, and risk involved in bowhead whaling was, for a small Inuit community, as gargantuan as the prize itself. It was a dance of life and death that could not feasibly be repeated often. From an economic perspective, because the native populations were so small and each bowhead so large, the meat and *muktuk* from just one kill could sustain the community for some time.¹³³ Moreover, the limited ability to store meat before it would rot made it excessively wasteful to catch and kill too many whales. For all of these reasons, a successful whaling year would be measured by only a few bowhead kills,¹³⁴ and, thus, “[i]t is doubtful that human predation in the Thule period had more than a slight impact on the stocks of whales in the Arctic.”¹³⁵

After working together to pull in, harvest, and butcher the catch, the community gathered ceremonially to share the meat and honor the animal spirits that sustained their lives.¹³⁶ In 1922, the great French ethnographer Marcel Mauss wrote perhaps the most elegant

130. RICHARDS, *supra* note 25, at 583.

131. See Nancy Shoemaker, *Whale Meat in American History*, 10 ENVTL. HIST. 269, 274–75 (2005) (discussing the need to butcher the meat quickly, so as to avoid rotting).

132. RICHARDS, *supra* note 25, at 583.

133. *Id.* at 582.

134. *Id.* For all whaling peoples along the Chukchi Peninsula, for example, a total of 10–15 harvested bowheads per year; along the Alaskan coast, up to 60 all together; along the Labrador coast, communities took 4 or 5 in a year; for the entire west coast of Greenland, about 10 whales in total. *Id.* (citing Igor Krupnik & Sam Stoker, *Subsistence Whaling*, in *THE BOWHEAD WHALE* (John J. Burns et al. eds., 1993)). Richards reviewed recent archaeological research finding very limited annual kills for each community in the era prior to European contact: including both the Spitsbergen and Bering Sea bowhead whale stocks, “the total estimate for Arctic hunters in the late Thule period [between 1200 and 1600, prior to the introduction of European whalers into shared or adjacent waters] is no more than 120 to 130 animals captured per year.” *Id.*

135. *Id.* at 584.

136. MARCEL MAUSS, *THE GIFT: THE FORM AND REASON FOR EXCHANGE IN ARCHAIC SOCIETIES* 14 (1990).

Western interpretation of the *potlatch* ceremony common to indigenous peoples in the Western Arctic and the Bering Straits (even if Mauss, chair in the "History of Religion and Uncivilized Peoples" at the *Ecole Pratique des Hautes Etudes*, didn't get his facts first-hand, or necessarily straight).¹³⁷ In *The Gift: The Form and Reason for Exchange in Archaic Societies*, Mauss finds in the Eskimo *potlatch* a powerful fusion of economic, community, and spiritual life, in turn producing "an effect not only upon men, who vie with one another in generosity, not only upon the things they pass on to one another or consume at it, not only upon the souls of the dead who are present and take part in it, and whose names have been assumed by men, but even upon nature."¹³⁸ For Mauss, at the heart of the *potlatch* lies the secret of sustainable economies: "that the exchange of gifts produces an abundance of riches."¹³⁹

With shared food came entertainment, laughter, invigoration of social bonds, and renewed connections to the ancestors, animals, and all spirits living and dead. Recognizing the animal sacrifice made for human well-being, the community symbolically initiated its own sacrifice rituals.¹⁴⁰ "The remains of the banqueting sacrifice are cast into the sea or scattered into the winds; they return to their land of origin, taking with them the wild animals killed during the year, who will return the next year."¹⁴¹ In the Tlingit, Haida, and Eskimo *potlatch*, the sacrificial component of the ceremony is intensified by the intervention of masked shaman priest-sorcerers, "possessed by the spirit whose name they bear."¹⁴² For Mauss, the Arctic *potlatch* unites creation and destruction by facilitating exchange—not only between members of the community but also (and more importantly) between living human beings and the spirits of the dead and the gods, "they who are the true owners of the things and possessions of this world."¹⁴³

137. See Michel Panoff, *Marcel Mauss's "The Gift" Revisited*, 5 MAN 60, 60 (1970) (suggesting that the facts did not escape Mauss, they were simply irrelevant to his argument).

138. MAUSS, *supra* note 136, at 14.

139. *Id.*

140. *Id.*

141. *Id.* at 15.

142. *Id.*

143. *Id.* at 16.

V. *TERRA NULLIUS*

The Vikings were first, conquering Iceland and Greenland and claiming each prize as *Ultima Thule*.¹⁴⁴ In 986, Eric the Red escaped Norway, where he was wanted for murder, made his way to Greenland with twenty-five ships full of Norwegian/Icelandic immigrants to establish a Viking settlement of 450 people, and fathered a boy (Leif Ericsson) who continued in the family business.¹⁴⁵ Southwest Greenland became home to thousands of Norse settlers over the course of the next five centuries, when the population was devastated by a soil erosion, malnutrition, and starvation triggered by climate change (a "little" ice age).¹⁴⁶

Still, Eric the Red had launched the first wave of European colonization in the polar north. Many waves followed, each claiming sovereignty and territory under international law principles: the discovery, conquest, and possession of vacant land.¹⁴⁷ Centuries later, new explorers and conquerors, and traders and colonists from Western Europe, Scandinavia, and Russia, as well as from the descendants of British colonists in North America, arrived in Arctic lands.¹⁴⁸

The nature of the Arctic grail—the motivation to embark on great endeavors and sacrifice in desolate places—differed for each group that set out ever northward on polar journeys.¹⁴⁹ Seeking

144. HELGE INGSTAD, *THE VIKING DISCOVERY OF AMERICA 1* (Breakwater Books 2000); Kristen Hastrup, *Icelandic Topography and the Sense of Identity*, in *NORDIC LANDSCAPES* 53, 55 (Michael Jones & Kenneth R. Owling eds., 2008).

145. *THE VOYAGES OF THE NORTHMEN* 45 (Julius E. Olsen ed., Charles Scribner's Sons 1906).

146. BRIAN FAGAN, *THE LITTLE ICE AGE: HOW CLIMATE MADE HISTORY 1300–1850*, at 3–22 (2000).

147. See generally Robert J. Miller, *The Doctrine of Discovery in American Indian Law*, 42 *IDAHO L. REV.* 1 (2005) (discussing the doctrine of discovery, the element of possession, and the principle of *terra nullius*, or vacant land). Archeological evidence suggests that the Vikings, notwithstanding their legendary ruthlessness, had legitimately conquered "vacant land"; i.e., apparently there were no native peoples in the southwestern part of the enormous island at the time of the Norse settlement. Dale MacKenzie Brown, *The Fate of Greenland's Vikings*, *ARCHAEOLOGY*, Feb. 28, 2000, <http://www.archaeology.org/online/features/greenland/>. The Thule people, ancestors of the modern Inuit, came two hundred years after the Vikings arrived and lived in different areas. See Else Østergård, *The Remarkable Clothing of Medieval Norse Greenlanders*, in *ARCTIC CLOTHING* 95, 95 (J.C.H. King et al. eds., 2005) (stating that the Norse Greenlanders and the Thule Eskimos were two different populations that "never mixed"). After the Norse colonists had been wiped out (and their survivors, if any, abandoned Greenland), the Thule People took over the abandoned Viking settlements, and controlled all of Greenland's coastal areas. Samuel M. Wilson, *The Vikings and the Eskimos*, 26 *NAT. HIST.*, Feb. 1992, at 18, 21.

148. See generally LYNN CURLEE, *INTO THE ICE: STORIES OF ARCTIC EXPLORATION* (1998) (covering the various waves of arctic exploration).

149. *Id.*; see also PIERRE BERTON, *THE ARCTIC GRAIL* (1988) (detailing diverse motivations for Arctic exploration).

path-breaking achievement and national glory, explorers sought to extract the Arctic's mysteries and discover its pristine lands and marine passages.¹⁵⁰ For empire and treasure, sovereign kings and parliaments funded Arctic journeys and exploits.¹⁵¹ For state and personal profit, entrepreneurs and traders sought to capture sources of animal and mineral products of tremendous value in imperial coffers and the global trading system.¹⁵²

These varied drives and visions thus coalesced into a mutually-reinforcing, interdependent triumvirate of Arctic expansion: scientific exploration, made possible by state and private investment (i.e., the expansion of geographic, navigational, and biological knowledge); manifest destiny (i.e., the expansion of national sovereignty, territory, jurisdiction, boundaries, and military and bureaucratic control by each of the Arctic Sea's littoral states); and the drive of commercial actors—financiers, commercial entrepreneurs, merchants, traders, industrial manufacturers, and state-sponsored corporations—in early modern European capitalist economies to exploit increasingly integrated global markets (i.e., the “world hunt” to secure high-value natural resource supply for extraction and sale on ever-expanding international markets).¹⁵³

The achievement of each required the achievement of the others. Inexorably, discovery led to conquest; conquest led, eventually, to occupation, thus confirming sovereignty for the sponsoring European state under the international law principle of *terra nullius* (land without inhabitants); and occupation led to the extraction of natural resources for European, colonial, and world markets.¹⁵⁴

150. BERTON, *supra* note 149.

151. JAMES P. DELGADO, *ACROSS THE TOP OF THE WORLD: THE QUEST FOR THE NORTHWEST PASSAGE* 19 (1999).

152. *See generally id.* (discussing the various natural resources sought on arctic explorations).

153. The concept of a “world hunt” for natural resources, emerging in the early sixteenth century and continuing to our own era, comes from John F. Richards' invaluable *UNENDING FRONTIER*, *supra* note 25, at 4. The application of this international hunt in Arctic regions follows Richards' rigorous analysis of a much larger global process in early modern world history, a process in which European commercial actors (investors, hunters, traders, shippers and merchants), often with state-sponsorship and funding, “voraciously and systematically located, extracted, processed, packaged, shipped, priced, sold, and consumed wild animals in ever greater quantities over ever greater distances” and increasingly remote areas across the globe. *Id.* at 9.

154. STUART BANNER, *POSSESSING THE PACIFIC: LAND, SETTLERS, AND INDIGENOUS PEOPLE FROM AUSTRALIA TO ALASKA* 2 (2007). In the case of the Northern seas, the extraction of natural resources proceeded on an expedited path, as the companion principle of *mare nullius* required no occupation or settlement. *See* Monica Mulrennan & Colin Scott, *Mare Nullius: Indigenous Rights in Saltwater Environments*, 31 *DEV. & CHANGE* 681, 693–702 (2002) (examining the quandary this framework creates for marine hunters and fishers using the case of Quebec Crees and Inuit to illustrate).

Terra nullius blessed this triumvirate with legal claims to title and resource control by expanding Russian, European, and North American nation states—sovereignty over territory for land without a sovereign.¹⁵⁵ The fact that northern lands were inhabited by indigenous nations for thousands of years had no legal or political consequence in this system. The treatment of Arctic aboriginal peoples differed radically in each geographical and colonial context.¹⁵⁶ In some cases, they were subject to military defeat and massacre; in other cases, they were economic partners in trade (although rarely, if ever, on an equal basis).¹⁵⁷ But in no case was an indigenous *national* claim to self-determination and sovereign territory acknowledged or respected. “From the sixteenth century onward,” writes legal historian Stuart Banner, “indigenous people had never been understood to possess the power to withstand a claim of sovereignty by Europeans or their descendants.”¹⁵⁸

As a result, the political ecology of all Arctic regions changed radically. These changes opened up new economic opportunities for indigenous peoples exposed, for the first time, to international markets for Arctic resources and products.¹⁵⁹ Tragically, however, in the great majority of cases these changes accrued to the immense detriment of aboriginal nations and peoples and to the biodiversity of the lands and seas that had provided sustenance to them, and kept them alive, for countless generations.¹⁶⁰

A. Consult Any Atlas

You will find the names of brave Arctic explorers and adventurers inscribed on lands and seas they discovered.¹⁶¹ Take the Barents Region and Barents Strait, for example, named for William Barentsz, who sailed for Holland on multiple journeys between 1594 and 1596.¹⁶² The 1872 Austro-Hungarian North Pole expedition led to the naming of Franz Josef Land, a small archipelago (later acquired by Russia) near the Nansen Basin and Nansen Cordillera—each in turn named for the Norwegian geographer, adventurer, and

155. BANNER, *supra* note 154, at 2.

156. *Id.* at 315–20.

157. *See id.* at 195–230, 287–314 (noting disparate treatment of Arctic aboriginal people across geographical regions).

158. *Id.* at 298.

159. MARK NUTTALL, *PROTECTING THE ARCTIC: INDIGENOUS PEOPLES AND CULTURAL SURVIVAL 1* (Routledge 2002).

160. *Id.*

161. This section derives from consultation of Arctic Sea maps in two well-known British atlases: the OXFORD ATLAS OF THE WORLD 6 (1992) and THE TIMES CONCISE ATLAS OF THE WORLD 268 (Times Books 2005) (1967).

162. JOHN JOSEPH SHILLINGLAW, *A NARRATIVE OF ARCTIC DISCOVERY, FROM THE EARLIEST PERIOD TO THE PRESENT TIME 70–74* (2d ed. 1851).

diplomat Fridtjof Nansen, who nearly reached the North Pole on sled in 1893 (five years earlier Nansen been the first to cross the Greenland ice sheet on skis).¹⁶³ Inspired by Nansen, fellow Norwegian Roald Amundsen led the first successful navigation of the Northwest Passage between the Atlantic and Pacific Oceans in 1903; the Amundsen Gulf in the Arctic Sea bears his name.¹⁶⁴

The Canadian North is home to Frobisher Bay, named for Martin Frobisher (arriving there in 1578, he took an Inuk hostage, bringing him to London as a curiosity for the Queen's edification)¹⁶⁵; Davis Strait, named for John Davis (sailing 1585-1587); Baffin Bay and Baffin Island, named for William Baffin (exploring the region from 1612-1616); the Beaufort Sea, Beaufort Island, and Beaufort Inlet, named in honor of Francis Beaufort, head of the Hydrographic Office of the British Navy (1829-1854); and M'Clintock Channel and MacKlintock Island for Francis McClintock, who searched relentlessly for the lost John Franklin and his crew (1848 to 1859). In fact, each of these British (or Commonwealth) explorers also claimed territories on behalf of Her Majesty the Queen of England (or His Majesty the King, depending on the dates and reign).¹⁶⁶ In 1829, the Scottish explorer John Ross discovered a peninsula in what is now Nunavut, Canada; he named it the Boothia Felix, in honor of Felix Booth, the financier who had paid for his trip.¹⁶⁷ The Irish explorer Sir Robert John Le Mesurier McClure spent years in the Canadian Arctic (1838-1854) under British command; today, the McClure Strait bears his name.¹⁶⁸ The great English navigator Henry Hudson discovered Hudson Bay and Hudson Strait in 1610 in his search for a Northwest Passage to Cathay (among many other voyages, including exploration of New Amsterdam's Hudson River).¹⁶⁹

163. MILLER GRAF, *ARCTIC JOURNEYS: A HISTORY OF EXPLORATION OF THE NORTHWEST PASSAGE* 227, 256 (1992).

164. *Id.* at 356. Note also the Amundsen Sea, Amundsen Glacier, Amundsen Bay, and Mount Amundsen, all in Antarctica, named in honor of his exploration of the South Pole. The Pedia, Summary of Roald Amundsen, http://www.thepedia.com/define/Roald_Amundsen (last visited Oct. 4, 2009).

165. BONE, *supra* note 6, at 51.

166. See 1 WILLIAM J. MILLS, *EXPLORING POLAR FRONTIERS: A HISTORICAL ENCYCLOPEDIA* 54-55, 71, 173-76, 414-16 (2003) (entries for "Davis, John, Ca. 1550-1605," "Baffin, William," "Beaufort Sea," and "McClintock, Leopold").

167. *Id.* at 91 (entry for "Boothia Peninsula (Canada)"). It is now called, more simply, the Boothia Peninsula. *Id.*

168. *Id.* at 417-21 (entries for "McClure, Robert" and "McClure Strait").

169. *Id.* at 309-15 (entries for "Hudson Bay (Canada)," "Hudson, Henry," and "Hudson Strait (Canada)"). Hudson sailed on behalf of imperial and commercial enterprises sponsored by Britain, Holland, and even Russia (including the British East India Company, the Dutch East India Company, and the London-based Muscovy Company). *Id.* at 309-15, 475 tbl. 18. In Hudson's cosmopolitan tradition, the modern Icelandic-Canadian-U.S.-educated explorer Vilhjálmur Stefánsson (1879-1962) lived with Eskimos of the Mackenzie Delta (named for Scottish-Canadian explorer Sir Alexander Mackenzie, *id.* at 389-90 (entry for "Mackenzie, Alexander")), tried to claim

Among Russian explorers, the Laptev Sea is named for Dmitry Laptev and his cousin Khariton Laptev, members of Russia's Baltic Fleet, who mapped the Kamchatka and Siberian coasts from 1739-1742.¹⁷⁰ The Anjou Islands and Wrangel Island, each off the coast of Siberia, are named respectively for Pyotr Fyodorovich Anjou and Ferdinand Petrovich Wrangel, who mapped them in the 1820s.¹⁷¹ In 1948, having discovered an underwater ridge in the middle of the Arctic Sea, the Soviets reached back in Russian history to name it after the eighteenth century scientist Mikhail Lomonosov (who in 1764 had organized an expedition to find the fabled Northeast Passage across the polar seas).¹⁷² And we honor poor Vitus Bering, who, after years of struggle on the Kamchatka coast, died of scurvy while "listening to the screams and moans of his dying men" on the island that would later (like the strait, sea, glacier, and land bridge) bear his name.¹⁷³

Consult any atlas and one will find the names of the great, courageous European explorers of Arctic lands and seas. These men undertook momentous journeys on behalf of nation, king, or queen, and triumphed over adversity or died miserably in a failed effort to escape a frozen prison of polar ice. However, even in the most detailed maps of the circumpolar North, it will be difficult to find the names of any man or woman born in a Arctic or Sub-arctic

Wrangel Island for Canada (when he failed, he tried to claim the island for Britain, also unsuccessfully), joined the U.S. Army's Cold Regions Research and Engineering Laboratory in New Hampshire, and advocated in support of the Soviet Union's proposed Jewish socialist republic in Siberia. Vilhjálmur Stefánsson, <http://www.absoluteastronomy.com/> (search for "Vilhjálmur") (last visited Oct. 4, 2009).

170. Dmitry Laptev, <http://www.nationmaster.com/encyclopedia/Dmitry-Laptev> (last visited Oct. 4, 2009).

171. Anzhu Islands, <http://www.absoluteastronomy.com/> (search for "Anzhu") (last visited Oct. 4, 2009); Ferdinand Petrovich Wrangel, <http://www.britannica.com/EBchecked/topic/649357/Ferdinand-Petrovich-Wrangel> (last visited Oct. 4, 2009).

172. Mikhail Lomonosov, <http://www.absoluteastronomy.com/> (search for "Lomonosov") (last visited Oct. 4, 2009).

173. STREEVER, *supra* note 44, at 5. We remember the explorers who returned in triumph to London, Amsterdam, Moscow, Oslo, and other European capitals, as we should. But, we should also remember those who died along the way, suddenly (by falling into crevices and ice pits, or drowning in turbulent seas), or slowly (by starvation, frostbite, gangrene, hypothermia, scurvy, exposure, or dehydration). Cf. 1 ADOLPHUS WASHINGTON GREELY, *THREE YEARS OF ARCTIC SERVICE: AN ACCOUNT OF THE LADY FRANKLIN BAY EXPEDITION OF 1881-84 AND THE ATTAINMENT OF THE FARTHEST NORTH*, at vii (New York, Charles Scribner's Sons 1886) ("[R]emembering always that I speak of the dead, and being able in comfort and plenty to judge more leniently than when slowly perishing from cold, disease, and starvation."). We should especially honor the explorers and crew members who suffered terribly and died anonymously without any island or bay named after them, such as the dead sailor discovered by Horace Greely frozen solid in the Arctic ice, and his frostbitten colleague, still alive, "but without hands or feet, and with a spoon tied to the stump of his right arm." MALAURIE, *supra* note 5, at 366 (citing 2 GREELY, *supra*, at 329); STREEVER, *supra* note 44, at 21.

community, who grew up there and had made their home there throughout their lives.¹⁷⁴ To the victors go the spoils—and the histories and the maps. Consult any atlas, and one will find the names of no Evenky, Sami, or Khanti shamans; no Komi or Dolgan reindeer people; no Inuit or Aleut fishermen; no Tlingit, Athabaskan, Dene, Dogrib or Gwich'in chiefs; nor a remembered hero of any other indigenous nation.¹⁷⁵

B. *The Global Fur Trade*

Since the early Middle Ages, writes John F. Richards, “temperate-zone Christian, Islamic, and Confucian worlds have demanded high-quality furs.”¹⁷⁶ To meet this demand, Russian state and commercial interests required access to large numbers of furbearing animals from which sufficiently thick pelts could be processed, sold on international markets, and transported to foreign purchasers in cold climates for whom furs provided highly-valued comfort, status, and prestige.¹⁷⁷ Through economic domination of Mongol and Tatar khanates since the mid-fourteenth century, Moscow effectively controlled the Siberian fur trade, thereby enabling Russian access to the best, softest pelts.¹⁷⁸ However, by the late sixteenth-century, foreign demand for furs exceeded Russian-controlled supply.¹⁷⁹ To secure high quality product in far greater quantity, and to extend the power of the nascent Russian state apparatus, the Kremlin sponsored infiltrations and military invasions of Sibir and other Tatar-controlled Siberian khanates, campaigns that resulted in Tatar defeats and Russian annexation under the authority of the Tsar.¹⁸⁰ By 1620, Russia had seized all of Western Siberia. Over subsequent decades, Cossack expeditions and invasions led to the Tsar’s further conquest of Central and Eastern Siberia as well.¹⁸¹

174. One finds the same cartographic substitution in conquered territories throughout the world. See, e.g., MERON BENVENISTI, SACRED LANDSCAPE: THE BURIED HISTORY OF THE HOLY LAND SINCE 1948, at 14 (2000) (concerning the production of post-1948 maps of Israel with Hebrew in the place of Arabic names); BRIAN FRIEL, TRANSLATIONS (Samuel French 1981) (concerning the 1833 production of maps of Ireland with English in the place of Gaelic names).

175. One exception is the tiny island of Oodaaq, discovered in the ice above Kaffeklubben, Greenland in 1978, named for the Eskimo advisor to Peary in his 1909 North Pole journey. LOPEZ, *supra* note 3, at 282–83. Also note the use of Inuit names in Greenland and Nunavut following recent achievements in self-determination. See *infra* notes 487–88 and accompanying text.

176. RICHARDS, *supra* note 25, at 517.

177. *Id.*

178. *Id.*

179. *Id.* at 519.

180. *Id.* at 519, 523.

181. *Id.* at 517.

Throughout this process, aboriginal nations responded to Russian invaders with whatever force they could muster.¹⁸² However, “[t]he killing power of Russian muskets and cannon was far superior to any weapons the Siberian natives employed.”¹⁸³ Russian forces seized the animal herds of the several nations they conquered, including the Tungus (Evens) and Yakuts of Central Siberia, the latter of whom “maintained large herds of horses and cattle” on communal grazing lands; the “reindeer Yukagirs,” who migrated with the wild reindeer herds, and the “settled Yukagirs” who lived in cabins, fished and hunted elk; and many other nations.¹⁸⁴

Having wiped out indigenous resistance, the Russians demanded the “ritual submission” of each member of each subdued nation: the swearing of allegiance to the Tsar, and, most importantly, the delivery of “a specified number of furs and pelts in payment of the *iasak*, an annual tax.”¹⁸⁵ Regular enforcement and collection of the *iasak*, applied to native populations only (Russian settlers were exempt), was carried out ruthlessly by newly installed military governors.¹⁸⁶ To ensure payment of tribute obligations, Russian governing officials took hostage of one or two leading men from each native community and kept them captive under military guard.¹⁸⁷ Failure to deliver the required number and quality of furs could lead to the abuse or execution of the hostages.¹⁸⁸

The initial *iasak* obligation was ten to twelve sable pelts per man per year.¹⁸⁹ To meet this requirement, subsistence harvesting practices had to be abandoned and migration patterns altered, especially as indigenous hunters suddenly had to compete with Russian commercial trappers who now occupied their lands and seized their animals.¹⁹⁰ Massive over-hunting led to rapid declines in sable populations, forcing Tsarist authorities to reduce the annual *iasak* requirement to five and then to three pelts per man.¹⁹¹ But military governors exacted further payment of furs as bribes, gifts, and favors.¹⁹² Indigenous men who failed to comply could find their wives and children taken as slaves, or all of their tools and

182. See, e.g., *id.* at 523, 527 (describing the juxtaposed weaponry of the Russians and aboriginal fighters and the bloody results of any attempt at resistance to the Tsar’s forces).

183. *Id.* at 523.

184. *Id.* at 526–27, 529.

185. *Id.* at 523–24.

186. *Id.* at 531.

187. *Id.*

188. *Id.*

189. *Id.*

190. *Id.* at 534–35.

191. *Id.* at 531.

192. *Id.* at 540.

possessions seized. In some cases, the men themselves might be seized, imprisoned, and tortured in the military barracks.¹⁹³

With the diminishing supply from over-hunting, the Chinese market in particular offered higher and higher prices for fine Siberian furs.¹⁹⁴ In turn, Russian authorities squeezed the economy of coerced indigenous taxation and excessive competitive commercial trapping to the breaking point.¹⁹⁵ “By the 1690s,” Richards observes, “sables had vanished as far east as the vicinity of Yakutsk on the Lena River.”¹⁹⁶ Having driven the Siberian sable population to extinction, Russian traders shifted the fur trade toward the production of pelts from other species of Siberian animals, including bears, wolves, wolverines, foxes, bobcats, cats, minks, weasels, and ermines (the latter a new favorite in the post-sable Chinese market), further distorting, if not destroying, traditional subsistence economies of Siberian indigenous peoples.¹⁹⁷

As in Siberia, the subsequent conquest and colonization of the Canadian Arctic was largely fueled and directed by the profitability of the international fur trade and the need to acquire secure sources of high-quality animal product.¹⁹⁸ French and English explorers and hunters competed for the best trading posts, bringing them into contact and into commercial relationships with indigenous nations.¹⁹⁹ The Hudson’s Bay Company (incorporated in 1670 by a British Royal charter granting a monopoly over the entire Arctic Canadian fur trade for “the Governor and Company of Adventurers of England trading into Hudson Bay”²⁰⁰) dominated the trade for three centuries and remains in operation today.²⁰¹ French traders later established the competing North West Company in Montreal, and indigenous peoples worked with both companies, selling furs for later distribution to international markets, primarily to meet the growing demands for furs in European fashion.²⁰²

In Siberia, indigenous Arctic nations had been victims of military conquest, naked brutality, and economic extortion at the hands of

193. *Id.*

194. *Id.* at 537.

195. *See id.* at 536 (“It was this steady practice of hunting out all available areas behind the moving frontier that bolstered the total annual catch and helped exhaust the fur-bearing stocks in Siberia.”).

196. *Id.*

197. *Id.* at 544–45.

198. *See BONE, supra* note 6, at 51–56 (describing the establishment of the Hudson Bay Company in order to develop a consistently, and highly, profitable fur trade with natives).

199. *Id.* at 51.

200. Hudson’s Bay Company, Our History, <http://www.hbc.com/en/history.html> (last visited Oct. 4, 2009).

201. BONE, *supra* note 6, at 51.

202. *Id.* at 51, 56.

Russian Cossacks and military officers.²⁰³ In contrast, aboriginal peoples of Northwest Canada were often incorporated into English and French trading systems, valued for their geographical knowledge, and compensated for the animals and furs they provided.²⁰⁴ But the economic relationship between Europeans and aboriginals was never equal; native peoples were frequently subject to exploitation. On an expedition to northern Alaska in 1879, John Muir spoke to an old Chilcat shaman.²⁰⁵ "All the white men I have heretofore met wanted to get something from us," he told Muir.²⁰⁶ "They wanted furs and they wished to pay for them as small a price as possible. They all seemed to be seeking their own good—not our good."²⁰⁷ On a follow-up expedition that Muir took the following year, an encounter with two families of Hoonah Indians provides an illustrative accounting of the Chilcat's lament:

They had exchanged five sea-otter furs, worth about a hundred dollars apiece, and a considerable number of fur-seal, land-otter, marten, beaver, and other furs and skins, some \$800 worth, for a new canoe valued at eighty dollars, some flour, tobacco, blankets, and a few barrels of molasses for the manufacture of whiskey. The blankets were not to wear, but to keep as money, for the almighty dollar of these tribes is a Hudson's Bay blanket.²⁰⁸

With much less cruelty than in Siberia, but with no less effect, the traditional subsistence economies of Northwest Canadian and Alaskan native peoples were undermined by exploitative trade relationships, over-hunting generated by intensified market demands for new sources of fur supply, and growing social dependency on cash-based purchases of processed goods.²⁰⁹

Of these goods, the most destructive were guns and alcohol. To obtain money for pelts and furs, native peoples could use purchased guns to hugely increase the number of animals killed.²¹⁰ Writing about Muir's travels to the Alaskan and Canadian Arctic, Donald Worster highlights Muir's dismay at witnessing the rapid decimation of animal populations that had been sources of food since time immemorial.²¹¹ In his 1879 trip to St. Lawrence Island, for example, Muir had been particularly impressed with the dignified self-reliance of native Inupiat.²¹² "Dressed in their roomy furs, tied at the waist,

203. RICHARDS, *supra* note 25, at 530–32.

204. BONE, *supra* note 6, at 51–54.

205. JOHN MUIR, *TRAVELS IN ALASKA* 172 (Mariner Books 1998) (1917).

206. *Id.*

207. *Id.*

208. *Id.* at 210.

209. DONALD WORSTER, *A PASSION FOR NATURE: THE LIFE OF JOHN MUIR* 267–68, 273 (2008).

210. *Id.* at 268.

211. *Id.* at 273.

212. *Id.* at 265.

they seem better-dressed than any other Indians I have seen.”²¹³ Moreover, they “are better behaved than white men, not half so greedy, shameless, or dishonest. . . . There was a response in their eyes which made you feel that they are your very brothers.”²¹⁴ But Muir witnessed traders illegally selling guns to Inupiat off Alaska’s Kotzebue Sound, trading repeating rifles for furs, ivory, and whalebone.²¹⁵ With guns, Worster notes, the Inupiat “could satisfy their seemingly insatiable hunger for trade goods,” enabling them to kill large numbers of reindeer and caribou for hides, which they could sell to traders, rather than keeping the valuable furs for their own clothing and harvesting meat for their own community subsistence, as they had always done before.²¹⁶

“Suddenly an age-old relationship between native societies and the animals that supported them had been disrupted,” Worster observes.²¹⁷ “A stable balance between predator and prey had begun to fall apart.”²¹⁸ Guns transformed the shared, sustainable commons into a tragic arena of competition between tribes, eager to collect the most pelts for trade who could now kill far more animals more quickly than had ever been possible using traditional hunting methods.²¹⁹ “The reindeer has in this manner been well-nigh exterminated within the last few years,” Muir laments.²²⁰ Meanwhile, Muir observed the captain and crew of his own ship shooting walruses for their tusks, or just for target practice, and leaving the carcasses to rot, thus depleting another traditional source of furs and meat for indigenous tribes.²²¹

Among the greatest tragedies was the growing dependency of native peoples on liquor provided to them by foreign traders in exchange for valuable furs. The sudden influx of alcohol into indigenous communities launched cycles of addiction and self-destruction devastating traditional cultures and self-reliant family

213. *Id.* (citing 7 JOHN MUIR, THE WRITINGS OF JOHN MUIR 27–31 (William Frank Badè ed., Houghton Mifflin 1917)) (internal quotation marks omitted).

214. *Id.* at 274 (citing 7 MUIR, THE WRITINGS OF JOHN MUIR, *supra* note 213, at 76–77) (internal quotation marks omitted).

215. *Id.* at 268.

216. *Id.* at 248, 264–65, 268.

217. *Id.* at 273.

218. *Id.*

219. *Id.* at 268.

220. *Id.* (citing 7 MUIR, THE WRITINGS OF JOHN MUIR, *supra* note 213, at 133–34, 139) (internal quotation marks omitted).

221. *Id.* at 268. Russian hunters had previously targeted sea otters off the coast of Siberia and the Aleutians. RICHARDS, *supra* note 25, at 543. With a full boatload of furs returning between ten and thirty thousand rubles (a profit equal to twice the cost of the expedition), the second half of the eighteenth century brought in harvests of 186,754 pelts. *Id.* at 543–44. Sea otter populations were decimated, and the species disappeared from the region’s seas. *Id.* at 544.

life.²²² Muir describes the harrowing sounds coming from a village of Alaskan Hootsenoo Indians a half-mile away, "a storm of strange howls, yells, and screams rising from a base of gasping, bellowing grunts and groans."²²³ Muir, terrified, asked his native interpreter what torments had caused the "demoniac howling." It was only the "whiskey howl," his guide explained "and pushed quietly on."²²⁴

C. *The International Whaling Industry*

And God blessed them: and God said unto them, Be fruitful, and multiply, and replenish the earth, and subdue it; and have dominion over the fish of the sea, and over the fowl of the air, and over every living thing that moveth upon the earth.

Genesis 1:28.²²⁵

Seizing Siberian and Canadian Arctic territories to capture fur-bearing animals, Russian and European soldiers, hunters, and traders acted under the umbrella of state sovereignty claims that, in turn, rested on the customary international law doctrine of *terra nullius*.²²⁶ In the case of the Northern seas, the extraction of natural resources proceeded even more aggressively, as the companion principle of *mare nullius* included no requirement of occupation or settlement.²²⁷ In *Mare Liberum* (1609), the Dutch legal scholar Hugo Grotius argued that the sea, like air, is "so limitless that it cannot become a possession of any one," and that her inexhaustible fish stocks and other resources can never be depleted.²²⁸ At the turn of

222. See WORSTER, *supra* note 209, at 248, 265 (noting the abusive and violent behavior of Alaskan natives after drinking and stating that Muir "condemned the ubiquitous supply of alcohol").

223. MUIR, *supra* note 213, at 131–32.

224. *Id.* at 132.

225. Genesis 1:28 (King James).

226. See Miller, *supra* note 147, at 45, 46 n. 275, 69 (describing the race between England, Spain, Russia, and the U.S. to rely on the Doctrine of Discovery in order to gain control over the lucrative fur trade posts of the Pacific Northwest and noting that in a letter to Russia, John Quincy Adams disputed the argument that ownership required permanent occupation by arguing the principle of *terra nullius*). In this case, *terra nullius* stood for the proposition that lands that "were not possessed by any person or nation, or [that] were occupied and possessed by non-Europeans but [were] not being used in a fashion that European legal systems approved, were considered to be waste or vacant." *Id.* at 15. Powerful nations could thus rely on two factors: "first, the land was available if other European countries were not in actual possession, and, second, the land was available even if it was occupied and in use by natives because it was considered legally 'vacant' . . . and open to appropriation by Europeans." *Id.*

227. Monica E. Mulrennan & Colin H. Scott, *Mare Nullius: Indigenous Rights in Saltwater Environments*, 31 DEV. & CHANGE 681, 681–82, 693–94 (2000).

228. HUGO GROTIUS, *THE FREEDOM OF THE SEAS OR THE RIGHT WHICH BELONGS TO THE DUTCH TO TAKE PART IN THE EAST INDIA TRADE* 28, 58 (James Brown Scott ed., Ralph Van Deman Magoffin trans., Oxford Univ. Press 1916) (1608); see also RICHARD TUCK, *THE RIGHTS OF WAR AND PEACE: POLITICAL THOUGHT AND THE INTERNATIONAL ORDER FROM GROTIUS TO KANT* 90–91 (1999) (arguing that exercising naval jurisdiction

the seventeenth century, when these words were written, no scientist would have disagreed; in Arctic waters, in the centuries that followed, Europeans acted accordingly.²²⁹

As described above, indigenous peoples living on Arctic coasts had engaged in subsistence hunting of bowhead whales for thousands of years. In the early sixteenth century, French Basque vessels discovered whaling grounds in the Strait of Belle Isle between Labrador and Newfoundland, launching a new era of large-scale, European-based commercial whaling in open Arctic and sub-Arctic seas.²³⁰ Whales were killed for blubber and bone, but by far the most important driver of aggressive Arctic whaling in the seventeenth and eighteenth centuries was the extraction of whale oil and fat for energy markets and industrial production throughout Western Europe (and, later and to a lesser extent, North America, Scandinavia, and Russia).²³¹ Consumers (and subsequently municipal public utilities) throughout Europe used whale oil as a fuel for lamps, and manufacturers used it to make soap and candles, cure leather, or lubricate machinery in factories.²³²

Identifying primary and secondary sources recording key commercial accounting data (financing requirements, insurance costs, numbers of Arctic voyages, aggregate and per-vessel whale kills, and processed catch value) across time periods, national industries, and sub-regional Arctic hunting grounds, Richards provides a detailed country-by-country accounting of European industrial whaling in Arctic waters from the sixteenth through the nineteenth centuries.²³³ Venture capital, state sponsorship, and other sources of project finance were determined on the basis of expected average profit margins, which in turn was calculated according to variations on the following formula: revenues (i.e., number of sponsored expeditions times expected per-boatload whale kills and expected quantity of blubber, oil, and bone per whale at then-current market prices for these extracted and processed commodities) minus expenditures (i.e., ex ante capital investments plus lost ships plus additional expected ex post travel, delivery, and processing costs).²³⁴ The aggressive reach and successful output of the European whale oil industry—the evolving migration of whale hunting to new Arctic sub-regions

must stem from contractual agreements between free peoples who enjoy equal rights to the use of the seas).

229. See RICHARDS, *supra* note 25, at 548 (“Even after three centuries of intense fishing, the great stocks of codfish seemed inexhaustible to the humans who preyed on them.”).

230. *Id.* at 585–86.

231. *Id.* at 575, 592, 694, 610.

232. *Id.*

233. *Id.* at 584–616.

234. *Id.* at 611–12. For examples of government subsidies utilized to entice British mariners to pursue whaling in the Arctic, see *id.* at 605–06.

following the depletion of over-exploited hunting grounds and the final extinction of Arctic bowhead stocks—resulted inexorably from the high average return on whaling investment over three centuries.²³⁵

The Basques were pioneers, the first Europeans to hunt and slaughter whales commercially in Arctic seas.²³⁶ They flensed each carcass in the closest harbor, then cooled, skimmed, strained, and poured the oil into wooden barrels.²³⁷ Returning to French and Spanish Basque Country, they sold these barrels to local wholesalers who in turn sold whale oil to retail apothecaries or textile and soap factories.²³⁸ Eventually British whalers sought to break the Basque whaling monopoly in northern seas. In 1613, the Muscovy company commissioned seven English ships (each sub-contracted with expert Basque harpoonists) to hunt whales off Spitsbergen, accompanied by the *Tiger*, a 260-ton English flagship armed with twenty-one cannons.²³⁹ The *Tiger's* admiral and crew succeeded in intercepting and boarding seventeen competing ships, and expelling their Basque, French, and Dutch whalers from the area.²⁴⁰

Unhappy and angered to learn of the *Tiger's* exploits, Dutch whaling investors formed the *Noordsche Compagnie* (North Company) as a corporate vehicle to fund a forceful counterpunch and to manage a monopoly on Arctic whale hunting they obtained from the Dutch States General. Returning to the Spitsbergen whaling grounds with eleven armed whaling vessels accompanied by three Dutch warships, the new chartered trading corporation harvested the Greenland bowhead stocks, succeeding in bringing in large catches and pushing the British whalers off to western bays. But the *Noordsche Compagnie* also found itself embroiled in extensive disputes with English, Danish, and even other Dutch claimants.²⁴¹ Avoiding a European whaling war, the standoff eventually resulted in a truce between Holland and the British and Danish monarchies and a commercial free-for-all in shared Arctic waters under the doctrine of

235. *Id.* at 610–11.

236. *Id.* at 585. "A [Basque] whaling galleon returning with whalebone and one thousand barrels of oil in the late sixteenth century could realize six thousand to twelve thousand or more ducats depending on conditions that year. *Id.* at 588 (citing JEAN-PIERRE PROULX, CAN. PARKS SERV., BASQUE WHALING IN LABRADOR IN THE SIXTEENTH CENTURY 65–79 (1993)). Considering that "the average amount of insurance taken out on each ship (limited to ninety percent of value) in that period was between two thousand and twenty-five hundred ducats, the potential for profit among all concerned was considerable." *Id.* at 588. "[T]he price of a barrel of oil rose from six ducats in the 1560s to twelve to fifteen ducats in the 1590s." *Id.* at 588.

237. *Id.* at 587.

238. *Id.* at 588.

239. *Id.* at 592.

240. *Id.*

241. *Id.* at 593.

mare nullius.²⁴² But the Basque, British, and Danish whalers were soon overtaken by the much larger and more aggressive Dutch and German industries.²⁴³ Arctic whaling, increasingly important to Holland's economy, found a prominent place in Dutch high culture as well, portrayed in its own genre of paintings and engravings such as Adriaen van Salm's late seventeenth century *Whalers in the ice*.²⁴⁴

By the 1780s, however, as Greenland bowhead stocks rapidly declined, Dutch and German whaling profits plummeted.²⁴⁵ Even as the global industry collapsed, Britain, Denmark, and Sweden began to subsidize their respective national whaling fleets and tax imports of foreign whale oil in order to capture a greater share of diminishing whale-based commodities.²⁴⁶ The British government instituted a range of special trade and tax policies aimed to discourage domestic economic dependency on dwindling foreign sources.²⁴⁷ Meanwhile,

242. *Id.*

243. *Id.* at 597–98. Take, for example, the years 1661–1719 and the drift ice areas between Greenland and Spitsbergen (the peak period for drift ice whaling in the Arctic sub-region):

Dutch and German whalers made 10,610 trips to the Arctic, averaging 176 voyages per year. Over the same period, 548 ships (5.2 percent) were lost in the ice or to privateers. Whales killed totaled 49,973, or an average of 832 bowheads per year. Whale blubber totaled just over 2 million tuns at an average of 40.3 tuns (1,145.3 liters per tun) per whale. Whale oil produced for the six decades for the six decades was 4.9 million quarters (*kardels*), or barrels, at 232.8 liters per unit.

Id. at 600. Following depletion of the Spitsbergen area, Dutch and German whalers followed bowhead stocks to eastern and western Greenland as well as whaling grounds in Davis Strait, averaging 169 voyages per year between 1720 and 1800 for a total of 13,501 trips. *Id.* at 604. "In an average year, they killed 498 whales, whose carcasses produced 24,819 barrels of oil. The aggregate catch was 39,833 bowhead and right whales, for a total of 2 million barrels of whale oil placed on European markets." *Id.* In sum, during the entire period "[f]rom 1661 to 1800, Dutch and German whalers brought back to Europe blubber sufficient to produce 5 million barrels of whale oil (11.6 million hectoliters)." *Id.* at 610.

244. See National Maritime Museum, *Whalers in the Ice*, <http://www.nmm.ac.uk/collections/explore/object.cfm?ID=BHC0956> (last visited Oct 15, 2009); see also, RICHARDS, *supra*, note 25, at 599 ("[W]hat caught the popular imagination [of the Dutch] was the exotic appeal of dangerous voyages to the ice-filled seas of the far north to pursue marine animals as large as bowhead whales. Depicting northern whaling became a minor genre for Dutch painters and engravers.").

245. RICHARDS, *supra* note 25, at 604.

246. *Id.*

247. See *id.* at 605–06. As its commercial whaling industry flagged, Parliament attempted to boost it up with public investment. *Id.* at 605. "In 1733, Parliament offered an annual subsidy or bounty of twenty shillings per ton for each British whaler exceeding two hundred tons capacity equipped and sent to the Arctic. When this did not work, the official rate increased to thirty shillings per ton in 1740 and finally to forty shillings in 1749." *Id.* These policies led to a huge increase in British whaling, from an average of four Greenland expeditions per year in the mid-eighteenth century to an average of 171 by the early 1790s. *Id.* at 605–06. "Between 1733 and 1800, British whalers made 4,006 voyages to the ice fields, killed approximately twelve thousand

even as the quantity of its global production had long past reached peak levels, "whale oil became especially useful as a cheap fuel to light municipal street lamps, which, for the first time, were being introduced in British and European cities."²⁴⁸

To meet continued demand, the whale oil industry found new Arctic hunting grounds. Commercial hunting of bowhead whales in the North Pacific (and the Chukchi, Beaufort, and Bering Seas) did not fully commence until the mid-1800s, after Greenland stocks were nearly wiped out.²⁴⁹ But it only took two decades to reduce the western Arctic bowhead stocks by over sixty percent.²⁵⁰

In 2006, economic historian Robert Allen and environmental economist Ian Keay published an empirical analysis of Dutch, British, German, and U.S. whaling vessel records to compile "a comprehensive harvest series" of all Bowhead whales taken in each year of Arctic commercial whaling in the eastern Arctic over three centuries.²⁵¹ Assembled together, this data enabled Allen and Keay "to map out the pattern of decline in the Greenland-Spitzbergen eastern Arctic Bowhead whale population from its pristine level in 1611," when "there were approximately 52,500 adult Bowhead whales resident in the waters between the east coast of Greenland and the island of Spitzbergen," until 1911, when "there was no significant permanent population of Bowhead whales living in these waters."²⁵² "We can identify 1911, the year a British whaling vessel spent an entire season off the east coast of Greenland and did not sight, much less land, a single Bowhead whale, as the date of 'virtual extinction' for this stock."²⁵³ From this data, Allen and Keay reach two conclusions: first, that "the impact that human predation had on the eastern Arctic ecosystem must have been even more dramatic than previously reported"; and second, that the extermination of the

whales, and produced 1.4 million hectoliters (608,447 quarters or 123,688 English tuns) of whale oil and 5,303 metric tons of whalebone. By the end of the century, the British exchequer had paid 1.98 million pounds sterling in subsidies to whalers." *Id.* at 606 (internal citation omitted).

248. *Id.* at 607.

249. RICHARDS, *supra* note 25, at 616; Susan Mello, Bowhead Whale (*Balena mysticetus*), http://www.adfg.state.ak.us/special/esa/whale_bowhead/bowhead_whale.php (last visited Oct. 5, 2009).

250. Mello, *supra* note 249. In 1991, the bowhead population off the coast of Alaska was estimated to be about 7,800 animals. *Id.* American Cetacean Society estimates that, "[a]t present, the number of bowhead whales of the Chukchi-Beaufort-Bering Sea is estimated to exceed 8,000 [and] those of the eastern Canadian Arctic and of the Okhotsk Sea in far east Russia are in the hundreds." American Cetacean Society Fact Sheet: Bowhead Whale, *supra* note 123.

251. Robert C. Allen & Ian Keay, *Bowhead Whales in the Eastern Arctic, 1611-1911: Population Reconstruction with Historical Whaling Records*, 12 ENV'T & HIST. 89, 94 (2006).

252. *Id.* at 89-90.

253. *Id.* at 91.

Greenhead bowhead illustrates more generally “the impact that unfettered economic incentives may have on both species and industry sustainability.”²⁵⁴

VI. SETTLER COLONIALISM

By the second decade of the eighteenth century, Dutch, German, English, Scottish, and Danish whalers had already been hunting bowheads off the Greenland coast for more than a hundred years—severely disrupting the sustenance economies of the Greenlandic Inuit (Kalaallit) communities who lived on coastal lands.²⁵⁵ Since the abandonment of the original Norse settlements around 1500, there had been no effort to conquer the Kalaallit’s territory—until July 3, 1721, when Norwegian clergyman Hans Egede arrived in Greenland to carry out the mission he had been given by the Danish king.²⁵⁶ Planting an official banner (embossed with the words “Christianity and Trade”), Egede formally proclaimed Denmark’s sovereignty over the world’s largest island (re-asserting the original Viking Norwegian–Danish claim).²⁵⁷ Greenland thus assumed legal and political status as a colony of Denmark, its indigenous peoples becoming colonial subjects of the Danish monarchy, with their economic and trade relations regulated by the Royal Greenland Trading Company and their communal lives administered by Danish government officials.²⁵⁸

The aboriginal Sami nation that had long inhabited the Scandinavian far north and Russia’s Kola Peninsula had also been long subject to interventions by Norwegians, Swedes, Finns, and Russians.²⁵⁹ Like the native peoples of central and eastern Siberia, the Sami and other nearby peoples had been required to pay tribute in furs (and other goods) to colonial administrators.²⁶⁰ At that time, few if any ethnic Russians lived in the Tatar khanates and other feudal fiefdoms that claimed jurisdiction over Siberian lands where

254. *Id.* at 108.

255. RICHARDS, *supra* note 25, at 613.

256. John J. Teal, Jr., *Greenland and the World Around*, 31 FOREIGN AFF. 128, 134 (describing the search for lost European colonists in Greenland centuries after their disappearance).

257. *Id.*

258. CHATURVEDI, *supra* note 25, at 53–54. Greenland’s status as an official colony of Denmark continued for more than two centuries, *id.* at 53; its semi-colonial status continued until July 2009, Free Greenland Ruby, 21 July 2009, <http://www.freegreenlandruby.com/21-july-200/> (last visited Oct. 4, 2009). In most cases during this extensive colonial period, Danish administration of aboriginal peoples took into account the welfare of native communities to a greater degree than the policy and practices of other Arctic states. CHATURVEDI, *supra* note 25, at 54.

259. CHATURVEDI, *supra* note 25, at 50.

260. *Id.* at 50.

indigenous peoples lived. By 1700, however, about 300,000 Russians had moved to Siberia: trappers, migrating north to participate in the bounty provided by the newly-annexed Siberian hunting grounds; soldiers, military officers, and state bureaucrats to formally assert and effectively maintain sovereign control; and peasants, merchants, and priests. Each played its own role to accomplish Moscow's colonization policy.²⁶¹ By 1800, 900,000 Russians inhabited the Siberian north; by 1850, an additional 1.8 million Russians had settled there.²⁶²

In 1867, the Russians sold their Alaska colonies to the United States, but neither Moscow nor Washington consulted any of the indigenous nations who had lived in the region since time immemorial in this transaction.²⁶³ That same year, Canada became an official "Dominion" of the British Empire, and four years later (1871), the Canadian government purchased the vast Arctic lands (Rupert's Land and the "North-Western Territory") that had been previously held by the Hudson's Bay Company.²⁶⁴

Thus, by the late 1800s, Denmark, Sweden, Russia, Canada, and the United States had all asserted national sovereignty over northern Arctic lands without regard for the legitimate territorial and sovereignty claims of the regions' aboriginal nations. In each case, the expansion of modern nation-state boundaries and power was backed up by an expanding influx of settlers who came north to administer frontier territories, mine the Arctic's riches, and convert and "civilize" its native peoples.

A. Mineral Development

In southern Greenland, at some time between 1806 and 1814, German geologist Carl Ludwig Giesecke discovered cryolite, thus launching a century and a half of intensive, highly toxic mining operations there (until 1987, when the entire mineral stock had been extracted, and the mines abandoned).²⁶⁵

261. *Id.* at 44.

262. *Id.*

263. *Id.* at 45.

264. *Id.* at 47-48.

265. See Alfred Whittaker, *Karl Ludwig Giesecke: His Life, Performance, and Achievements*, 146 MITTEILUNGEN DER ÖSTERREICHISCHEN MINERALOGISCHEN GESELLSCHAFT [REP. OF THE AUSTRIAN MINERALOGICAL SOC'Y] 451, 469 (2001) (describing how Giesecke found cryolite's "geographical situation," and the mining operations that followed). Peter Høeg's hallucinatory novel *SMILLA'S SENSE OF SNOW* is in large measure a meditation on the nightmarish consequences of Giesecke's discovery on Greenland's indigenous peoples from generation to generation until the present day. See *Smilla's Sense of Snow*, http://www.novelguide.com/a/discover/nfs_17/nfs_17_00021.html (last visited Oct. 4, 2009) (reviewing PETER HØEG, *SMILLA'S SENSE OF SNOW* (Tiina Nunnally trans., Farrar, Straus & Giroux 1993) (1992)).

When silver and copper ore were discovered in Sami territory (shortly after 1630), Swedish encroachments on indigenous populations intensified.²⁶⁶ “Besides causing border conflict [between Sweden and] Denmark,” writes Sanjay Chaturvedi, “the exploitation of the ore led to the abuse of the Sami as a labour force under harsh conditions. Those who chose to resist were severely punished.”²⁶⁷ In a 1937-1938 *Foreign Affairs* article entitled “The Scramble for Swedish Iron Ore,” Joachim Joesten writes: “Sweden’s outstanding rôle in the world iron ore market is due primarily to her immense mineral riches lying north of the Arctic Circle.”²⁶⁸ Joesten emphasizes that more than ninety percent of the high-percentage iron ore in Europe is found in Sweden’s Lapland,²⁶⁹ home to Sami communities and a grazing area for its reindeer herds.²⁷⁰ “The Lapland deposits are also unusually accessible. At Kiruna, for example, the ore is . . . simply stripped from the mountainside. About 750 million tons are thus available for easy extraction.”²⁷¹

Most famously, in 1896, two brothers, members of the Tagish in Canada’s Yukon territory, made a discovery that upended the lives of indigenous peoples throughout the Canadian and Alaskan far north: at the Klondike River’s Bonanza Creek, Skookum Jim and Dawson Charlie struck gold.²⁷² Territories long controlled by native peoples became inundated by foreign (mostly white) prospectors in massive numbers, staking claims against one another, killing the wildlife that had sustained indigenous communities, and forcing native peoples off traditional lands.²⁷³ “Twenty prospectors, protected by a US gunboat, met the Chilkoot chief Hole-in-the-Face,” recounts Canadian historian Keith Crowe, “and by firing a few blank rounds from a machine gun forced the Chilkoots to open their mountain pass to all comers.”²⁷⁴ With subsistence hunting economies shattered, aboriginal men survived by hiring themselves out to the miners as packers or by performing a wide variety of menial jobs at low

266. CHATURVEDI, *supra* note 25, at 51.

267. *Id.*

268. Joachim Joesten, *The Scramble for Swedish Iron Ore*, 16 FOREIGN AFF. 347, 347 (1938).

269. *Id.*

270. Hugh Beach, *Negotiating Nature in Swedish Lapland: Ecology and Economics of Saami Reindeer Management*, in CONTESTED ARCTIC: INDIGENOUS PEOPLES, INDUSTRIAL STATES, AND THE CIRCUMPOLAR 122, 122-23 (Eric Alden Smith & Joan McCarter eds., 1997).

271. Joesten, *supra* note 268, at 347.

272. BONE, *supra* note 6, at 63-64.

273. *Id.*

274. *Id.* at 65. “By 1898 the population of the Klondike had reached 40,000 with the majority of the new inhabitants in Dawson. The new town had saloons, a theatre, restaurant, shops and the Buxton Church of England Mission.” Tony Dawe, *After the Gold Rush*, TIMES (London), Jan. 24, 2009, http://www.timesonline.co.uk/tol/travel/related_features/discovering_canada/article5576829.ece.

wages.²⁷⁵ Meanwhile, concerned that American prospectors might set the stage for Washington to annex far North American territories, Ottawa dramatically beefed up northern migration of its own Crown officials and initiated a surge of new and enhanced North-West Mounted Police detachments to assert and enforce Canadian sovereignty over Arctic and sub-Arctic regions.

By the time gold was discovered in the Yukon, the U.S. government had promoted emigration and settlement in neighboring Alaska.²⁷⁶ After the Alaskan gold rush began, the mass infiltration of prospectors needed little official encouragement.²⁷⁷ In Alaska, as in the Canadian Arctic, “whites typically took control of land without paying any attention to whether the land was already used by natives.”²⁷⁸ This process continued without respite for decades after the 1896 gold rush had run its course. In a 1938-1939 *Foreign Affairs* article entitled “The American Far North,” polar adventurer Vilhjálmur Stefánsson writes: “Men of white skin have trespassed upon the Arctic more during the last twenty years than they did during the previous two hundred.”²⁷⁹ He recalls that, fifty years earlier, Alaska’s “plain was inhabited by ten times as many Eskimos as now—perhaps even twenty times as many.”²⁸⁰ Stefánsson cites the 1937 *Annual Report* of the U.S. Secretary of the Interior: “More and more, a people which once was self-sufficient has become dependent upon external forces which are totally disregarding of their needs.”²⁸¹

However, just a few years later, in a 1940-1941 *Foreign Affairs* article entitled “Alaska, Outpost of American Defense,” William M. Franklin argues for intensified development of Alaska’s “vast undeveloped resources,” including “extensive reserves of gold, silver, platinum and coal, along with valuable deposits of lesser-known extent comprising tin, oil, lead, copper, antimony, zinc, iron and bismuth.”²⁸² Franklin laments that “less than half the area of the Territory has been adequately surveyed for minerals.”²⁸³ Moreover,

275. BONE, *supra* note 6, at 63-64. The massive social dislocations triggered by the Tagish brothers’ mineral resource discovery evoke nightmarish consequences well known to indigenous societies (from the Amazon rainforest to the Niger Delta) whose land is bitterly cursed by the discovery of oil and gas. See John Vidal, *Fight for Identity*, GULF TIMES (Qatar), June 15, 2009, at 2 (describing the global human rights emergency for indigenous people occupying lands with valuable natural resources).

276. BONE, *supra* note 6, at 63.

277. *Id.*

278. BANNER, *supra* note 154, at 309.

279. Vilhjálmur Stefánsson, *The American Far North*, 17 FOREIGN AFF. 508, 508 (1939).

280. *Id.* at 514.

281. *Id.* (quoting Harold L. Ickes, Secretary of the Interior).

282. William M. Franklin, *Alaska, Outpost of American Defense*, 19 FOREIGN AFF. 245, 245 (1940).

283. *Id.*

"[s]upplies of timber, furs and fish (particularly salmon) are immense. Yet the total population inhabiting this vast and valuable region numbers slightly less than 60,000 souls, of whom only one-half belong to the white race."²⁸⁴

Across the Bering Strait, and throughout the Russian Arctic all the way to the Kara Sea, a new Bolshevik government generated enormous increases in Russian settlement, mining, and industrialization to extend Soviet power across all northern territories and exploit rich deposits in iron, copper, nickel, lead, zinc, iron ore, rare metals (including gold, chromium, wolfram, platinum, and, uranium—a mineral of increasing importance), and energy resources including coal, timber, hydropower, and, later, oil and gas.²⁸⁵ Among Siberia's economic assets, Moscow especially targeted the region's indigenous nations, identified as "the small peoples of the North."²⁸⁶ In 1920, the Kremlin established "the Committee of the Northern Sea Route" (*Komseveroput* or KSMP) to administer all Arctic territories, with northern gold-mining projects under the jurisdiction of the All-Union Trust of the Gold Industry (*Soiuzzoloto*).²⁸⁷ Assuming control of the Kremlin, Joseph Stalin made Arctic sovereignty an urgent strategic priority. Stalin sponsored Soviet expeditions to the North Pole, received Arctic explorers with ticker-tape parades on Red Square, and, above all, intensified efforts to exploit Siberia's natural resources for Soviet national development. "The Arctic and our northern regions contain colossal wealth," Stalin proclaimed.²⁸⁸ "We must create a Soviet organization which can, in the shortest period possible, include this wealth in the general resources of our socialist economic structure."²⁸⁹

Stalin's Arctic organization—"the Main Administration of the Northern Sea Route"—was known as *Glavsevmorput* (GUSMP).²⁹⁰ In a 1937–1938 *Foreign Affairs* article entitled "Soviet Strategy in the Arctic," British journalist H. P. Smolka describes this new organization and its sovereign powers:

284. *Id.*

285. *See, e.g.*, Bruce Hopper, *Eastward the Course of Soviet Empire*, 14 FOREIGN AFF. 37, 42 (1935) [hereinafter Hopper, *Eastward*] (noting that the Eastern Regions of the USSR hold an "astonishingly high proportion" of its natural resources); Bruce Hopper, *The Soviet Conquest of the Far North*, 14 FOREIGN AFF. 499, 503 (1935) (noting that the Yakutia is rich in natural resources); H.P. Smolka, *Soviet Strategy in the Arctic*, 16 FOREIGN AFF. 272, 276–77 (1938) (noting that the Norilisk mountains are an important source of coal, iron, and nickel deposits).

286. JOHN MCCANNON, *RED ARCTIC: POLAR EXPLORATION AND THE MYTH OF THE NORTH IN THE SOVIET UNION, 1932–1939*, at 22 (1998).

287. *Id.* at 23.

288. *Id.* at 33 (quoting Joseph Stalin).

289. *Id.*

290. *Id.* at 34.

It has an exclusive charter to develop all of the Union's territory above the 62nd northern parallel, an area of 10 million square kilometers [i.e., roughly one quarter of the vast nation's total land mass]. Everything in this region is under *Glavsevmorput's* jurisdiction—transport by sea, river and air; industry; town building; reindeer breeding; wireless and meteorological services; native education; scientific study of the earth, the flora and fauna. . . . Last year *Glavsevmorput* had already spent an equivalent of \$1,000,000,000 on its activities, while 40,000 men and women, a regular army of invasion against the Arctic, were on its payroll. Russians like to call this enterprise a modern socialist equivalent to the East India Company. Undoubtedly in scope and achievement it is the largest systematic pioneering organization in the world today.²⁹¹

By 1937, as *Glavsevmorput* “reigned supreme in its Arctic kingdom,” the population of ethnic Russians in the North reached 1.4 million, many engaged in the mining of Siberia's gold and other mineral deposits.²⁹²

In another *Foreign Affairs* article just two years before (“The Soviet Conquest of the Far North,” 1935–1936), Bruce Hopper had written: “In the matter of recruitment for service in the North, the Soviet Government has relied largely on volunteers, granting them special rewards and privileges.”²⁹³ Hopper cited various Kremlin decrees offering various financial inducements to Arctic and sub-Arctic settlement, and these no doubt provided incentives to Arctic migration.²⁹⁴ But Stalin always preferred sticks to carrots, and his regime was far more adept at offering the former. Like most Western observers of the time, Hopper ignored the far more influential source of Soviet “volunteer” labor in the Siberian north: the *Gulag Archipelago*.²⁹⁵ “Everybody knows of Auschwitz and Belsen,” writes Martin Amis, but “[n]obody knows of Vorkuta and Solovetsky,” Stalin's brutal labor camp prisons in the Soviet Arctic.²⁹⁶ The “Stalin White Sea-Baltic Sea Canal,” for example, praised by Maxim Gorky as a triumphant achievement of Soviet engineering, was built entirely by prison slave labor; the canal workers were treated so brutally that

291. Smolka, *supra* note 285, at 273.

292. MCCANNON, *supra* note 286, at 34, 37, 54.

293. Hopper, *supra* note 285, at 502.

294. *Id.* at 502–03.

295. *Id.* at 499–505.

296. MARTIN AMIS, *KOBA THE DREAD: LAUGHTER AND THE TWENTY MILLION* 257 (2002). In Vorkuta, a coal-mining camp near the Pechora River, “the temperature is below zero Celsius for two-thirds of the year, and for more than 100 days the *khanovey*, or “wind of winds,” blows across the tundra.” ROBERT CONQUEST, *THE GREAT TERROR: A REASSESSMENT* 329–30 (40th Anniversary ed., Oxford Univ. Press 2007) (1990). Robert Conquest, perhaps the foremost historian of Stalin's terror, notes that the Vorkuta “climate killed those from the southern parts of Russia very quickly; few would be alive after a year or two.” *Id.* at 310–11. This was also true for the prison population at Solovetsky. *Id.* at 329–30.

more than 100,000 (of a total force of 300,000 prisoners) might have perished during the construction period.²⁹⁷

Among the northern Siberian “penal empire,” the most horrible prison camps, including the mining complexes of Vorkuta and Norilsk, were controlled by the “Far Eastern Construction Trust,” or *Dalsroi*.²⁹⁸ The largest and cruelest of the *Dalsroi* camps was Kolyma; its slave laborers worked the far north Magadan gold mines twelve hours every day at a per annum productivity rate of 20,000 kilograms of gold and a per annum worker death rate of about 30 percent.²⁹⁹

Dalstroi’s Siberian gold-mining operations expanded through the 1930s to a network of more than one hundred camps.³⁰⁰ To service the prison and mining industries, by 1939 a “free” population of Russian settlers transformed Magadan from “a bleak, windswept outpost into a boomtown of 70,000 free workers.”³⁰¹ By that time, 2.4 million people filled Stalin’s labor camp system.³⁰² In 1944, the Magadan and the Kolyma–*Dalstroi* gold mine were visited by Henry Wallace, Vice President of the United States, and Professor Owen Lattimore, representing the United States Office of War Information. Following the tour, Lattimore praised the “orderly” Soviet opening of the North and its administration “by a remarkable concern, the Dalstroy[,] . . . which can be roughly compared to a combination of the Hudson Bay Company and the T.V.A.”³⁰³

With the benefit of hindsight, however, as suggested by McCannon, we now understand that “the entire history of Stalinist development in the North is inextricably intertwined with the great human tragedy that was the GULAG.”³⁰⁴ Slave laborers built the Stalin Canal and the Baikal-Amur and Arctic railways, and they worked the Kolyma and Vorkuta mines, among many others.³⁰⁵ Across a Siberian Arctic territory “four times the size of France,” *Dalstroi* managed the production of approximately “one-fourth of the USSR’s entire gold yield: 74.5 of 320 tons,” raising the USSR’s share in global gold production from twenty-six to forty percent.³⁰⁶

297. MCCANNON, *supra* note 286, at 114. Prisoners in the Vaigach camp, on a remote Arctic island in the Kara Sea, dug up zinc and lead *by hand* in frozen winter temperatures of minus 40°C. ORLANDO FIGES, *THE WHISPERERS: PRIVATE LIFE IN STALIN’S RUSSIA* 210 (2007).

298. CONQUEST, *supra* note 296, at 309, 324; MCCANNON, *supra* note 286, at 168, 172.

299. CONQUEST, *supra* note 296, at 327–28; MCCANNON, *supra* note 286, at 170.

300. MCCANNON, *supra* note 286, at 170.

301. *Id.*

302. FIGES, *supra* note 297, at 208.

303. CONQUEST, *supra* note 296, at 328–29.

304. MCCANNON *supra* note 286, at 177.

305. CONQUEST, *supra* note 296, at 324–30.

306. MCCANNON, *supra* note 286, at 170, 172. Meanwhile, Siberian gold mining continues to the present day, especially as post-Soviet private investment has brought

B. Indigenous Cultural Eradication and Resilience

The [Iñupiac] greeting procedure used with Westerners during the first half of the 19th century was to lick one's hands, draw them over one's face and body, and then draw them over the stranger's face and body. This was followed by an embrace and the rubbing of noses.

Ernest S. Burch, Jr., *Alliance and Conflict: The World System of the Iñupiac Eskimos*.³⁰⁷

As the tens of thousands of ethnic Russians settled in Arctic lands, they "treated the native Siberians in much the same way that colonizers everywhere tend to treat indigenous peoples: they plied them with cheap alcohol, took liberties with the women, disparaged customs and rituals, and interfered with traditional livelihoods."³⁰⁸ Russians made contracts with Nenets and Khanty traders and hunters, for example, but ignored and violated them at will.³⁰⁹

about a revival of extensive mining of the old *Dalstroi* deposits. Robin Paxton, *Russia Revives Gold Mining in the Gulags*, REUTERS, August 12, 2009, <http://www.reuters.com/article/ousiv/dUSTRE57B01E20090812?sp=true>. Paxton states:

This is where mining began in Russia's Far East. Stalin, needing bodies to unearth new-found gold reserves, sent hundreds of thousands of prisoners to slave in the region's labour camps over two decades from the early 1930s. From such grisly beginnings, Magadan has developed into the hub of gold processing in the Russian Far East.

Id. Today, gold bullion is processed at the Kolyma Refinery; "[f]rom here, 15 kg (33 pound) gold bars worth more than \$450,000 each at current prices are delivered to Russian banks." *Id.*

307. BURCH, ALLIANCE AND CONFLICT: THE WORLD SYSTEM OF THE INUPIAQ ESKIMOS, *supra* note 93, at 147 (citing 1 FREDERICK WILLIAM BEECHY, NARRATIVE OF A VOYAGE TO THE PACIFIC AND BERING'S STRAIT TO CO-OPERATE WITH THE POLAR EXPEDITIONS 345-46, 391, 429 (Colburn and Bently 1831); RICHARD COLLINSON, JOURNAL OF H.M.S. "ENTERPRISE" ON THE EXPEDITION IN SEARCH OF SIR JOHN FRANKLIN'S SHIPS BY BERING STRAIT, 1850-55, at 67 (Sampson, Low, Marsten, Searle & Rivington 1889); WILLIAM HULME HOOPER, TEN MONTHS AMONG THE TENTS OF THE TUSKI 235 (J. Murray 1853); 1 OTTO VON KOTZEBUE, A VOYAGE OF DISCOVERY INTO THE SOUTH SEA AND BEERING'S STRAITS 225-26 (N. Israel 1967) (1821); 1 THE JOURNAL OF ROCHEFORT MAGUIRE, 1852-1854, at 169, 215 n.1 (John R. Bockstoce ed., Hakluyt Soc'y 1988); John Murdoch, *Ethnological Results of the Point Barrow Expedition*, in NINTH ANNUAL REPORT OF THE BUREAU OF ETHNOLOGY, 1887-88, at 422 (Gov't Printing Office 1892); DOROTHY JEAN RAY, ETHNOHISTORY IN THE ARCTIC 38 (R.A. Pierce ed., Limestone Press 1983); THOMAS SIMPSON, NARRATIVE OF THE DISCOVERIES ON THE NORTH COAST OF AMERICA 155 (R. Bentley 1843); James W. VanStone, *An Early Nineteenth Century Artist in Alaska: Louis Choris and the First Kotzebue Expedition*, 51 PAC. NORTHWEST Q. 145, 146 (1960).

308. MCCANNON, *supra* note 286, at 54.

309. *Id.*

Russian orthodox priests attempted to forcibly convert native peoples, and missionaries offered bribes to secure conversions.³¹⁰

Yet Tsarist-era intrusions on indigenous cultural life paled by comparison to interference by officials and institutions of the new Soviet state in the name of socialist modernization. The USSR, launched by Lenin's 1917 revolution, gained control of Siberia's northern and eastern regions only after five years of civil war and colonial expansion. With a renewed strategic focus on the "sovietization" of the nation's Arctic frontier, the Kremlin "expended huge efforts to seek out the remotest, tiniest communities and made them their 'own', *svoy*, a word which also implies making them less strange or alien. Soviet policy was moulded by an ideal of 'mastery' (*osvoyniye*) of the North, a term that literally means 'appropriation.'³¹¹

Upon seizing Arctic and sub-Arctic regions under the Union's sovereignty, the Soviets applied socialist collectivization policies to aboriginal societies inhabiting the land.³¹² Families that had previously depended on the herding of private reindeer stocks were deprived of their livelihoods as "almost every reindeer in Russia was confiscated and placed collectively in large herds run by the State as Collective (later State) Farms. Many who resisted were exiled or shot."³¹³ Native shepherds were drafted into one of thirteen Soviet regimental "reindeer brigades."³¹⁴ As recounted by Piers Vitebsky, a Western ethnographer who lived in Eveny/Evenki communities, "[t]he reindeer peoples across the country responded by abandoning their animals or eating them to prevent them from falling into State hands, and settled down to a grim test of endurance that lasted until the mid-1980s."³¹⁵ Nomadism, seen by the Soviets as a backward way of life, was thus "liquidated" as an economic and social category.³¹⁶ "In the seven years from 1927 to 1934, nearly a million reindeer disappeared in Russia as their numbers fell from 2.2 to 1.4 million."³¹⁷

Unable to follow the migratory reindeer and thus no longer economically self-sufficient, Siberian herding peoples became dependent on government support. Organized into Soviet collectives combining multiple indigenous nationalities, traditional and social structures were eroded and self-governing political institutions eviscerated. Traditional shamans, among the only indigenous leaders

310. ARMSTRONG, *supra* note 92, at 115.

311. VITEBSKY, *supra* note 108, at 47.

312. *Id.* at 34.

313. *Id.*

314. *Id.* at 43-44.

315. *Id.* at 34-35.

316. *Id.* at 43.

317. *Id.* at 35.

who could potentially organize resistance to settlers or party officials, were targeted for re-education, exile, imprisonment, or execution.³¹⁸ “The Soviet persecution of Siberian shamans was so thorough,” writes Vitebsky, “that almost no shamans of this old type exist anywhere today.”³¹⁹

Meanwhile, the Orthodox missionaries of the Tsarist period were replaced by communist missionaries who sought to rescue native peoples from the oppression of primitive, feudal tribalism.³²⁰ In the 1930s, *Glavsevmorput* organized and funded campaigns of “Red Tent” volunteers to bring Bolshevism to the Russian Arctic’s native peoples.³²¹ The Committee of the North converted indigenous peoples’ Latin-based alphabets to Cyrillic and prohibited the Communist Party publishing house to produce printed materials in Siberian native languages.³²² In these efforts, *Glavsevmorput* sought to achieve two objectives: “eradicating anything about the native way of life that could be seen as threatening to its authority and harnessing the productive capacity of the small peoples” for socialist development of the Russian North.³²³

Modern colonists of the “capitalist” West were no more respectful of aboriginal peoples or cultures. By the time of the Klondike gold rush, Canadian indigenous nations had long been subject to the Crown’s sovereign authority and, specifically, to the colonial policy of cultural, social, and economic assimilation.³²⁴ By the mid-1700s, military authorities outlawed gift-giving, and subsequent legislation made it criminal for West Coast Inuits to hold traditional potlatch ceremonies.³²⁵ In 1830, the Secretary of State for the Colonies directed Crown officials “to overcome the ‘disposition in the Aboriginal inhabitants to cling to their original habits and mode of life.’”³²⁶ To achieve this civilizing objective, native communities were assigned to small tracts of land or “reserves” set aside in most cases by unilateral parliamentary acts under Crown authority.³²⁷ Initially, traditional indigenous authorities and decision-making processes

318. *Id.*

319. *Id.* at 261.

320. *Id.* at 34–35.

321. MCCANNON, *supra* note 286, at 52.

322. *Id.*

323. *Id.*

324. See BONE, *supra* note 6, at 51–63 (describing the Crown’s cultural, social, and economic influence on the natives prior to the Klondike gold rush).

325. Mark D. Walters, *Promise and Paradox: The Emergence of Indigenous Rights Law in Canada*, in *INDIGENOUS PEOPLES AND THE LAW: COMPARATIVE AND CRITICAL PERSPECTIVES* 21, 28, 32 (Benjamin J. Richardson, Shin Imai & Kent McNeil, eds., 2009). Walters indicates that criminal prohibition of potlatch ceremonies was only repealed in the contemporary era. *Id.* at 32.

326. *Id.* at 31.

327. *Id.*

were maintained on the reserves, although “under the watchful eye of Indian department agents.”³²⁸

The 1876 Indian Act formally codified and integrated what had previously been an ad hoc system of aboriginal reserves.³²⁹ After its passage, writes Mark Walters, Canadian officials “resorted to increasingly aggressive measures to ‘civilise’ Indians, the most intrusive being the Indian residential school system.”³³⁰

The objective of ‘weaning’ Indians ‘from the habits and feelings of their ancestors’, it was concluded, required removing children ‘from the injurious influence of their homes’. From the late-19th century until the latter half of the 20th century, thousands of aboriginal children were separated from their families and sent to church-operated residential schools where conditions were often appalling, native languages and cultures were suppressed, and many students were subjected to physical and sexual abuse.³³¹

A century implementing Canada’s Native Schools policy “helped to create serious social problems within aboriginal communities,” concludes Walters, “but it did not result in assimilation.”³³²

With the forced education of children in church schools, the spiritual front of the “weaning” process was also intensified, focusing on the aboriginal community itself—the family, home, and each individual soul.³³³ Since the period of initial contact with European fur traders, aboriginal communities encountered Christian missionaries who set up missions close to the fur posts.³³⁴ These priests and evangelicals had migrated to Northern lands to bring good news to the Arctic’s native peoples and save them, one by one: to persuade each man, woman, and child to perceive traditional practices as heathen and sinful in contravention of God’s wishes; to reject pagan, demonic shamanistic practices; to abandon animist deities and spirits, to accept and embrace Jesus Christ, and to worship the Father, Son, and Holy Ghost.³³⁵

Sometimes the missionaries failed; sometimes they were too successful. In March 1930, an HBC trader from Leaf River, Northern Quebec, wrote to a local military officer informing him that “[t]he Natives around here are a bum crowd, [and] at the present time are

328. *Id.* at 31–32.

329. *Id.* at 32. Canadian anthropologist Evie Plaice refers to the “legacy of racist policies that had shaped Canadian Native relations since the birth of the Indian Act in 1876 and had in fact been copied by postwar South African apartheid.” Evie Plaice, Commentary, *The Return of the Native*, 44 CURRENT ANTHROPOLOGY 395, 396 (2003).

330. Walters, *supra* note 325, at 32.

331. *Id.* at 32 (citations omitted).

332. *Id.*

333. BONE, *supra* note 6, at 58.

334. *Id.* (noting that by the middle of the 19th century Anglican and Roman Catholic missionaries had established themselves in the North with their missionaries usually located near the fur posts).

335. Walters, *supra* note 325, at 32.

all crazy over religion. They are led by a fellow called Miller, [and] the antics all of them go through would qualify at least two thirds for the bug house."³³⁶ Miller, an Inuk who had been recently converted to Christianity, now preached his own understanding of the gospels, conducted his own baptisms, and led the people of his community in a wide variety of theatrical rituals deemed by Canadian police to be insane. At one point, the district corporal returned to the village "in the nick of time" to save a woman from death by stoning as required by Miller's reading of Biblical verse.³³⁷ In a Greenland case, *Inequnareq* (the Sweet One) declared that "she had given birth to Jesus and therefore," unless she received all social and economic rights enjoyed by the Danes, the world would end.³³⁸ In 1920, some Quebec Inuit, following the miraculous death of a talking down-covered newborn baby, prepared for the arrival of Jesus by killing all of their dogs "in order to follow biblical prescriptions."³³⁹ On the east coast of Hudson Bay, *Qirturaaluk* set out for Jerusalem by dogsled.³⁴⁰

In 1946, an Inuit of Pond Inlet, Arctic Bay, traveled to heaven where she met Jesus, then returned to bring her friends and neighbors to do the same; soon thereafter, according to the RCMP constable, "[s]pirits walked on the roof, various utensils in the igloo moved by themselves, and a number of new followers were enlisted."³⁴¹ The visionary woman, denounced by the local priest as "distinctly 'mental,'" was identified to the community as *ukpiluaqut*, one of "those who believe too much"—a category resonant with each of the above cases.³⁴² But each case also suggests a polyglot Arctic version of religious syncretism akin to what Vilhjálmur Stefannson called "Eskimoized Christianity," whereby the Inuvialuit accepts Christian beliefs alongside his traditional spirit practices.³⁴³ "They have not ceased to have faith in the heathen things," Stefannson writes, "but they have ceased to practice them because they are

336. Shelagh D. Grant, *Religious Fanaticism at Leaf River, Ungava, 1931*, 21 *ÉTUDES INUIT [INUIT STUD.]* 159, 167 (1997) (quoting HBC trader). Ethnographic research collected in the Canadian journal *ÉTUDES INUIT [INUIT STUDIES]* provides multidimensional *thick descriptions* of Inuit-missionary encounters and relationships at different historical moments across two centuries; the stories in this and the following paragraphs come from this rich source.

337. *Id.* at 177.

338. Regitze Margrethe Søby, *Naming and Christianity*, 21 *ÉTUDES INUIT [INUIT STUDIES]* 293, 295 (1997).

339. Christopher G. Trott, *The Rapture and the Rupture: Religious Change Amongst the Inuit of North Baffin Island*, 21 *ÉTUDES INUIT [INUIT STUDIES]* 209, 212 (1997).

340. *Id.*

341. *Id.* at 218.

342. *Id.* 210, 216.

343. See VILHJÁLMUR STEFÁNSSON, *MY LIFE WITH THE ESKIMO* 415 (Macmillan Co. 1922) (1913) (defining "Eskimoized Christianity" as "Christianity comprehensible to the Eskimo").

wicked and lessen one's chances of salvation."³⁴⁴ Maybe yes and maybe no. At least Stefansson *wished* for them to cease practicing the old pagan ways while retaining sympathy for the complexity of their culture clash.

Many Christians evangelicals were far less tolerant of animist legacies. Believing shamanism to be Satanic, missionaries dedicated themselves to a bitter, uncompromising struggle against the shamans themselves.³⁴⁵ Of great importance in these struggles was *siqqitiq*—the practice of announcing conversion from paganism to Christianity by the consumption of previously tabooed foods.³⁴⁶ But indigenous Arctic communities also witnessed struggles between missionaries of different denominations for their faith. For example, in September 1929 “two Anglican and two Roman Catholic missionaries arrived together on the Hudson Bay Company (HBC) supply boat at Pond Inlet.”³⁴⁷ From that day on, “these missionaries competed ruthlessly for the souls of the Inuit, traveling over long distances to meet the Inuit in their camps.”³⁴⁸ While “the Anglicans soon had the upper hand[,] . . . the Catholic missionaries tried to outflank the Anglicans,” apparently failing in the end.³⁴⁹

C. Demographic Data

But indigenous cultural resilience could only go so far. In the end, biological threats proved far graver—across nearly all aboriginal nations in the Arctic—than spiritual assimilation efforts, compulsory residential education, forced family separation, gift-giving prohibitions, potlatch criminalization, the exile or killing of shamans, and even evictions from sacred lands.³⁵⁰ The indigenous peoples of the Arctic survived these onslaughts and continue to survive today, although with much smaller numbers and greater impoverishment than would have been the case had European colonization never occurred. What decimated their societies were disease (epidemics of

344. *Id.* at 425.

345. Trott, *supra* note 339, at 222.

346. *Id.* at 213.

347. *Id.* This competition did not arise out of the blue. Edmund Peck had been the first Anglican priest to arrive at Baffin Island in 1894; translating the New Testament into Eastern Arctic Inuktitut, he was well received by local communities. APOSTLE TO THE INUIT: THE JOURNALS AND ETHNOGRAPHIC NOTES OF EDMUND JAMES PECK, THE BAFFIN YEARS, 1894–1905, at 3, 5, 7 (Frédéric Laugrand et al. eds., 2006). This did not please the Catholic Oblate order, which promptly established a competing mission at Chesterfield Inlet, thus triggering “an intense competition between these two forces” in an atmosphere of “uncompromising hostility.” Trott, *supra* note 339, at 213. The Anglicans moved to establish another mission; then the Catholics did the same, until the fateful 1929 boat trip. *Id.*

348. Trott, *supra* note 339, at 213.

349. *Id.*, at 213–14

350. Walters, *supra* note 325, at 26–28, 32–33.

smallpox, typhus, scarlet fever, and other infectious diseases brought to them by European traders, missionaries, and settlers) and starvation (occurring in cycles of famine and malnutrition exacerbated by the collapse of subsistence economies and the depletion of traditional food sources).³⁵¹

Moving across Siberia from west to east, smallpox epidemics between 1630 and 1660 killed four-fifths of the Tungus and Yakut people.³⁵² "Russians seized and enslaved women to provide sex and domestic services for the male invaders."³⁵³ The spread of venereal disease (called "the Russian disease" by Siberian natives) "sharply reduced fertility and sent indigenous populations into decline."³⁵⁴ Measles and alcoholism further battered native communities.³⁵⁵ But smallpox was the greatest cause of mass death among indigenous peoples.³⁵⁶ According to the 1744 diary of Heinrich von Fuch ("a political exile with extended experience among the Yakut and Tungus peoples of northeastern Siberia"), "when they are stricken with smallpox they die like flies."³⁵⁷ Returning roughly every twenty or thirty years, smallpox epidemics decimated aboriginal populations throughout northern lands. Death rates regularly reached fifty percent of affected aboriginal communities.³⁵⁸

The depopulation of indigenous Alaskan, Canadian Arctic, and Greenlandic nations followed roughly the same pattern. The best accounting comes from Russell Thornton (drawing in part on James Mooney's earlier data).³⁵⁹ In Alaska, before contact, there were

351. RUSSELL THORNTON, *The Native American Population History of Alaska, Canada, and Greenland*, Appendix to RUSSELL THORNTON, *AMERICAN INDIAN HOLOCAUST AND SURVIVAL: A POPULATION HISTORY SINCE 1492*, at 241, 241-44 (Civilization of the Am. Indian Series No. 186, 1987).

352. RICHARDS, *supra* note 25, at 538.

353. *Id.* at 524.

354. *Id.* at 538.

355. *Id.*

356. *Id.*

357. *Id.* at 540 (quoting BASIL DMYTRYSHYN, ET AL., *RUSSIA'S CONQUEST OF SIBERIA, 1558-1700: A DOCUMENTARY RECORD* 170 (N. Pac. Studies Series No. 9, 1985)). When men and women died, surviving family members were forced by Tsarist administrators to pay the *iasak* that had been assigned to them. *Id.* "I personally knew several wealthy Iakuts who had to pay for four or five of their dead relatives," von Fuchs recalls. *Id.* "They were so impoverished that before I left they had to forfeit all their livestock and horses, and sometimes even their wives and children [to the Russian officials]. Some of them hang or drown themselves." *Id.*

358. *Id.* at 538 ("The native Siberian population did not disappear, in spite of Russian brutality and the ravages of smallpox and other diseases."). Richards cites records of a higher total native Siberian population in 1790 as compared to re-conquest estimates (303,395 as compared to 227,000); however, he suggests that "[p]art of the increase may be accounted for by the inclusion of a growing number of mixed-race, Russian-indigenous persons counted as Siberians by officials." *Id.* at 541.

359. THORNTON, *supra* note 351, at 241 (citing James Mooney, *The Aboriginal Population of America North of Mexico*, in 80 SMITHSONIAN MISCELLANEOUS COLLECTIONS 1, 30-33 (John R. Swanton ed., 1928)).

approximately 72,600 aboriginal people (including 16,000 Aleuts, 6,600 Athapascans, and 10,000 members of Tlingit tribes). After only twenty years of interaction with Russian traders, the Aleut population was reduced by one-half. By the mid-1830s, smallpox epidemics had further reduced the population to one-quarter of the original size.³⁶⁰ Eskimo tribes farther north "were not greatly disturbed until about 1848 when the whalers began to frequent the arctic coasts, introducing whiskey and disease, and destroying the native food supply."³⁶¹ By the end of the nineteenth century, the total Alaskan native population had been reduced to 28,310.³⁶²

In Canada, Thornton and Mooney estimate an original indigenous population totaling approximately 221,000 adults.³⁶³ By the end of the nineteenth century, this population had been reduced to approximately 101,000 (rising again to 108,261 by 1911).³⁶⁴ The Canadian aboriginal depopulation can be explained by a variety of causes, each linked to the arrival of the Europeans: the use of newly acquired guns against neighboring tribes; measles; alcoholism; recurrent famines; patterns of starvation; influenza epidemics (in 1834, 1837–1838, and 1843), a particularly vicious epidemic of scarlatina in 1865 (estimated to have killed one out of four indigenous people in the lower Mackenzie region); and a wide range of other European-based infectious diseases to which indigenous peoples became exposed.³⁶⁵

As in Siberia, the worst killer in the Western Arctic was smallpox (with particularly lethal epidemics in 1616–1620, 1636–1639, 1670, 1755, 1781–1782, 1837–1838, 1852–1853, 1862, and 1870–1871).³⁶⁶ In total, how many people in the region were killed as a result of European contact? We know from whaling records the precise number of bowheads killed (38,000 in the Davis Strait alone, for example); however, as Barry Lopez observes, "[t]here are no similar figures for the number of native people in the region who fell victim to diphtheria, smallpox, tuberculosis, poliomyelitis, and other diseases—historians have suggested that 90 percent of the indigenous population of North America is not an unreasonable figure."³⁶⁷ Here Thornton and Mooney's more conservative numbers—suggesting

360. *Id.*

361. *Id.* "The interior (Athapascan) tribes have probably suffered less in proportion, but have been reduced by epidemics of smallpox and fever, usually entering from the coast." *Id.*

362. *Id.* at 242.

363. *Id.*

364. *Id.* at 242–43.

365. *Id.* at 243–44.

366. *Id.* at 241–44.

367. LOPEZ, *supra* note 3, at 10.

aboriginal populations cut down by half—are more precise and reliable, and they are large enough.³⁶⁸

VII. *ULTIMA THULE*

“The Arctic is to us what the Mediterranean was to the Greeks and Romans, the center of the world.”

U.S. Air Force Colonel Bernt Balchen, Ret.³⁶⁹

The Cold War initiated a new, terrible epoch in global environmental history, from which the world has not recovered. The Arctic is at the epicenter of that history—ground (sea, ice, and permafrost) zero. I use the word “terrible” (from the Latin *terribilis*, “to frighten”) in all dimensions of its meaning: harrowing; evoking fear, awe, and dread; formidable; and very bad (i.e., as we use the word to remember Russia’s Tsar Ivan IV, 1530–1584, whose military conquest of Siberia evoked comparable associations).

From the establishment of the North Atlantic Treaty Organization (NATO) in 1949 until the present day, buried silos in Arctic lands have held nuclear-tipped missiles ready to launch on alert across polar trajectories; air force and naval bases have housed nuclear-armed planes and pilots ready to carry nuclear weapons on the short polar flight to designated targets; and the Arctic Sea itself, including the dark silent realms beneath the polar ice, has been the dominion of nuclear submarines from each adversary, heightening deterrence capacity by maintaining post-attack survivability for a punishing second strike.

A. *The 1941 Greenland Treaty*

The U.S. acquisition of Alaska from Russia was the brainchild of Secretary of State William Seward, an enthusiastic proponent of American territorial expansion.³⁷⁰ Americans who opposed the plan (why waste treasury dollars on a barren northern wasteland?) called the new territory “Seward’s Folly.”³⁷¹ As we well know, Seward proved to be a visionary, as demonstrated by the enormous return on

368. THORNTON, *supra* note 351, at 241–44.

369. Robert Hayton, *Polar Problems and International Law*, 52 AM. J. INT’L L. 746, 747 (1958) (quoting UNITED STATES DEPARTMENT OF DEFENSE, OFFICE OF ARMED FORCES INFORMATION AND EDUCATION, *THE ARCTIC, A HOT SPOT OF FREE WORLD DEFENSE* DOD Pam. 1-12 (Feb. 21, 1958) (quoting Colonel Bernt Balchen, U.S. Air Force Ret.)).

370. Gruening, *supra* note 13, at 378.

371. *Id.* The price was \$7,200,000 (approximately two cents per acre). *Id.*

the taxpayer's investment.³⁷² However, we might not remember that Seward's Arctic vision did not stop at Alaska. For Seward, the realization of American manifest destiny required U.S. sovereignty over Greenland as well.³⁷³ Control over Greenland, asserted by application of the Monroe Doctrine, "would give the U.S. influence in the North Atlantic in the same way that the purchase of Alaska in 1867 bought influence in the North Pacific."³⁷⁴ The Pennsylvania-born Arctic explorer Robert Peary supported Seward's Greenland policy, arguing further that the U.S. should reject all Danish claims on the ground that the vast island already belonged to the United States.³⁷⁵

Seward and Peary did not succeed in their efforts, at least not directly. Eventually, though, the White House, the Pentagon, Foggy Bottom, and Capitol Hill came to share Seward and Peary's vision, as the strategic objective of enhanced U.S. political influence and military power in the North Atlantic became increasingly seen as legitimate, necessary, and urgent.³⁷⁶

On April 9, 1941, in Washington, D.C., Danish Ambassador to the United States Henrik Kauffmann ("acting on behalf of His Majesty the King of Denmark in His capacity as sovereign of Greenland") and U.S. Secretary of State Cordell Hull ("acting on behalf of the United States of America") signed an "Agreement Relating to the Defense of Greenland," known as "The Greenland Treaty."³⁷⁷ The date of treaty execution was no coincidence. Precisely one year earlier, on April 9, 1940, the Nazis invaded and occupied Denmark.³⁷⁸ Notwithstanding difficult questions about the treaty's legal validity, it effectively recognized a quid pro quo deal: Washington would recognize Copenhagen's sovereignty over Greenland in exchange for U.S. rights to license and use Greenland territories to establish military bases (over which the U.S. would

372. *See id.* ("In the past fiscal year Alaska has returned to the federal treasury in income taxes alone over five times the original purchase price.")

373. John J. Teal, *Alaska, Fulcrum of Power*, 27 FOREIGN AFF. 86, 89 (1948) ("[Seward] spoke of assimilating the whole North American continent from the North Pole to the Isthmus into an American Union and, with strategic insight, envisaged an impenetrable defense ring circling through Alaska, Greenland and Panama.")

374. JØRGEN TAAGHOLT & JENS CLAUS HANSEN, GREENLAND: SECURITY PERSPECTIVES 18 (Daniel Lufkin trans., 2001) (Den.).

375. *Id.*

376. *See, e.g.*, Teal, *Greenland and the World Around*, *supra* note 256, at 138 ("When the United States entered [World War II], Greenland became of critical importance as a relay station for the thousands of planes which were sent to Europe, as a naval base for the vessels guarding the North Atlantic shipping routes, and as a source of weather information.")

377. Herbert W. Briggs, *The Validity of the Greenland Agreement*, 35 AM. J. INT'L L. 506, 506 (1941).

378. *Id.*

maintain “exclusive jurisdiction”) and conduct military operations as it may wish.³⁷⁹

The backdrop for the Greenland Treaty was Danish powerlessness against the Nazi juggernaut. But the strategic importance of the treaty did not become evident until soon after the downfall of the *Wehrmacht* and Hitler’s regime, when a new confrontation began.³⁸⁰ In this rapidly emerging war of containment and deterrence against the Soviet Union, Washington and Copenhagen were again allies with a relationship of dramatically unequal military strength.³⁸¹ In this context, and with the emergency of the North Atlantic Treaty Organization, the Greenland Treaty quickly became the framework for the exercise of U.S. military power in the region, and, more importantly, for the implementation of its nuclear deterrent warfighting strategy.

B. *The Last Kings of Thule*

In 1950–1951, French anthropologist Jean Malaurie lived among the Thule Inuit (“the Polar Eskimos of the Thule district in northern Greenland”), an “exemplary,” “modest and proud” people who taught Malaurie “that a man’s life should be a constant challenge that enables him to become what he truly is.”³⁸² Maintaining a subsistence hunting economy in an isolated harsh Arctic environment, the Thule Eskimos had long kept apart from the Danish (and even Inuit) inhabitants of southern Greenland’s villages and emerging market towns.³⁸³ In 1950, their entire population consisted of 302 human beings, including approximately 70 hunters who provided animals for the community to eat and prepare furs for sale on the world market.³⁸⁴

By coincidence of fate, Malaurie lived with the Thule Inuit at the precise moment when their lives were irrecoverably changed by the

379. *Id.* at 507.

380. See TAAGHOLT & HANSEN, *supra* note 374, at 27–28 (discussing U.S. and Danish interests in Greenland after World War II).

381. See *id.* (noting the concern of the United States to prevent the Soviet Union from securing control of Greenland and the shift in Danish security policy from neutrality to membership in NATO).

382. MALAURIE, *supra* note 5, at xv–xvi.

383. *Id.* at 119.

384. *Id.* at 119–20.

Seventy-odd hunters in this isolated society of Polar Eskimos supplied, ad valorem, around \$23,000 on the world fur market, or \$330 per hunter per year. In return, however, this group received an average yearly income of only a little more than \$12 per hunter, out of which had to be deducted the cost and depreciation of materials and tools (wood and thwarts for sledges, rifles, cartridges) and overall production costs.

sudden, unexpected arrival of U.S. officials, soldiers, and technicians into the region, an encounter captured in Malaurie's ethnographic memoir of his life with these people, *Les derniers rois de Thulé*.³⁸⁵ "Thousands and thousands of Americans," Uutaaq [an old Inuit man] said in his hoarse voice. "Amerlaqaat, you lose track of how many. They come down from the sky every day. There's the atomic bomb, too. . . . We've been here a thousand years, we Inuit. We always thought Thule was an important place on the earth. . . ." ³⁸⁶

Malaurie soon confirmed the rumors.³⁸⁷ Meeting with suspicious Air Force commanders (who were, as one might imagine, extremely surprised to see an educated Frenchman amidst the local natives), Malaurie was briefed about the previously top secret *Operation Blue Jay*.³⁸⁸ At an annual cost in an amount of "more than double Denmark's expenditures for the whole of Greenland since 1721," the U.S. had just launched "what was said to be the biggest military enterprise since the Allied landings in Normandy."³⁸⁹ It transformed "a valley three miles wide and nine miles long, at one end terminated by a glacier, and at the other end closed off by the sea," an expanse of tundra "frozen nine months out of twelve," into "the Strategic Air Command's most powerful atomic base."³⁹⁰ It was a massive, self-contained American city of bombers, gigantic trans-Arctic radar systems, water and power utilities, sports facilities, entertainment centers, and other amenities to help make Arctic-stationed servicemen feel at home.³⁹¹ In sum, it was a polar atomic metropolis of gargantuan size and capacity, but a simple name, *Thule AFB*.³⁹² And so it remains today.³⁹³

385. *Id.* at 383–95.

386. *Id.* at 384.

387. *Id.* at 388.

388. *Id.* at 388–89.

389. *Id.*

390. *Id.*

391. *Id.* at 389. Some examples of projects either envisioned or under way include:

the movie theater; the electric system and its generating station; the telephone system . . . a restaurant; an ultramodern hospital; the largest distillery of sea water in the world (at first water had been taken from beneath a nearby lake, which had soon gone dry); a model laundry, a tunnel beneath the ice cap; pillboxes in the ice, and a library.

Id.

392. See Hayton, *supra* note 369, at 748 (1958) (describing the valuable, "huge Thule AFB"). While the legal basis of the Thule AFB lease and construction follows the 1941 Greenland Treaty, it was approved by a further Soviet-directed "common defense" agreement between Copenhagen and Washington dated April 27, 1951. *Id.* at 748 n.8.

393. Thule AFB has been reassigned from the Strategic Air Command to the U.S. Air Force Space Command. TAAGHOLT & HANSEN, *supra* note 374, at 57. According to the Thule AFB website, "Air Force Space Command, created Sept. 1, 1982, is a major command headquartered at Peterson Air Force Base, Colo. AFSPC defends

In 1953, pursuant to the construction of the Thule AFB and its security perimeter, the Thule Inuit among whom Malaurie had lived were evicted from their homes and hunting grounds (although they received more cash than they had ever before seen in their lives). They were resettled by the Danish government in a forced relocation noted by a simple public statement: a 1954 announcement by the Denmark's Minister of Greenland that "the Polar Eskimos had decided to move 125 miles to the north to Qaanaaq, on the edge of the Murchison Strait."³⁹⁴

C. Nuclear Trajectories

Why Thule, and why the enormous scale? The answer follows naturally from the specific geographical, technical, and mathematic challenge the United States and its NATO allies sought to address. According to Danish security scholars Jorgen Taagholt and Jens Claus Hansen, "[t]he United States had a requirement for base facilities that would make it possible to carry out strategic bombing missions inside the Soviet Union with only one airborne refueling per mission."³⁹⁵

Actually, this problem had previously been solved. In an essay in the 1958 *American Journal of International Law*, Robert Hayden

North America through its space and intercontinental ballistic missile operations—vital force elements in projecting global reach and global power." Thule Air Base, Welcome, <http://www.thule.af.mil/main/welcome.asp> (last visited Oct. 4, 2009). In turn,

[t]he [AFSPC's] ICBM force consists of Minuteman III missiles that provide the critical component of America's on-alert strategic forces. As the nation's 'silent sentinels,' ICBMs, and the people who operate them, have remained on continuous, around-the-clock alert since 1959 - longer than any other U.S. strategic force. More than 500 ICBMs are currently on alert in reinforced concrete launch facilities beneath the Great Plains.

Id. The website identifies Thule AFB as the home of the 821st Air Base Group of the U.S. Air Force, and sets out the mission of each. *Id.* "The mission of the United States Air Force is to *fly, fight and win* . . . in air, space and cyberspace." *Id.* "The mission of the 821st Air Base Group is to effect space superiority through Air Force Core Values-based installation operations and protection. The group operates and maintains Thule Air Base in support of missile warning and space surveillance and satellite command and control operations missions." *Id.* Today, Thule AFB is also the home of the 12th Space Warning Squadron, which "operates the Ballistic Missile Early Warning System—Site I (BMEWS)." Thule Air Base, 12th Space Warning Squadron, <http://www.thule.af.mil/library/factsheets/factsheet.asp?id=4886> (last visited Oct. 4, 2009). "BMEWS is an AN/FPS-120, two-sided, solid-state, phased-array radar system (SSPARS) used to perform multiple missions. The primary mission of BMEWS Site I is to provide early warning of Intercontinental Ballistic Missile (ICBM) and Sea Launched Ballistic Missile (SLBM) attacks against the continental United States and Canada." *Id.*

394. MALAURIE, *supra* note 5, at 395; *see also* TAAGHOLT & HANSEN, *supra* note 374, at 34–35 (discussing the forced relocation).

395. TAAGHOLT & HANSEN, *supra* note 374, at 32.

comments on the strategic rationale for the recent Congressional approval of Alaskan statehood.³⁹⁶ Noting that the Alaska Command was activated January 1, 1947, at the birth of the Cold War, Hayton recalls that the Army's Alaskan "Arctic School" has already "trained hundreds for service under the harsh circumstances of the region."³⁹⁷ But Alaska's greatest importance corresponds to its unique proximity to Siberia across the Bering Strait (i.e., the 56-mile line on the earth's surface where aboriginal peoples once walked from Siberia to North America).³⁹⁸ Twelve thousand years later, "in less than twenty seconds a plane of either side can transit the five-mile patch of water between Little Diomedede Island (U.S.) and Big Diomedede Island (USSR)."³⁹⁹

Of course no one in Washington or Moscow had any interest in bombing either of the Diomededes, on which only a small population of Inupiat Eskimos resided. Hayton's point was a much bigger one: both Soviet and American nuclear strategy required that warhead payloads on land-based missiles and air command bombers be delivered across the shortest distance possible.⁴⁰⁰ Thus, "anyone today not conversant with 'the Polar concept' is out of touch with long-range aerial navigation and political geography, not to mention modern weapons systems."⁴⁰¹ The logic of the globe's shape, and the absence of any Arctic buffer zone remotely equivalent to the Atlantic Ocean, required that nuclear targeting follow the map. However, this in turn increases the dangers and risks of nuclear attack:

Polar deployment of missile striking forces converts present intermediate-range ballistic missiles into actual intercontinental missiles because of the reduced distance. The time between launching from an Arctic base to arrival on target, say in the United States, is less than thirty minutes.⁴⁰²

Thus, "[s]ince strategists estimate that an attack on the United States by the Soviet Union would most likely be launched across the Arctic, North Polar defense measures . . . have been given high priority by the Joint Chiefs of Staff out of sheer military necessity."⁴⁰³ Such "defense measures" included the U.S.-Canada joint "Distant early warning line" (the DEW line), an extensive circumpolar system of "radar stations placed every thirty miles from Alaska to Iceland at about latitude 63°," an engineering feat of comparable immensity to

396. Hayton, *supra* note 369, at 746.

397. *Id.*

398. John J. Teal, *Alaska, Fulcrum of Power*, *supra* note 373, at 86.

399. Hayton, *supra* note 369, at 747.

400. *See id.* at 746-47 (discussing the possibility of flight across the Arctic).

401. *Id.*

402. *Id.* at 749.

403. *Id.* at 747.

the construction of Thule AFB.⁴⁰⁴ But in nuclear war deterrence planning, the certainty of mass-obliteration by nuclear weapon attack blurred the line between defensive and offensive measures and still does.⁴⁰⁵

This explains the strategic location of the Thule base. Equipped with the Army's most advanced telecommunications technologies (including "a radio tower higher than the Eiffel Tower" and perhaps the largest and most powerful detection radar systems in the world⁴⁰⁶), Thule AFB enabled the U.S. Strategic Command to receive sufficiently early warning of incoming transpolar nuclear attack and then to take necessary action within short flight paths to large Soviet targets.⁴⁰⁷ As explained by geographer Trevor Lloyd in another contemporary commentary, the DEW system "will provide defenders with possibly 15 minutes warning of the arrival of missiles and will

404. MALAURIE, *supra* note 5, at 463. The American engineer Lloyd Berkner described the purposes of the DEW in a 1953 speech:

[i]f we can economically exploit the thousands of miles between the distant warning line and our target system, we can acquire real advantage. We can track the enemy to assess his probable intentions and the composition of his forces. We can break up formations over the sea or uninhabited land wastes with atomic weapons.

Lloyd Berkner, Science and Military Power, Remarks at the National Conference of Editorial Writers (Oct. 17, 1953), *cited in* Matthew Farish, *Frontier Engineering: From the Globe to the Body in the Cold War Arctic*, 50 CAN. GEOGRAPHER 177, 184 (2006). Farish notes: "Rarely mentioned were the repercussions these scenarios would have for the people who had already made the north their home; one commentator went so far as to suggest that Arctic war, admirably, promised 'no devastated cities, no ruined civilizations, no millions of starving refugees and displaced persons.'" Farish, *supra*, at 184 (quoting P.H.H. Bryan, *War in the Arctic*, 1948 ARMY Q. 56, 102). The successful construction of the DEW line, a joint Canadian-U.S. project, "was an extraordinary feat of geographical engineering, planned and sequenced in minute detail. As a Canadian journalist put it, the finished product was 'a monument to the ingenuity and hardihood of the North American human being.'" *Id.* at 186 (quoting Ralph Allen, *Will Dewline Cost Canada Its Northland?*, MACLEAN'S, May 26, 1956, at 17).

405. See, e.g., MCGEORGE BUNDY, DANGER AND SURVIVAL: CHOICES ABOUT THE BOMB IN THE FIRST FIFTY YEARS 565 (1988) (describing President Carter's strategy of deterring Soviet attack by publicizing the destructive capabilities of American offensive weapons, such as the Poseidon submarine).

406. MALAURIE, *supra* note 5, at 389.

407. See Teal, *Greenland and the World Around*, *supra* note 256, at 141 ("England, Germany, and much of the territory of the Soviet Union are equidistant from it [Thule] and within easy flying range."). The strategic logic of the Thule base was outlined at the very outset of the Cold War by John J. Teal in the 1948-49 volume of FOREIGN AFFAIRS: "[a]ir warfare has in the last seven years exorcised the illusion of American isolation and shattered the traditional concept of oceanic security." Teal, *Alaska, Fulcrum of Power*, *supra* note 373, at 90. "Security' now has meaning primarily in relation to defense against northern or trans-polar attack." *Id.* From this perspective, "[a] base in the extreme north of Greenland would bring Moscow, Berlin and London within an identical 2,400-mile range. At the same time, an air base in this glacier-free part of Greenland could be coordinated with Alaskan fortifications only 1,700 miles away to intercept attacks from any possible enemy." *Id.*

permit deterrent, presumably offensive, forces to attack targets on the Soviet side of the pole.”⁴⁰⁸

The Thule bombers would be informed, able, and ready to enter the picture. “From Thule to Moscow is a mere 2,800 miles, little more than the airline distance from New York to San Francisco, while Chicago is only about 500 miles more from the nearest Soviet arctic base.”⁴⁰⁹ Even by 1958, “[m]issiles (which do not of course need to return home) already exist[ed] which can reach their targets by using the great circle routes across the polar basis.”⁴¹⁰

The official purpose of keeping bombers in the air and missiles aimed and ready for delivery is deterrence.⁴¹¹ But accidents and mistakes happen, even at the height of nuclear confrontation. On Saturday, October 27, 1962, four nail-biting days into the Cuban Missile Crisis, President Kennedy and his ExComm advisors received a report that a U.S. U-2 spy plane

from a SAC base in Alaska, presumably on a “routine air-sampling mission” to check on nuclear testing, had accidentally strayed into Soviet air space. MiGs scrambled to intercept, but no shots were fired, and the plane returned to base escorted by U.S. fighters equipped with nuclear air-to-air missiles.” [U.S. Secretary of Defense Robert] McNamara reportedly shouted when informed, “This means war with the Soviet Union!”⁴¹²

On January 21, 1968, one of the worst nuclear accidents of the Cold War occurred at the Thule base.⁴¹³ As an official 1986 report on “DoD nuclear mishaps” prepared by the U.S. Defense Nuclear Agency documents, a B-52 “crashed and burned approximately 7 miles southwest of the runway at Thule AB, Greenland, while approaching the base to land.”⁴¹⁴ The plane blew up into flames, killing one of the crew members.⁴¹⁵ “The bomber carried four nuclear weapons, all of which were destroyed by the fire,” dumping radioactive contamination of “an unknown amount” on the sea ice.⁴¹⁶ A four-month clean-up operation ensued, leading to the removal of some

408. Trevor Lloyd, *Open Skies in the Arctic*, 14 INT’L J. 42, 47 (1958).

409. *Id.* at 46.

410. *Id.*

411. See Robert G. Joseph, *Nuclear, Biological and Chemical Deterrence and Defense*, in AIR/MISSILE DEFENSE, COUNTERPROLIFERATION, AND SECURITY POLICY PLANNING 39, 42 (Jacqueline K. Davis et al. eds., 1999) (discussing the theories underlying deterrence and the threat of retaliation as its “central element”); e.g., *supra* note 405 and accompanying text (discussing deterrence strategy).

412. SHELDON M. STERN, *THE WEEK THE WORLD STOOD STILL: INSIDE THE SECRET CUBAN MISSILE CRISIS* 156–57 (2005).

413. H.L. Reese, *DoD Nuclear Mishaps*, 1986 ARMED FORCES RADIOBIOLOGY RES. INST. SPECIAL REP. 16 (1986).

414. *Id.*

415. *Id.*

416. *Id.*

"237,000 cubic feet of contaminated ice, snow, water, and crash debris."⁴¹⁷

D. *A Private Sea*

"Control of the seas is a primary mission of the U.S. Navy," explains Vice Admiral John H. Nicholson, USN (Ret.) in 1999.⁴¹⁸ "Most seas can be controlled by combinations of ships, submarines, and aircraft, but the ice-covered Arctic can only be controlled by nuclear submarines."⁴¹⁹ For this reason Dr. Waldo Lyon, the leading architect of U.S. nuclear submarine policy from the late 1950s to the mid-1970s, could with confidence reflect: "The Arctic Ocean is the submariner's private sea. Hence, his sole capability to exploit and control."⁴²⁰ In this context,

[t]he U.S. Navy is now planning for the possibility of inter-fleet and fleet-to-mainland, nuclear-missile warfare in Arctic waters Nuclear submarines passing under the ice from either side may approach to within several hundred miles of vital targets while still submerged in sub-Arctic waters (for example, Hudson's Bay) and discharge Polaris-type missiles with devastating effect.⁴²¹

In an effort to fight off domestic critics of his supposed weakness on nuclear defense issues, President Carter in 1979 made it clear exactly what kind of effect was being suggested, stating that the nuclear weapons on just *one* of the many Poseidon submarines the U.S. maintained in operation under the Arctic Sea (or other waters) at any given moment day or night had the capacity to "destroy every large- and medium-sized city in the Soviet Union."⁴²²

But there was a problem: The Soviets arrived at the same conclusions for the same reasons. The Soviet Navy also shared the same primary mission, comparable technology to enable sustained travel below the surface of the frozen Arctic Sea, and a roughly equivalent capacity to inflict mass destruction.⁴²³ Hence, the "security dilemma" of the Arctic Sea led to an unceasing game of cat and mouse below the polar ice.⁴²⁴ "Warfare in the ice is like jungle

417. *Id.*

418. John H. Nicholson, *Foreword* to WILLIAM M. LEARY, *UNDER ICE: WALDO LYON AND THE DEVELOPMENT OF THE ARCTIC SUBMARINE*, at xi (1999).

419. *Id.*

420. *Id.* at 205.

421. Hayton, *supra* note 369, at 749.

422. BUNDY, *supra* note 405, at 565 (quoting President Carter).

423. *See id.* at 559–60 (discussing Soviet nuclear doctrine and deployments of nuclear weapon systems between 1965 and 1975).

424. *See* LEARY, *supra* note 418 at 255 ("While there would be no problem in locating and attacking an enemy submarine that was moving under the ice pack in the arctic basin, this marginal sea ice zone, with its confused sonar conditions, afforded a hiding submarine a clear tactical advantage.").

warfare," Lyon emphasized.⁴²⁵ "The sea-ice canopy becomes the jungle in which the submarine must live, work, and fight—not just transit."⁴²⁶

The central role played by the Arctic submarines in the nuclear triad of each adversary's arsenal relates to the extreme difficulty in achieving a first-strike against the hidden subs in the vast under-ice waters.⁴²⁷ The "survivability" of these subs meant that they could respond to any nuclear attack carried out by bombers, ICBMs, or other submarines belonging to the other side.⁴²⁸ In the case of the Soviets, to ensure that a responding attack would succeed even if a primary strike had wiped out land-based command and control centers in the Soviet Union, nuclear submarine commanders deep underwater had authority to make the final decision to launch nuclear weapons.⁴²⁹

This in turn led scientists on each side to pursue heroic efforts to improve the capacity of nuclear submarines to detect, track, target, and attack submarines of the other side.⁴³⁰ Adm. Kinnard McKee put it simply, in Congressional testimony: "There is nothing that can work against a submarine under the ice except another submarine."⁴³¹ On this basis, President Ronald Reagan initiated a new Maritime Strategy, under which "U.S. carrier battle groups, preceded and accompanied by some fifty attack submarines, would be sent into the Norwegian Sea."⁴³² If this show of force failed to deter a Soviet response, chief of naval operations Admiral James Watkins announced, "[W]e will wage an aggressive campaign against all Soviet submarines, including ballistic missile submarines."⁴³³

Actually, however, there *were* in fact other things that could work against an under-ice submarine: disaster, fire, insanity, the unimaginable pressures of living for long periods confined in such an isolated, cramped, and inhuman environment, accidents of one kind or another, a myriad of life-threatening hazards under the ice, and

425. *Id.* at 256.

426. *Id.*

427. *See supra* note 424 and accompanying text.

428. *See generally* LEARY, *supra* note 418 (detailing the development of submarines capable of functioning in the icy arctic, detecting and carrying out first strikes against enemy subs, and adequately responding to attack).

429. GARY E. WEIR & WALTER J. BOYNE, *RIISING TIDE: THE UNTOLD STORY OF THE RUSSIAN SUBMARINES THAT FOUGHT THE COLD WAR 4* (2003).

430. *See, e.g.*, LEARY, *supra* note 418, at 255–56 (discussing the U.S. Nuclear Propulsion Program's effort to make such improvements to 688-class submarines, including enhanced sonar and communication devices).

431. *Id.* at 255.

432. *Id.* at 254–55.

433. *Id.* at 255.

the ice itself.⁴³⁴ On July 4, 1961, for example, a nuclear melt-down on the Soviet submarine K-19 boiled its crew members in extreme levels of radiation.⁴³⁵ On April 10, 1963, the USS nuclear submarine *Thresher* fell below crush-depth, killing all 129 sailors on board.⁴³⁶ On August 12, 2000, *Kursk*, Russia's super-submarine, exploded and sank in the Barents Sea outside the city of Mumansk, killing 118 Russian sailors and officers.⁴³⁷

Meanwhile, the Soviets used Arctic waters and lands as private nuclear testing grounds and dumping basins.⁴³⁸ Between 1955 and 1990, the Soviets detonated 132 nuclear bombs at the Arctic Sea archipelago of Novaya Zemiya.⁴³⁹ According to the Norwegian Bellona Foundation in a 2001 report on "The Arctic Nuclear Challenge," "[t]he combined explosive force of the 132 bombs tested at Novaya Zemiya is 470 megatons of TNT, or 94% of the combined explosive force of all [715] Soviet nuclear detonations."⁴⁴⁰ Moreover, "[s]ince 1959, the [Soviet] Northern Fleet has dumped radioactive waste into the Barents Sea and Kara Sea on a regular basis. All kind of radioactive waste is dumped, including solid radioactive waste, liquid radioactive waste, and nuclear reactors with and without fuel."⁴⁴¹ In addition, "[t]he overhanging danger of accidents and radioactive leakage from laid-up [Soviet-era] nuclear power submarines and run-down storage sites for spent nuclear fuel and radioactive waste increases from year to year."⁴⁴²

E. A Nuclear-Free Arctic?

In April 1958, the United States made a proposal to the Soviet Union calling for a nuclear weapons "inspection system covering all the area within the Arctic Circle together with a sector in the North Pacific region extending east as far as the 140° W. meridian, west as far as the 160° E. meridian and south to the line of 50° N. latitude,"

434. See, e.g., National Geographic, Major Submarine Disasters, http://www.nationalgeographic.com/k19/disasters_main.html (last visited Oct. 4, 2009) (indexing major submarine disasters in the North Atlantic).

435. National Geographic, K-19: The History, <http://www.nationalgeographic.com/k19/index.html> (last visited Oct. 4, 2009).

436. National Geographic, Major Submarine Disasters, *Thresher*: Going Quietly, http://www.nationalgeographic.com/k19/disasters_detail2.html (last visited Oct. 4, 2009).

437. *Remnants of Kursk Submarine Thrown on Scrapheap*, RUSSIA TODAY, Apr. 3, 2009, http://russiatoday.com/Top_News/2009-04-03/Remnants_of_Kursk_submarine_thrown_on_scrapheap.html/print.

438. See generally Nils Bohmer et al., *The Arctic Nuclear Challenge*, 3 BELLONA REP. ch. 4 (2001) (discussing Russian dumping and testing in the Arctic).

439. *Id.* ch. 4, § 2.

440. *Id.*

441. *Id.*

442. *Id.* ch. 1.

plus “the remainder of Kamchatka and the islands extending south of it toward Japan.”⁴⁴³ Arguably, the U.S. had offered to establish a “nuclear weapons free zone” in the entire circumpolar region, in partnership with the Soviet Union, with mutual inspection as the enforcement mechanism.⁴⁴⁴ Amazingly, the American offer covered U.S. nuclear bases in Alaska and, most importantly, the Thule base in Greenland.⁴⁴⁵ Why did the U.S. offer to open its core strategic Arctic bases to Soviet inspections? One explanation may have related to the far more expansive Russian Arctic nuclear capability, compared to the United States; this same reason may best explain why the USSR rejected the American offer.⁴⁴⁶

Or perhaps, in an era of larger UN disarmament proposals, the U.S. truly understood that the grave dangers and catastrophic risks of the nascent atomic age could be far more effectively managed by agreement than by treating the Arctic as a vast nuclear frontier.⁴⁴⁷ UN Secretary Dag Hammarskjöld broke the precedent of Cold War “neutrality” to endorse the U.S. proposal, and he was right to do so, even in the face of Soviet claims to Cold War partisanship.⁴⁴⁸ We know now that Stalin was at that time determined to keep up with U.S. thermonuclear weapons advances and deployments at all costs.⁴⁴⁹

But on October 1, 1987, the USSR made a stunning about-face. In his most important speech on Arctic issues, given in Murmansk

443. Lloyd, *supra* note 408, at 47–48.

444. See *id.* at 48 (“In effect it takes the example of Spitsbergen—which is already demilitarized—and extends it to all arctic areas.”).

445. *Id.*

446. In 1955, President Eisenhower launched the “Open Skies” initiative to enable mutual aerial observation between the United States and the Soviet Union. Eisenhower’s “open skies” vision remained unrealized until after the collapse of the Soviet Union. On January 1, 2002, with the entry into force of The Treaty on Open Skies, the United States and the Russian Federation joined among thirty-four States Parties in a regime of unarmed aerial observation flights over the territory of each member state. See <http://www.state.gov/t/vci/trty/102337.htm>. This treaty enables observation flights over territories in the Alaskan and Siberian Arctic, thereby addressing in part concerns underlying Eisenhower’s 1958 Arctic initiative, Open Skies Treaty, U.S. Department of State, Bureau of Verification, Compliance, and Implementation Fact Sheet, May 18, 2009, <http://www.state.gov/t/vci/rls/123551.htm>, but presumably with a much less rigorous and comprehensive nuclear weapons inspection system for the Arctic region specifically than that envisioned by Eisenhower’s 1958 proposal.

447. Cf. John J. Noble, *The Open Skies Treaty Initiative: Prospects for an Agreement and Precedent*, in FROM COEXISTENCE TO COOPERATION: INTERNATIONAL LAW AND ORGANIZATION IN THE POST-COLD WAR ERA 44, 47–48 (Edward McWhinney et al. eds, 1991) (stressing the openness and transparency gained from agreement).

448. See Lloyd, *supra* note 408, at 47.

449. See generally Joseph Cirincione, *A Brief History of the Nuclear Age*, GLOBALIST, Dec. 13, 2005, <http://www.theglobalist.com/StoryId.aspx?StoryId=4968> (noting that after Hiroshima, Stalin told his scientists to “[b]uild the bomb – it will remove the great danger from us” launching the start of the nuclear arms race.).

("the capital of the Soviet Polar Region"), Secretary General Mikhail Gorbachev decried the U.S. and NATO militarization of the Arctic, including the testing of U.S. cruise missiles; the operationalization of a new "star wars" radar station at the Thule AFB; the expansion of U.S. and NATO military activity "in areas adjoining the Soviet Polar Region." In response, reversing the core principles that had shaped Soviet Arctic security policy since the end of World War II, Gorbachev called for "a radical lowering of the level of military confrontation in the region. Let the north of the globe, the Arctic, become a zone of peace."⁴⁵⁰ Specifically, Gorbachev called for the establishment of "a nuclear-free zone in northern Europe."⁴⁵¹

If such a decision were adopted, the Soviet Union, as has already been declared, the Soviet Union, as has already been declared, would be prepared to act as guarantor. It would depend on the participating countries how to formalize this guarantee; by multilateral or bilateral agreements, governmental statements or in some other way . . . We would go so far as to remove submarines equipped with ballistic missiles from the Soviet Baltic Fleet.⁴⁵²

Gorbachev went even further, declaring the USSR's endorsement of "the initiative of Finland's President Mauno Koivisto on restricting naval activity in the seas washing the shores of northern Europe."⁴⁵³ He called for a wide variety of path-breaking measures: to limit "rivalry in anti-submarine weapons"; to ensure "notification of large naval and airforce exercises"; to invite representatives from all countries to participate as observers; to negotiate prohibitions on "naval activities in mutually agreed-upon zones of international straits and in intensive shipping lanes in general"; and to promote urgently-needed intensive transnational cooperation in Arctic ecosystem protection, including conservation of Arctic forests, tundra and marine environments.⁴⁵⁴

This time, however, it was the United States (and its NATO allies) that declined the disarmament and nuclear threat reduction offer. They cited a familiar litany of enforcement and verification issues; they questioned the effectiveness of a regional approach; and they expressed concern that a Northern European nuclear weapons-

450. Mikhail Gorbachev, Speech at the Presentation of the Order of Lenin and the Gold Star Medal to the City of Murmansk (Oct. 1, 1987), in *THE SOVIET MARITIME ARCTIC* 307 (Lawson W. Brigham ed., Naval Inst. Press 1991).

451. *Id.*

452. *Id.* at 307-08.

453. *Id.* at 308.

454. *Id.* at 308-09. Ronald Purver called the package of proposals set out in Gorbachev's Murmansk speech "no less than a revolution" in Soviet Arctic policies." Kristian Atland, *Mikhail Gorbachev, the Murmansk Initiative, and the Desecuritization of Interstate Relations in the Arctic*, 43 *COOPERATION AND CONFLICT* 289, 290 (2008) (quoting Ronald Purver, *Arctic Security: The Murmansk Initiative and Its Impact*, 11 *CURRENT RES. ON PEACE & VIOLENCE* 147, 148 (1988)).

free zone could be “destabilizing for other regions.”⁴⁵⁵ In the atmosphere of Cold War hostility and distrust, Gorbachev’s northern Europe nuclear free-zone initiative was greeted by its NATO audience with what social psychologist Lee Ross has called “reactive devaluation” (i.e., “the fact that the very offer of a particular proposal or concession—especially if it comes from an adversary—may diminish its apparent value or attractiveness in the eyes of the recipient”).⁴⁵⁶ Likewise, Gorbachev’s related proposals to constrain each side’s naval activities and demilitarize northern seas “were largely perceived in the West as ‘intended to produce a unilateral Soviet advantage.’”⁴⁵⁷ In the end, Gorbachev’s Murmansk initiative fell by the wayside of history, like the proposals exchanged at the U.S.–Soviet summit a few months earlier in Reykjavik, Iceland (October 11–12, 1986), when Gorbachev and U.S. President Ronald Reagan came excruciatingly close to reaching an agreement to eliminate all strategic offensive nuclear weapons in each nation’s respective arsenal within ten years.⁴⁵⁸

455. Atland, *supra* note 454, at 297 (quoting Joe Clark, *Cooperation Crucial to Northern Development*, 1988 DISARMAMENT BULL. 22, 24 (Can.)). Moreover, Atland notes that “Gorbachev’s nuclear weapons-free zone proposal did not include the whole or parts of the Arctic Ocean. For the Soviet Union, as well as for the United States, this was still an important arena for strategic submarine operations, and neither of the two countries had plans for withdrawing their nuclear submarines from the Arctic theatre.” *Id.* at 298.

456. Lee Ross, *Reactive Devaluation in Negotiation and Conflict Resolution*, in BARRIERS TO CONFLICT RESOLUTION 27, 28 (Kenneth Arrow et al. eds., W.W. Norton & Co. 1995).

457. Atland, *supra* note 454, at 299 (quoting Dan Hayward, *Gorbachev’s Murmansk Initiative: New Prospects for Arms Control in the Arctic?*, 16 N. PERSP. 9, 11 (1989)).

458. See Tim Reid, *How Reagan and Gorbachev Made a Real Breakthrough in the Arms Race*, TIMES (London), Feb. 4, 2009, http://www.timesonline.co.uk/tol/news/world/us_and_americas/article5655137.ece (noting that a key breakthrough in the arms reductions culminated with the Reykjavik Summit between the U.S. and USSR). Tragically, the failure of the Reykjavik summit was caused by a single, remaining sticking point: the *form* in which the Reagan Administration would be permitted to continue pursuing its “Strategic Defense Initiative” (SDI, popularly called “star wars”) during the proposed ten-year nuclear disarmament period. SANFORD LAKOFF & HERBERT F. YORK, A SHIELD IN SPACE: TECHNOLOGY, POLITICS, AND THE STRATEGIC DEFENSE INITIATIVE 205 (Univ. of Ca. Press 1989). After rejecting all SDI research and development programs on the grounds of their destabilizing effect, particularly during the sensitive disarmament process, Gorbachev returned with an offer to permit “laboratory testing” of SDI by the Pentagon. *Id.* at 206–07. Talks ended when Reagan rejected Gorbachev’s concession, insisting on the right to test SDI in space. Lou Cannon, *Reagan-Gorbachev Summit Talks Collapse as Deadlock on SDI Wipes Out Other Gains*, WASH. POST., Oct. 13, 1986, at A01, available at <http://www.washingtonpost.com/wp-srv/inatl/longterm/summit/archive/oct86.htm>. Previously classified U.S. and Soviet documents concerning the Reykjavik summit, as well as negotiation transcripts, are available at The National Security Archive, The Reykjavik File: Previously Secret Documents from U.S. and Soviet Archives on the 1986 Reagan-Gorbachev Summit, <http://www.gwu.edu/~nsarchiv/NSAEBB/NSAEBB203/index.htm> (last visited Oct. 4, 2009).

The Russian Federation and the United States have significantly reduced their nuclear arsenals since the height of the Cold War.⁴⁵⁹ But, thermonuclear weapons are so extraordinarily lethal that each nation still retains sufficient capacity to obliterate the other many times over.⁴⁶⁰ Russia and the United States both maintain land-based intercontinental ballistic missiles (ICBMs), submarine-launched and submarine ballistic missiles (SLBMs), and bombers targeting each other's nation from beneath the Arctic Sea or across Arctic skies—all of which are ready to launch at a minute's notice or less.⁴⁶¹ The U.S. nuclear base at Thule remains in full operation; so

459. See generally National Resources Defense Council, Figure of U.S./USSR Russian Nuclear Stockpile, 1945–2002, <http://www.nrdc.org/nuclear/nudb/dafig11.asp> (last visited Oct. 4, 2009) (graphing U.S. and Russian stockpiles of nuclear weapons).

460. See Robert S. Norris and Hans M. Kristensen, *Nuclear Notebook: Russian Nuclear Forces, 2009*, BULL. ATOMIC SCIENTISTS, May–June 2009, at 55–56 (Russia retains the largest nuclear arsenal in the world, with roughly 13,000 nuclear weapons—approximately 4,830 nuclear warheads in its operational arsenal and an additional 8,150 in reserve or awaiting dismantlement); U.S. State Dep't, *Bureau of Verification, Compliance and Implementation*, 2008 AN. REP. IMPLEMENTATION MOSCOW TREATY 2 (2008), cited in Robert S. Norris and Hans M. Kristensen, *Nuclear Notebook: U.S. Nuclear Forces, 2009*, BULL. ATOMIC SCIENTISTS, Mar.–Apr. 2009, at 59, 59 (According to the official public accounting of the United States Department of State, the “number of U.S. operationally deployed strategic nuclear warheads was 2,871 as of December 31, 2007.”). An April 1, 2009 joint declaration by U.S. President Obama and Russian President Medvedev promised negotiations seeking to achieve further strategic nuclear weapons reductions to numbers below the previously-agreed limits of 2,200 warheads. Norris & Kristensen, *Nuclear Notebook: U.S. Nuclear Forces, 2009*, *supra*, at 59–60; see also Jim Garamone, *Global Strike Command Will Stress Nuclear Mission*, Aug. 7, 2009, <http://www.thule.af.mil/news/story.asp?id=123162380> (noting an announcement made by U.S. Air Force Secretary Michael B. Donley that “a key step in reinvigorating the Air Force's nuclear deterrence mission will be made today with the activation of the service's Global Strike Command at Barksdale Air Force Base, La.”). The Air Force's strategic missile organization will come under the new command in December 2009, and “the 8th Air Force, the bomber component, will come under the command in April [2010].” *Id.* According to Secretary Donley, the role of the new command is to “organize, train and equip America's ICBMs and nuclear-capable bombers, and prepare a cadre to do this important work with passion and professionalism.” *Id.*

461. See Norris & Kristensen, *Nuclear Notebook: Russian Nuclear Forces, 2009*, *supra* note 460 (giving an objective analysis of Russian and U.S. land, air, and sea-based Russian and U.S. nuclear weapons systems); Norris & Kristensen, *Nuclear Notebook: U.S. Nuclear Forces, 2009*, *supra* note 460 (same). The first issue of THE BULLETIN OF ATOMIC SCIENTISTS launched in 1947 and has maintained a “Doomsday Clock” ever since. Bulletin of the Atomic Scientists, *Doomsday Clock*, <http://www.thebulletin.org/content/doomsday-clock/timeline> (last visited Oct. 4, 2009). The initial setting of the clock was seven minutes to midnight, and on numerous occasions it has been adjusted forward and back by the Bulletin's Board of Directors, in accordance with the assessed severity of nuclear war threats at the time. *Id.* In 1984, when Reagan-Brezhnev posturing, the development of the U.S. “star wars” missile defense initiative, and nuclear arsenal build ups caused “U.S.-Soviet relations [to] reach their icest point in decades,” the clock was set back to three minutes to midnight. *Id.* Just seven years later, with the end of the Cold War, the implementation of unilateral nuclear weapons cuts, and the ratification in both countries of the

do equivalent Russian bases throughout the Siberian Arctic and its northern ports. Each nation's bombers remain at ready alert,⁴⁶² and SLBMs still carry nuclear weapons under the Arctic ice.⁴⁶³

On March 20 1993, the USS *Graying*, a nuclear attack submarine collided into the Russian submarine it had been tracking

Strategic Arms Reduction Treaty (START), the clock was set back to 17 minutes to midnight. *Id.* The clock's current position (set in 2007 as "the world stands at the brink of a second nuclear age") is 5 minutes to midnight. *Id.*

462. *Russian Bombers Continue Routine Patrols over Atlantic, Arctic*, NOVOSTI, July 5, 2009, <http://en.rian.ru/russia/20090507/155004802.html>. "In early 2009, the head of the Russian ICBM force, Col. Gen. Nikolai Solovtsov, said '[a]t least 96 percent of all missile systems are ready for deployment within several dozen seconds,' and that this is 'the highest readiness level' within Russia's nuclear triad," Norris & Kristensen, *Nuclear Notebook: Russian Nuclear Forces, 2009*, *supra* note 460, at 56 (quoting *Russia Can Launch ICBM's at Minute's Notice – Missile Force Chief*, NOVOSTI, Feb. 11, 2009). Note, however, that Norris and Kristensen cite U.S. sources estimating that "no more than 75–80 percent of these missile systems are at this readiness level." *Id.*

463. See Willy Ostreng, *The Geostrategic Conditions of Deterrence in the Barents Sea*, in *THE SOVIET MARITIME ARCTIC*, *supra* note 450 at 201 (stating that by the mid to late 1980s, the Soviet's Arctic-based (Kola peninsula) Northern Fleet possessed two-thirds of the USSR's nuclear-ballistic-missile submarines (42 out of a total of 63), two-thirds of its submarine-launched ballistic missiles (624/928), 76 percent of its warheads (2,208/2,896), and 73 percent of the total mega-tonnage (818/1,114)). According to Taagholt's and Hansen's 2001 report, "[e]ven though disarmament has brought about a significant reduction in nuclear weapons, the number of nuclear weapons on the Kola Peninsula is almost the same." TAAGHOLT & HANSEN, *supra* note 374, at 66. Today, "Russian submarines still regularly hide beneath the thick Arctic ice cover to avoid U.S. detection. They then stage surprise sudden ascents to practice launching the nuclear missiles they carry." Jim Hoagland, *Preparing for a Sea Change*, WASH. POST, July 5, 2009, at A19, available at <http://www.washingtonpost.com/wp-dyn/content/article/2009/07/03/AR2009070301125.html>.

Despite all-out warship and submarine cutbacks [after the collapse of the Soviet Union and the end of the Cold War], the Northern Fleet still packs a more devastating punch than any other Russian fleet. It operates Russia's only aircraft carrier, the world's only nuclear-powered guided missile cruiser and the largest destroyer and anti-submarine warfare (ASW) ship units. The fleet still relies heavily on its nuclear-powered submarines, most of which are being regularly overhauled. Six Project 667 BDRM Delta IV Delfin ballistic missile submarines form the mainstay of Russia's strategic naval nuclear force. Most of the submarines have been equipped with upgraded Sineva submarine-launched ballistic missiles (SLBMs) and will remain in service for another 15–20 years. The Northern Fleet remains on active combat duty, as long as these submarines sail beneath the ice all the way to the North Pole... from where their missiles can reach 90% of the world's main economic centers.

Northern Fleet Protecting Russian Arctic, NOVOSTI, Feb. 6, 2009, <http://en.rian.ru/analysis/20090602/155147701.html>; see also Igod Kudrick, *Seems Like Russian Multi Purpose Subs Carry Nuclear Weapons*, BELLONA, Sept. 15, 2006, <http://www.bellona.org/weblog/1158346729.29> (explaining that in October 1991, Soviet President Gorbachev and U.S. President George H. W. Bush agreed to eliminate tactical (non-strategic) nuclear weapons from submarines and ships in each country's arsenal; however, the nuclear watchdog Bellona Foundation quoted a report from Russian Defense Minister Sergey Ivanov to Russian President Vladimir Putin stating that "[p]er [September 10, 2006] there are five strategic [sic] and three multi purpose submarines on combat patrol, but each of them carries nuclear weapon[s]").

in Arctic waters.⁴⁶⁴ According to Gerard DeGroot, “[t]he Grayling was following a practice established in the 1980s designed to enable, in the event of war, a sizable naval attack on the Soviet Union’s Arctic bases, in order to relieve pressure on NATO forces in Central Europe.”⁴⁶⁵ But this was two years after the collapse of the Soviet Union had officially ended the Cold War. De Groot asks: “Why had the tactic survived, if tensions had supposedly eased?”⁴⁶⁶

Unfortunately, in the subsequent years, NATO–Russian tensions have increased.⁴⁶⁷ A competitive Arctic oil “gold rush” has been threatened.⁴⁶⁸ Denmark, Norway, and Canada have each recently

464. GERARD J. DEGROOT, *THE BOMB: A LIFE* 343 (Harvard Univ. Press 2005) (2004).

465. *Id.*

466. *Id.*

467. See Per Stig Møller, Foreign Minister, Den., Address to NATO Foreign Ministers on Arctic Security Measures (Dec. 5, 2006), available at http://www.fmn.dk/Ministeren/Taler%20og%20artikler/Documents/2006/From_ice_to_fire.pdf (addressing a conference of NATO Foreign Ministers on Arctic Security Issues (“From Ice to Fire”). The Danish Foreign Minister noted: “[i]n Greenland, the Thule-base contributes to defence against intercontinental missiles. The increasing danger posed by these weapons was once again acknowledged as late as last week at the NATO-summit in Riga.” *Id.* at 4; see also Andrew Chung, *The Arctic Cold War*, TORONTO STAR, Aug. 12, 2007, <http://www.thestar.com/sciencetech/Ideas/article/245440> (discussing how to determine what law governs Arctic sovereignty and claims to territory in the wake of Russia’s claim to the North Pole seabed); Tony Halpin, *Kremlin Takes Stand on Arctic Borders*, TIMES (London), Sept. 14, 2008, at 38, available at <http://www.timesonline.co.uk/tol/news/world/europe/article4773567.ece> (noting that Russian President Dimitry Medvedev called on his security chiefs to establish a formal Russian border in the Arctic: “[w]e must wrap up all the formalities for drawing the external border in the continental shelf. This is our direct responsibility to future generations”); Bronwen Maddox, *Kremlin Carries on Playing James Bond Theme*, TIMES (London), May 14, 2009, at 35, available at http://www.timesonline.co.uk/tol/comment/columnists/bronwen_maddox/article6283108.ece (analogizing Russian “stunts” to lay claim to Arctic territory similar to James Bond; simplifying complex issues of international law and Arctic sovereignty into a “climatic race” for territory); Tim Reid, *Arctic Military Bases Signal New Cold War*, TIMES (London), Aug. 12, 2007, at 39, available at http://www.timesonline.co.uk/tol/news/world/us_and_americas/article2238243.ece (noting that a week after Russia controversially laid claim to the North Pole by “flag planting” to secure lucrative Arctic gas and oil reserves, Canada announced its intentions to establish two military bases in the region and beef up its military presence); Barry Wigmore, *Polar War Could Break Out in 12 Years*, DAILY MAIL (London), Sept. 25, 2008, <http://www.dailymail.co.uk/news/worldnews/article-1061216/Polar-war-break-12-years-scramble-oil-gas-British-think-tank-warns.html> (noting a British Think Tank Report warning that with the melting of the ice caps, easier access to oil and gas reserves underneath the Arctic could trigger a “polar war” by 2020; Russia sees the Arctic as a way to regain superpower status).

468. See James Bone, *Deadline for Claims Reveals the Great Goldrush of the Seas*, TIMES (London), May 14, 2009, at 35, available at <http://www.timesonline.co.uk/tol/news/environment/article6283114.ece> (noting that in a “scramble for mineral riches underneath the ocean,” 48 countries filed claims (and dozens others made preliminary filings) with the United Nation’s Commission on the Limits of the Continental Shelf to claim seabeds up to 350 miles from their coastlines); Paul Reynolds, *Russia Ahead in Arctic ‘Gold Rush’*, BBC NEWS, Aug. 1, 2007, http://news.bbc.co.uk/2/hi/in_depth/

announced major new defense initiatives in their northern regions.⁴⁶⁹ In sum, the militarization of the circumpolar region has been re-invigorated.⁴⁷⁰ *RIA Novosti* reports, for example, that “Russia carried

6925853.stm (stating that with the planting of the Russian flag in the North Pole to assert domain over Arctic territory, Russia is leading the way over other Arctic countries in claiming oil, gas, and mineral rights in the region).

469. Bob Weber, *Danish Northern Military Plan Raises Fears of Arctic Conflict*, YAHOO! CANADA NEWS, July 26, 2009, http://ca.news.yahoo.com/scapress/090726/world/arctic_military_buildup_1.

470. See generally National Security Presidential Directive and Homeland Security Presidential Directive: Arctic Region Policy, NSPD-66/HSPD-25 (Jan. 9, 2009), available at <http://www.fas.org/irp/offdocs/nspd/nspd-66.htm> (asserting the current Arctic Regional Policy of the United States, a directive with many components (including recognition of environmental and indigenous peoples’ concerns) within a framework emphasizing national security priorities).

The United States has broad and fundamental national security interests in the Arctic region and is prepared to operate either independently or in conjunction with other states to safeguard these interests. These interests include such matters as missile defense and early warning, deployment of sea and air systems for strategic sealift, strategic deterrence

Id. The operationalization of “strategic deterrence” is not discussed further, nor is the Arctic deployment of missile defense systems, a policy that has been strongly opposed by the Russian Federation. *Id.*; see also Jaap de Hoop Scheffer, Sec’y Gen., NATO, Security Prospects of the High North, Address to Reykjavik, Iceland NATO Meeting (Jan. 29, 2009), available at <http://www.nato.int/docu/speech/2009/s090129a.html> (“Responding to the changing environment, several Arctic Rim countries are strengthening their capabilities, and military activity in the High North region has been steadily increasing.”).

[Canadian] Coast Guard ships and land forces will participate in Operation Nanook throughout most of August Denmark plans to create an Arctic command to co-ordinate military activity in the area, which would include the use of aircraft to assert sovereignty Next April, Russia plans to drop paratroopers at the North Pole. In mid-July, two Russian submarines surfaced through ice near the North Pole and fired long-range missiles in a NORAD-monitored test. Reportedly, the Northern Fleet accounts for two-thirds of Russia’s navy. The Kremlin has stepped up patrol flights over the Arctic by giant Bear bombers and Russian President Dmitry Medvedev has said the Arctic must serve as Russia’s resource base in coming years. Russia also recently countered U.S. war exercises in Alaska with submarine drills under the Arctic ice cap. Russian officials have said the region around the North Pole is an ideal site for the launch of ballistic missiles because it allows submarines to arrive in the launch area undetected and shortens missile flight time to target In June, Sweden held its largest northern military exercise since the end of World War II. About 12,000 troops, 50 aircraft and several warships were involved in a NATO operation. The Swedes have also raised the possibility of forming a northern security alliance with Finland, Denmark, Iceland and Norway Last year, Norway purchased 48 Lockheed F-35 fighter jets partly because of their suitability for Arctic patrols. Last March, Norway participated in a major NATO Arctic military practice involving 7,000 soldiers from 13 countries in which a fictional country called Northland seized offshore oilrigs. The exercise prompted a protest from Russia. In June, Norway moved its military command to the north of the country Last August, the (United States) Coast Guard’s top official spoke

out test launches of two Sineva intercontinental ballistic missiles from two Delta IV class nuclear-powered submarines, located near the North Pole, on July 13-14 [2009].”⁴⁷¹ In this context, Washington should dust off its 1958 nuclear weapons inspection proposal, revisit Gorbachev’s Murmansk initiatives, and consider putting similar, updated offers on the table.⁴⁷²

VIII. ARCTIC HISTORY ACROSS THE *LONGUE DURÉE*

This Article has, in condensed form, identified epochs of circumpolar history, geological and human, summarized below. It has argued that the Arctic has never existed at the margins or periphery of world environmental history but at its heart. It has identified as a primary theme or motif the dramatic tension between *nunavut* and *Ultima Thule*, a recurring conflict played out in different forms throughout centuries and across polar nations and states.

A. *To the Mid-Twentieth Century*

Sixty-five million years ago (65 mya), at the start of the earth’s Cenozoic Era, there was no sea ice in the Arctic Ocean, nor was there a Greenland ice sheet.⁴⁷³ For the last thirteen to fourteen million years, sea ice has covered at least part of the Arctic Ocean.⁴⁷⁴ Between two and three million years ago (approximately 2.7 mya), extensive continental ice sheets began to develop over the North American and Eurasian Arctic, thus initiating the Quaternary ice

of a planned shift from “scientific research” to “security” and “sovereignty” in the area The Pentagon also recently held its Northern Edge war games in Alaska, involving more than 9,000 troops, warships and warplanes in simulated air combat.

Bruce Campion-Smith, *Geopolitics of the Far North*, TORONTO STAR, Aug. 9, 2009, <http://www.thestar.com/news/world/article/678473>.

471. *Russia Outwitted U.S. Strategic Defenses with Missile Test*, NOVOSTIA, July 15, 2009, http://en.rian.ru/mlitary_news/20090715/155530936.html.

472. Cf. Dmitry Medvedev, President of Russ., Address to German Government Leaders (June 8, 2008), available at http://www.norway.mid.ru/news_fp/news_fp_87_eng.html (calling for the negotiation of a new security treaty for “the Euro-Atlantic community”). Perhaps NATO member states (and NATO as an organization) can find a way to respond positively to President Medvedev’s Berlin overture with an initial focus on issues of common concern previously identified by Soviet Secretary General Gorbachev at Murmansk and by President Eisenhower in his 1958 open skies proposal. *Id.*

473. U.S. CLIMATE CHANGE SCI. PROGRAM, PAST CLIMATE VARIABILITY AND CHANGE IN THE ARCTIC AND AT HIGH ALTITUDES 2 (2009).

474. *Id.* at 5.

ages, including our own Holocene period.⁴⁷⁵ For the past million years or more, “permanent” year-round ice sheets have covered large portions of the Arctic Sea and Greenland.⁴⁷⁶

For the past twenty thousand years, since modern human beings first arrived, the Arctic has been a focal point, trigger, and bridge for global human migration and the homeland of all indigenous peoples throughout the Americas.

For the past eleven thousand years, the settlement and habitation of Arctic lands by diverse indigenous peoples—and the use by these communities of the region’s animals, plants, and marine resources—has been defined by sustainable economic, social, and cultural development.

For the past millennium (1000 to 2000), the physical and human environment of the Arctic has been shaped, defined, and exploited by European-based explorers, traders, and settlers thoroughly integrated with the international economic system. Arctic history of the past thousand years has been defined primarily by such interaction.

Ivan Illich once described modern world history as “*five hundred years of warfare that has been waged by the modern State against all forms of Subsistence.*”⁴⁷⁷ Modern Arctic history tells stories of this war played out in the earth’s most northern lands.

British historian Robert Young writes that “[t]he assumption of postcolonial studies is that many of the wrongs, if not crimes, against humanity are a product of the economic dominance of the north over the south.”⁴⁷⁸ That may be a fair assumption, or fair enough, but not in the Arctic, as we have seen. In Arctic history, everything is upside down.⁴⁷⁹ “North” is south, and “south” is north—at least it has been that way for the past five or six centuries, until the present era.

B. *The Past Sixty Years*

Nothing has changed, as we have witnessed:

- (1) continued expansion by each Arctic littoral nation-state of sovereignty, territorial control, legal jurisdiction, and

475. *Id.* at 3, 481.

476. *Id.* at 484; see also J.T. Overpeck et al., *Arctic System on Trajectory to New, Seasonally Ice-Free State*, 86 EOS 309, 310 (2005) (“[A] summer ice-free Arctic Ocean within a century is a real possibility, a state not witnessed for at least a million years.”).

477. Letter from Ivan Illich to Stewart Brand (Apr. 12, 1980), available at <http://www.preservenet.com/theory/Illich/Vernacular.html>.

478. ROBERT J. C. YOUNG, POSTCOLONIALISM: AN HISTORICAL INTRODUCTION 6 (2001).

479. FELA ANIKULAPO KUTI, *on FELA & THE AFRICA '70* (London Records 1977).

military activity throughout all remaining northern frontier territories⁴⁸⁰;

480. On May 27–29, 2008, the five littoral states (Canada, Denmark, Norway, the Russian Federation, and the United States) met in Ilulissat, Greenland at the invitation of the Danish Minister of Foreign Affairs. Arctic Ocean Conference, Ilulissat, Green., May 27–29, 2008, *Ilulissat Declaration*, at 1, available at www.oceanlaw.org/downloads/arctic/Ilulissat_Declaration.pdf [hereinafter *Ilulissat Declaration*]. The Ilulissat Declaration is important for several reasons, not the least of which is the fact that the five nations *excluded* fellow member states in the Arctic Council that technically did not have Arctic Sea coasts (Sweden, Finland and Iceland), as well as other nations in northern Europe, and representatives of the EU. Indigenous Portal, The Ilulissat Declaration from the Arctic Ocean Conference, <http://www.indigenousportal.com/rw/1055-1086-1083-1080-1090-1080-1082-1072/The-Ilulissat-declaration-from-the-Arctic-Ocean-Conference.html> (last visited Oct. 4, 2009). There was also no participation from any of the region's aboriginal peoples, nor were indigenous perspectives or concerns identified in the Declaration. *Id.* The five states declared that the law of the sea provides “a solid foundation for responsible management by the five coastal States and other users of this Ocean through national implementation and application of relevant provisions.” *Ilulissat Declaration, supra*, at 1–2. In a June 30, 2009 speech in Ottawa, Russian embassy charge d'affaires Sergey Petrov elaborated on the nation-state centered conception that had been articulated in Ilulissat: “[t]here are some outside players that want to be involved and they are putting some oil on the flame. [However,] [i]t would be just five countries who would divide this quarter—or third—of world resources. Naturally, there are those who want to be a part of that. [But it's] not in the interests of Canada . . . and it's not in the interests of Russia to allow any other outside players to be part of this system.” Alexander Panetta, *Russians Say Canada Ally–Not Rival–in Arctic Sovereignty Fight*, CNEWS, June 30, 2009, <http://cnews.canoe.ca/CNEWS/Canada/2009/06/30/9987336-cp.html>; see also Europe's Northern Security Dimension, EUR. PARL. DOC. A/2016, at 2–3 (2008) (prepared by Paul Wille & Odd Einar Dorum) (“Perturbed that the recent war in Georgia may be indicative of a return to symmetric conflict,” and “[n]oting the increase in Russia's military activities in the Arctic region, which include passes by strategic bomber planes close to Norwegian and Icelandic airspace, and in its investment in power projection capabilities,” the Report cites a recent study by the Swedish Defense Institute “concerning the growing importance of the Arctic in terms of missile defense and nuclear deterrence.”). In the *Explanatory Memorandum* to this report, Wille and Dorum assert:

[t]he northern dimension of Europe's security is increasingly being determined by climate change in the Arctic With the melting of the polar ice cap, new opportunities for oil and gas exploration open up and coastal states have begun to lay claim to the new areas of open sea and the access these afford to the riches of the Arctic waters and seabed. Many of their claims will overlap A further driving force in the Arctic is a more assertive and resourceful Russia which has resumed its military activity there. Military equipment is getting better and the receding ice no longer acts as a brake on such activity Russia's recent assertiveness has contributed to more active policies on the part of other countries in the region, including Canada and the United States These countries represent the transatlantic elements of Europe's northern security dimension The Arctic region remains important to NATO and is home to major installations of the US global missile defense system.

- (2) identification of new sites, deposits, and forms of valuable natural resources in areas of expanded sovereign control; the investment of private and public capital; and the application of current engineering technologies, to extract the resource for sale on world commodity markets until the resource is depleted⁴⁸¹;
- (3) continued encroachments on the traditional cultural and economic sustainability practices of surviving aboriginal peoples, and resulting widespread impoverishment⁴⁸²; and

481. Robert Bone demonstrates that the recurrence in the contemporary Arctic of “resource boom-and-bust cycles” (especially in the exploitation of a wide variety of northern mineral deposits including lead, gold, zinc, diamonds) is reminiscent of the Yukon gold rush and other past patterns “characterized by a rapid increase in economic activity followed by an inevitable collapse.” BONE, *supra* note 6, at 105–10, 120–23. Bone also documents the emergence of an Arctic “era of megaprojects” beginning in the second half of the twentieth century and continuing today. *Id.* at 137–38. Completed megaprojects include the construction and operation of giant hydroelectric production sites (La Grande and Churchill/Nelson), major new coal and diamond mining enterprises, the Alberta oil sands open-pit mines, and the Alliance Gas Pipeline, but many more projects are in the process of construction. *See generally id.* at 134–57 (“Megaprojects in Northern Development”). Of these projects, the largest and most ambitious seek to exploit, process and transport Arctic reserves of petroleum (including oil and natural gas) and other hydrocarbons (including oil and tar sands). *Id.* at 123–26, 146–55. Regarding hydrocarbons located beneath the melting ice of the Arctic Sea, the United States Geological Survey has (by now, famously) estimated that the Arctic may hold as much as one quarter of the world’s undiscovered hydrocarbon resources, and Russian sources have estimated potential resources between five and ten billion tones of fuel equivalent. *See, e.g.*, Tavis Potts and Clive Scholfield, *Current Legal Developments in the Arctic*, 23 INT’L J. MARINE & COASTAL L. 151, 154 n.18 (2008) (describing official and unofficial Russian estimates of fuel equivalent in the Arctic). The most comprehensive assessment to date of Arctic petroleum hydrocarbon resources and current and potential oil and gas exploration and development activities in the region is the Arctic Council’s ARCTIC OIL AND GAS 2007 report. ARCTIC COUNCIL’S ARCTIC MONITORING AND ASSESSMENT PROGRAMME, ARCTIC OIL AND GAS 2007, available at <http://www.amap.no/workdocs/index.cfm?action=getfile&dirsub=%2FOGA%20Overview%20Report&filename=FINAL%20OGA%20OVERVIEW%20-%20ALL%20-%2020240408.pdf&CFID=2772&CFTOKEN=11FF6494-7EDB-CE37-AC30157F1660C2FB&sort=default>. The Executive Summary of this report states: “[t]he importance of oil and gas development to the economy of the Arctic means that, with the possible exception of climate change, this activity will pose the most significant challenges to balancing resource development, socio-cultural effects, and environmental protection in the Arctic in the next few decades.” *Id.* at v. For a discussion on the impact of arctic oil and gas development on aboriginal peoples in Alaska, Canada (Yukon and Alberta), Greenland, and Russia (Western Siberia, Eastern Siberia, and Chitinskaya Province), see the special edition of INDIGENOUS AFF., Jan.–Feb. 2008.

482. *See* INUIT TAPIRIIT KANATAMI, INUIT STATISTICAL PROFILES 9 (2008), available at http://www.itk.ca/sites/default/files/InuitStatisticalProfile2008_0.pdf (noting the unemployment rates for Inuit men (aged 25–64) across Canada is 23 percent, as compared to five percent of non-Inuit Canadian men). The median income for Inuit adults is much lower than for all Canadians (\$13,699 compared to \$22,120) while the cost of living for Inuit is much higher (for example, the total cost of a five pound bag of potatoes, one liter of two percent milk, one pound of ground beef and two and a half kilograms of white flour is \$31.22 in Clyde River, Nunavut compared to

- (4) the continued deterioration of Arctic wildlife biodiversity (both *flora* and *fauna*), the contamination of the natural ecosystems throughout the circumpolar region, and the extremely harmful impact of environmental degradation and persistent organic pollutant accumulation on the region's aboriginal peoples.⁴⁸³

\$9.37 in Montreal). *Id.* at 10. In terms of health indices, the Inuit suicide rate is more than eleven times higher than the overall Canadian rate; the infant mortality rate is about four times higher. *Id.* Lung cancer death rates for Canadian Inuit are the highest in the world. *Id.* at 5–6. One source states that for Canada's Inuit peoples, the tuberculosis rate almost 23 times higher than the rate for all Canadians, *id.* at 4, while another source (published by the same Inuit organization) states that “[t]he Inuit TB rate is 90 times the rate as the rest of the Canadian population,” INUIT TAPIRIIT KANATAMI, 2008–2009 ANNUAL REPORT 7 (2009), available at <http://www.itk.ca/publications/2008-2009-annual-report> [hereinafter ITK Annual Report]. According to the ITK Annual Report:

[s]ome of the key social determinants of health that affect people's susceptibility to TB include poor housing, overcrowding, lack of education, chronic unemployment and poor nutrition. A shortage of housing in our Inuit communities is causing overcrowding. Poverty is also a serious issue in most of our communities. According to Statistics Canada, Inuit are nearly eight times more likely than non-Aboriginal people to live in overcrowded homes.

Id. at 7. The GRID-Arendal *Vital Arctic Graphics* (note that GRID-Arendal is a UNEP affiliate organization) presents comparable statistics concerning aboriginal poverty, poor health, infant mortality and exposure to contamination throughout the Arctic region. GRID-ARENDAL, *supra* note 78.

483. See Rachel Kirby, *Persistent Organic Pollutant Accumulation in the Arctic*, 8 SUSTAINABLE DEV. L. & POL'Y 31 (2008) (discussing the effects of Persistent Organic Pollutants (POPs) on humans and animals in the arctic); GRID-ARENDAL, *supra* note 78, at 22 (describing the high risk of exposure to dangerous levels of POPs); *id.* at 23 (describing the high mercury levels in the blood of Arctic peoples). A variety of Persistent Organic Pollutants (POPs) contaminate the waters, flora, wildlife and human inhabitants of the Arctic region including DDT, PCBs (polychlorinated biphenyl, a chemical used in electrical equipment), and Endrin (a chemical used for insect, bird, and rodent control) and a variety of heavy metals such as lead and mercury. Sarah R. Hamilton, Note, *Toxic Contamination of the Arctic: Thinking Globally and Acting Locally to Protect Arctic Ecosystems and People*, 15 COLO. J. INT'L ENVTL. L. & POL'Y 71, 75–77 (2004). Most of these contaminants are deposited in the Arctic from remote locations via air currents, ocean currents, and river flow. *Id.* Upon their arrival in the Arctic, the contaminants do not tend to dissipate, rather, they stay preserved in the cold climate for years. David Tenenbaum, *Northern Overexposure*, 106 ENVTL. HEALTH PERSP. A64, para. 12 (1998), available at <http://www.ehponline.org/qa/106-2focus/focus.html>. Moreover, POPs “bioaccumulate” (i.e., become preserved in Arctic animal and plant life cycles); in turn, Arctic aboriginal peoples eat land and marine mammals and sea birds with high levels of POPs in their fatty tissues. Olav Schram Stokke, *A Legal Regime for the Arctic? Interplay with the Law of the Sea Convention*, 31 MARINE POL'Y 402, 404 (2007). As a result, “[t]he Inuit of Canada and Greenland have among the highest exposures to PCB and mercury measured on the planet. Fetuses and infants relying on breast milk are particularly vulnerable.” *Id.* Arctic populations are actually exposed to five times more radiation than people in temperate areas. Hamilton, *supra*, at 79 (citing ARCTIC MONITORING AND ASSESSMENT PROGRAMME, ARCTIC POLLUTION 2002, at 74 (2002)). Because of this exposure, these populations are also more prone to genetic mutations and various types of cancer, not

And yet everything has changed, as we have witnessed:

- (1) the Arctic transformed into a regional theatre for NATO–Russia military confrontation and nuclear proliferation in the Cold War era, and today⁴⁸⁴;
- (2) climate-related changes to Arctic ecosystems occurring at a speed and magnitude greater than any comparable developments in millenia, including the release of huge quantities of methane that had been frozen in permafrost for millions of years,⁴⁸⁵ the anticipated elimination of summer polar ice-cover for the first time in more than a

to mention the dangers associated with POPs and heavy metal consumption, which have been linked to malfunctioning of many bodily systems, more specifically the immune system. Hamilton, *supra*, at 80–83. In 2008, the Alaska State Department of Public Health conducted a study and discovered that the birth defect rates in Alaska are double the national average. Haider Rizvi, *Arctic Groups Demand Global Chemicals’ Ban*, ONEWORLD.NET, May 11, 2009, <http://www.commondreams.org/headline/2009/05/09-2>. Another study by the Alaska Community on Toxics reported that contaminants in blood and breast milk are higher than elsewhere in the world. *Id.* An April 2009 report by the Arctic Council’s working group on the Conservation of Arctic Flora and Fauna (CAFF) addresses the human and environmental impacts of ongoing over-exploitation of resources in the Russian Arctic, including “habitat fragmentation and destruction by roads, off-road tracks, surface pipelines, mining activities, and logging; unsustainable reindeer herding and grazing, with up to 20% of the tundra zone severely affected and severe damage was observed in the forest tundra zones; illegal hunting and fishing, and misuse of other natural resources; and local pollution connected with prospecting, extraction, processing and transportation of oil, gas, and mineral resources.” TIINA KURVITS ET AL., AN INTEGRATED ECOSYSTEM MANAGEMENT APPROACH TO CONSERVE BIODIVERSITY AND TO MINIMIZE HABITAT FRAGMENTATION IN THE RUSSIAN ARCTIC 2 (Conservation of Arctic Flora and Fauna ed., 2009).

484. See Part VII of the Article, above; see also Owen Matthews, *The Coldest War: Russia and U.S. Face Off Over Arctic Resources*, DAILY MAIL ONLINE (London), May 19, 2009, <http://www.dailymail.co.uk/news/article-1184291/The-coldest-war-Russia-U-S-face-Arctic-resources.html> (describing current tensions in the region).

485. See Press Release, Austl. Commonwealth Scientific & Research Org. (CSIRO), *Permafrost Melt Poses Major Climate Change Threat* (July 1, 2009), available at <http://www.csiro.au/news/Permafrost-climate-change-threat.html> (“New research shows that the amount of carbon stored in frozen soils at high latitudes is double previous estimates and could, if emitted as carbon dioxide and methane, lead to a significant increase in global temperatures by the end of this century.”). In a paper published in the most recent edition of GLOBAL BIOGEOCHEMICAL CYCLES, Dr. Pep Canadell, Executive Director of the CSIRO Global Carbon Project concludes:

[t]he potential for significant feedbacks from permafrost carbon could be realized with only a small fraction of currently frozen carbon released to the atmosphere. For example if only 10 per cent of the permafrost melts, the resulting feedback could result in an additional 80 ppm carbon dioxide equivalent released into the atmosphere, equating to about 0.7° C of global warming.

million years,⁴⁸⁶ and the most significant retreat of the Greenland ice sheet in human history⁴⁸⁷;

C. Tarnocai et al., *Soil Organic Carbon Pools in the Northern Circumpolar Permafrost Region*, 23 GLOBAL BIOGEOCHEMICAL CYCLES GB2023 (2009).

486. U.S. CLIMATE CHANGE SCI. PROGRAM, *supra* note 473; James E. Overland, *The Case for Global Warming in the Arctic*, in INFLUENCE OF CLIMATE CHANGE ON THE CHANGING ARCTIC AND SUB-ARCTIC CONDITIONS (Jacques C.J. Nihoul & Andrey G. Kostianoy eds., 2009). The United Nations Environment Programme (UNEP) reports: “[i]n the last three decades there have been declines in the extent of Arctic sea ice of 8.9 per cent per decade in September and 2.5 per cent per decade in March,” as well as declines in the thickness of the remaining Arctic ice. N. ENVTL. PROGRAM [UNEP], GLOBAL OUTLOOK FOR ICE AND SNOW 11 (2007), available at http://www.unep.org/geo/GEO_Ice/PDF/GEO_C1_LowRes.pdf. The most recent (January 2009) Arctic assessment of the U.S. Geological Survey (USGS) reports: “[t]he average September ice extent in 2007 of 4.28 million km² was not only the least ever recorded but also 23% lower than the previous September record low of 5.56 million km² set in 2005. The difference in areas corresponds with an area roughly the size of Texas and California combined. On the basis of an extended sea ice record, it appears that area of ice in September 2007 is only half of its area in 1950–70 . . .” N.E. Rayner et al., *Global Analysis of Sea Surface Temperature, Sea Ice, and Night Marine Air Temperature Since the Late Nineteenth Century*, J. GEOPHYSICAL RES. (2003), cited in U.S. CLIMATE CHANGE SCI. PROGRAM, *supra* note 473, at 422–23. Meanwhile, as reported in August 2009 by the U.S. National Snow and Ice Data Center:

the polar ice cap shrunk an average 41,000 square miles (106,000 square kilometers) a day in July [2009] – equivalent to one Indiana or three Belgiums daily. The rate of melt was similar to that of July 2007, the year when the ice cap dwindled to a record low minimum extent of 1.7 million square miles (4.3 million square miles) in September.

Charles J. Hanley, *Vast Expanses of Arctic Ice Melt in Summer Heat*, ASSOCIATED PRESS, Aug. 9, 2009, <http://www.cbsnews.com/stories/2009/08/09/tech/main5228298.shtml>. The unprecedented and increasing human, environmental, commercial, shipping and security impact of global warming, including the enormous challenges presented to the survival of sustenance-based economies of aboriginal peoples, is documented in a wide range of recent reports. See, e.g., THE ARCTIC COUNCIL, THE ARCTIC MARINE SHIPPING ASSESSMENT 2009 REPORT (2009), available at http://arcticportal.org/uploads/4v/cb/4vcbF5nnKFT8AB5IXZ9_TQ/AMSA2009Report.pdf (discussing concerns associated with global warming); THE IMPACT OF CLIMATE CHANGE ON THE RUSSIAN ARCTIC: ANALYSIS AND PATHS TO SOLVING THE PROBLEM (A.O. Kokorin et al. eds., 2008) (discussing concerns associated with global warming); Daniel Cordalis & Dean B. Suagee, *The Effects of Climate Change on American Indian and Alaska Native Tribes*, 22 NAT. RESOURCES & ENV'T 45 (2008) (discussing the concerns associated with global warming); James D. Ford, *Dangerous Climate Change and the Importance of Adaptation for the Arctic's Inuit Population*, 4 ENVTL. RES. LETTERS, Apr.–June 2009, at 024006 (discussing concerns associated with global warming); Mark Nuttal, *Climate Change and the Warming Politics of Autonomy in Greenland*, INDIGENOUS AFF., Jan.–Feb. 2008, at 44 (discussing concerns associated with global warming); see also PETITION TO THE INTER AMERICAN COMMISSION ON HUMAN RIGHTS SEEKING RELIEF FROM VIOLATIONS RESULTING FROM GLOBAL WARMING CAUSED BY ACTS AND OMISSIONS OF THE UNITED STATES 13–20 (Dec. 7, 2005), discussed in Hari M. Osofsky, *The Inuit Petition as a Bridge? Beyond Dialectics of Climate Change and Indigenous Peoples Rights*, 31 AM. INDIAN L. REV. 675 (2007) (working to address U.S. contributions to Global Warming); Meeting of the Parties to the 1973 Agreement on the Conservation of Polar Bears, Outcome of Meeting (Mar. 17–19, 2009), <http://arctic-council.org/filearchive/Outcome%20of%20the%20meeting.pdf> (noting “with deep

- (3) the assertion of new or extended claims to sovereign territorial and economic rights (including natural resource monopolies) by each littoral state to vast, potentially resource-rich maritime areas in the Arctic Sea (in accordance with international law principles set out in the United Nations Convention on the Law of the Sea)⁴⁸⁸;
- (5) the development of new institutions, mechanisms, and processes of regional environmental planning, governance, and cooperation (especially the Arctic Council and its working groups)⁴⁸⁹; and
- (6) unprecedented achievements in the recognition and exercise of self-determination by circumpolar aboriginal peoples, including the establishment of the Inuit Circumpolar Council (ICC) in 1980 as a cooperative organization and parliament for Inuit people in Alaska, Canada, Greenland and Siberia; the establishment of the Nunavut self-government in 1999⁴⁹⁰; engagement of permanent

concern the escalating rates and extent of changes in the Arctic induced by climate change to date” and emphasizing the grave threats these changes present to polar bear species survival).

487. See generally THE CNA CORP., NATIONAL SECURITY AND THE THREAT OF CLIMATE CHANGE 58 (2007), available at <http://securityandclimate.cna.org/report/National%20Security%20and%20the%20Threat%20of%20Climate%20Change.pdf> (“Data from NASA’s Goddard Space Flight Center show that the seasonal melt area over Greenland has trended upward at 7 percent per year over the last twenty-five years, and the ice shelf surrounding Greenland has thinned by 230 feet over the last five years.”). In addition to the ongoing melting of the ice sheet, “major glacier calving events sent up to 44 square miles of ice into the sea at a time” in late 2000/early 2001 and again in 2007; according to a 2009 study led by researchers at the University of Alaska Fairbanks, the melting of the Greenland ice sheet may be responsible for nearly 25 percent of global sea rise in the past 13 years.” *Greenland Ice Sheet Melting Faster Than Expected*, SCIENCE DAILY, June 13, 2009, <http://www.sciencedaily.com/releases/2009/06/090612092741.htm>.

488. See Bernard H. Oxman, *The Territorial Temptation: A Siren’s Song at Sea*, 100 AM. J. INT’L L. 830, 832 (noting that U.S. President Harry Truman’s 1945 proclamation asserting exclusive rights to exploit resources in maritime areas from the U.S. coast to the extension of its continental shelf “was so quickly accepted and emulated by other coastal states that the emergence of the regime of the continental shelf, in derogation of the principle of *mare liberum*, has been cited as an example of instant customary law”). Oxman’s incisive analysis continues:

The Truman Proclamation unleashed a quarter-century of territorial and quasi-territorial claims to the high seas so vast that, at the dawn of the Third United Nations Conference on the Law of the Sea, the leader of the Canadian delegation, Ambassador J. Alan Beesley, could quip that he comes to bury Grotius, not to praise him.

Id.

489. The Arctic Council, http://arctic-council.org/section/the_arctic_council (last visited Oct. 4, 2009).

490. See, e.g., DONALD PURICH, THE INUIT AND THEIR LAND: THE STORY OF NUNAVUT 151, 151–52 (1992) (discussing the establishment of the Inuit Circumpolar

participation status in the Arctic Council by the ICC and five other trans-national Arctic indigenous organizations (the Aleut International Association (AIA), the Arctic Athabaskan Council, the Gwich'in Council International, The Russian Association of Indigenous Peoples of the North (RAIPON), and the Saami Council); the establishment by the Canadian government of the Indian Residential Schools Truth and Reconciliation Commission⁴⁹¹; and the June 2009 assumption of self-rule by Greenland's Inuit population.⁴⁹²

Conference). In Canada, final comprehensive land claim agreements between Ottawa and Arctic or sub-Arctic indigenous nations include the James Bay and Northern Quebec Agreement (1975); the James Bay Naskapi (1978); the Inuvialuit Final Agreement (1984); the Gwich'in Final Agreement (1992); the Tungavik Federation of Nunavut Final Agreement (1992); The Sahtu/Métis Final Agreement (1993); the Yukon Indians' Umbrella Final Agreement (1993) and the Nisga'a Final Agreement (1999). Bone, *supra* note 6 at 190–93. Bone also identifies six important decisions of the Canadian Supreme Court (1983–1999) enforcing aboriginal rights. *Id.* at 195; *see also* Inuit Tapiriit Kanatami, Circumpolar Inuit Declaration on Arctic Sovereignty (Apr. 2009), <http://www.itk.ca/circumpolar-inuit-declaration-arctic-sovereignty> (adopted by the ICC in April 2009).

491. *See* Stephen Harper, Prime Minister of Canada, Official Apology for Residential Indian Schools System (June 11, 2008), *available at* <http://pm.gc.ca/eng/media.asp?id=2149> (officially apologizing on behalf of the Canadian government for removing aboriginal children from their families and forcing them to attend residential schools in which Inuit and other indigenous languages and cultural practices were prohibited: “[t]he government now recognizes that the consequences of the Indian residential schools were profoundly negative and that this policy has had a lasting and damaging impact on aboriginal culture, heritage and language.”). Pursuant to the Indian Residential Schools Settlement Agreement, the Canadian government launched the Indian Residential Schools Truth and Reconciliation Commission, which met for the first time in August 2009. *See generally* Indian Residential Schools Truth and Reconciliation Commission, http://www.trc-cvr.ca/index_e.html (last visited Oct. 4, 2009) (providing information on the reconciliation program).

492. *See Not a Barren Country*, *ECONOMIST* (U.S.), July 16 2009, *available at* http://www.economist.com/world/international/displaystory.cfm?story_id=14031276 (describing the new political powers of the Arctic people). Regional advances in the recognition of aboriginal self-determination have been supported by international achievements, especially the September 14, 2007, adoption by the United Nations General Assembly of the United Nations Declaration on the Rights of Indigenous Peoples. The final vote was 143 in favor, eleven abstentions, and only four negative votes: the United States, Canada, Australia and New Zealand. Press Release, U.N. General Assembly, United Nations Adopts Declaration of Rights of Indigenous People (Sept. 13, 2007), *available at* <http://www.un.org/apps/news/story.asp?NewsID=23794&Cr=indigenous&Cr1>. With new capacity to obtain revenues from Greenland's natural wealth, the Bureau of Minerals and Petroleum (BMP) of Greenland's new Self-Government has launched a campaign to encourage foreign direct investment in a wide range of economic development projects, including the extraction of oil, gas and mineral resources. *See INVEST IN GREENLAND* (Branding Greenland 2009) (“Greenland provides new opportunities for the oil and minerals exploration industry backed up by an ample workforce and infrastructure.”). In this context, “BMP engages in concerted efforts to promote Greenland's petroleum and mineral potential through participation in

“Recognising that the people of Greenland is a people pursuant to international law with the right of self-determination,” the 2009 Act on Greenland Self-Government (the Act) assigns domestic sovereignty to Greenland’s majority indigenous people “based on an agreement between Naalakkersuisut [Greenland Government] and the Danish Government as equal partners.”⁴⁹³ As a result, “the legislative power shall lie with Inatsisartut [Greenland Parliament], the executive power with Naalakkersuisut, and the judicial power with the courts of law.”⁴⁹⁴ On June 21, 2009, when the Act entered into force,⁴⁹⁵ Greenlandic became the official language of Kalaallit (i.e., the Inuit name for Greenland),⁴⁹⁶ and its people affirmed their indigenous national identity for the first time after centuries of Danish colonial rule.

“The crowds in Nuuk, Greenland’s pretty coastal capital, marked the devolution of more powers from Denmark on midsummer’s day, with cheers, processes and flags,” *The Economist* reported.⁴⁹⁷

The town thronged with men in white anoraks and women in kalaallisuit, an outfit of sealskin boots and trousers set off with a beaded top . . . The newly elected prime minister of Greenland, Kuupik Kleist, who represents an Inuit-dominated party, promised that his country would act as an “equal partner” with Denmark, the old colonial power. The Danish prime minister, Lars Løkke Rasmussen, responded with a pledge that Greenland could claim full independence whenever it chooses. A more cordial separation is hard to imagine.⁴⁹⁸

Meanwhile, “[h]undreds of Greenlanders from the area of Qaanaaq, Greenland, traveled by boat and plane to Thule Air Base to participate in the ceremony.”⁴⁹⁹

international trade shows and exhibitions and through direct promotional activities aimed at selected petroleum and mining companies.” *Id.*

493. Act on Greenland Self-Government, No. 473, pmbL (2009) (Den.). By “domestic sovereignty,” I refer to executive, legislative and judicial power over all domestic affairs. *See id.* ch. 1–2 (describing the powers that Greenland has). The Act affirms ongoing economic relations between Denmark and the “Greenland Self-Government authorities” including an annual subsidy of DKK 3,439.6 million (an amount which shall be reduced by an amount corresponding to one-half of any revenue from mineral resource activities above DKK 75 million accrued to the Self-Government authorities in any given year. *Id.* ch. 3. Naalakkersuisut is permitted to act in international affairs as defined by Chapter 4, i.e., in a manner consistent with Denmark’s foreign and security policy. *Id.* ch. 4.

494. *Id.* ch. 1, para. 1.

495. *Id.* ch. 9, para. 22.

496. *Id.* ch. 7, para. 20.

497. *Not a Barren Country*, *supra* note 492.

498. *Id.*

499. Lisa Meiman, *Birth of a Nation: Team Thule Witnesses Greenland’s First Independence Day*, THULE TIMES, June 25, 2009, <http://www.thule.af.mil/news/story.asp?id=123155915> (newspaper of Thule Air Force Base).