Empire of Ice: Arctic Natural History and British Visions of the North, 1500-1800

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Introduction: British Arctics

Northern Journeys

The Arctic has never been one place. History shows us that human visions of the North have morphed depending on who examined it, for what purpose, and at what period in time. In his recent *Unfreezing the Arctic*, Andrew Stuhl makes a case for many Arctics since the nineteenth century: Arctics that are "dangerous," "threatened," "wild," "strategic," and "disturbed."[1] Stuhl's work is an important contribution to scholarship on the north because he encourages a revision of and supplementation to modern scientific interpretations of the Arctic as "a far-off land receiving the world's carbon emissions, and for this to reflect the first collision of south and north, of industry and wilderness." Rather, he entices us to think of the Arctic experiencing colonial interventions and collisions "yet again," as opposed to for the first time.[2]

Over the last twenty-five years, our perception of the Arctic's relationship to the rest of the world as a massive carbon-sink has subsumed many other narratives of the Arctic, scientific and otherwise, that existed in history. Although its status as a physically endangered ecosystem certainly merits our attention, there are other histories of the north; investigation into the Arctic's past reminds us that it has and continues to be a "peopled" place that is integrated firmly into global systems.[3] The Arctic has long been home to circumpolar indigenous peoples: Inuit, Saami, First Nations, and many others. And in

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[1] Andrew Stuhl, *Unfreezing the Arctic: Science, Colonialism, and the Transformation of Inuit Lands* (Chicago: University of Chicago Press, 2016), 11-13.
[2] Stuhl, *Unfreezing the Arctic*, 7.
[3] Stuhl, *Unfreezing the Arctic*, 145, 5.

histories of the Anglo-American and European world, the Arctic has been a stage for literature, commerce, exploration, scientific investigation, and geopolitical strategy in foreign affairs.

While Stuhl's work is an exemplar of what historian of Scandinavian science Sverker Sörlin has called the "Northern Turn" in the history of science, Stuhl does not do enough to position the north as contested ground since Europeans *first* began to question the nature of the north.[4] By querying early modern understandings of the Far North, we can see why Stuhl fights to "unfreeze" monolithic notions of the North in the first place. Assuming Stuhl is right that intractable notions of the North are embedded in modern environmental understandings, I argue those visions of northern nature were established in the sixteenth, seventeenth, and eighteenth centuries. In unveiling the long history of imperialist narratives of northern nature, I work to showcase the long history of colonial intervention and European encounters with the Far North.

Amidst our multitude of imaginings of the Arctic, the early modern period offers an interesting snapshot of just how contested visions of the northern world were. The British envisioned the north as simultaneously barren and full of life, inhospitable and inhabited, healthy and harmful. What these incongruous portrayals reveal to us is that although the British crafted sweeping northern narratives by invoking their understandings of geography, natural history, and medicine, British actors did not operate as a unified body; there was tension, debate, and conflict in shaping British

[4] Sverker Sörlin, "Greening the Great White: Encounters of Knowledge and Environment – and the Northern Turn in the History of Science," Distinguished Lecture, History of Science Society Meeting, Toronto, November 9, 2017.

understandings of northern nature and fitting that knowledge to different imperial agendas. These conflicting narratives, which entangled notions of sovereignty and nationhood, nature and history, and climate and bodies, work to explain how the north could be all of these "contradicting" things in one time and place.

What little work historians have done on the early modern Arctic has caricatured the north as a mosaic of whimsy and mythology, dismissed by scholars as a mere home to Plinian-style monsters, Olaus Magnus's dangerous water dragons, and other legendary beings. There is very little scholarship on the early modern Arctic: it appears recently in Umberto Eco's *Book of Legendary Lands* (2013), Ted Binnema's, *Enlightened Zeal* (2014), Frédéric Regard's edited volume, *The Quest for the Northwest Passage: Knowledge, Nation and Empire, 1576-1806* (2015) and a handful of mid-twentieth century histories which are, needless to say, outdated, if effectual surveys of archival material from the Hudson's Bay Company Archives and elsewhere. An analysis of the north that centers early modern northern knowledge in an imperial context works against that simplistic interpretation of the early modern Arctic as a mythical space. Far more than a mythical space, historical investigation of this multitude of northern visions shows us that the Arctic is an environment that was deeply constructed by social, scientific, political, and cultural concerns.

This far northern region was made intelligible to early modern natural philosophers earlier than most Arctic histories suggest. Despite its seemingly peripheral position on the planet, the Arctic's earliest encounters with Britons and its entanglement with the complexities of the politics, scientific knowledge production, and the social

culture of the British Empire from the sixteenth to the eighteenth centuries situated the Far North as a landscape as much prey to imperial ambitions as any other place. In this context, we should not be surprised that the first attempt at an English settlement in the New World was in the Far North in the mid-1570s on a small island in Baffin Bay only 276 miles south of the Arctic Circle. To fully understand how the Arctic, which has been steadfastly part of a narrative attesting to its marginality, became so central to imperial activities in the early modern period requires an examination of the many ways that the Arctic was conceptualized and understood in the British historical imagination.

Beginning in the sixteenth century, British imperialists deployed their knowledge of the Far North—geographical, climatic, medical, and natural historical—to weave a powerful narrative of possession and ownership over the northern parts of North America, transforming the Arctic into a colonial environment. Aspiring to construct and claim these northern spaces as British places, British natural philosophers, naturalists, physicians, and fur trader residents in the Arctic understood the north through an imperial framework of geography, climatic knowledge, medicine, and natural history. Deploying this imperial framework allowed the British to justify expansion into and a continued presence in the North which worked to define northern spaces, northern peoples and British geopolitical strategies and perceptions of non-English peoples living in the British Isles. To craft an English Arctic, the British imagined for the north a history dating back to King Arthur, in which power was asserted by controlling narratives of habitability, using northern physiology to inform ideas about social stratification, and by integrating

Britain firmly in the "Arctic World."[5] By 1818, when the British Navy aggressively began to dispatch vessels to explore the Arctic, it was *not* a foreign region, although much of it was still unexplored. By this time, British imperialists had already established the Far North as a space belonging to the British Empire.

The early modern Arctic that I will portray here is geographically very specific. It may not even immediately seem "Arctic" to those with the modern polar regions in mind. The early modern Arctic did not possess the discrete geographical boundary that characterizes it today. In the twenty-first century, the Arctic is an environment and ecosystem described partially by being north of 66 degrees' latitude, a region bounded by a largely imagined line—the Arctic Circle—which severs the northern hemisphere in northern Iceland, Greenland, Canada, Alaska, Russia, and Scandinavia. This line coincides with natural occurrences of vegetation, the tree line, that indicates a shift to an Arctic ecosystem. But the tree line ranges anywhere from 56 degrees north on the Labrador Peninsula in Canada to 72 degrees north in central Siberia, fluctuations accounted for by continentality and weather patterns that variegate wind and cold in the northern hemisphere.

While the Arctic Circle existed by a number of names in the early modern period, it functioned to demarcate the northernmost climatic zone in the tradition of Ptolemy, separating the northern temperate zone from the *zonum frigidum*. The historical Arctic has not been so cleanly bounded for the last three hundred years and continues to be fluid, especially in light of changing global climate patterns. It is with this context in

[5] Or to put the "Arctic World" firmly in the British Empire.

mind that I will refer to the Arctic and the Far North interchangeably. Although the region of interest for the British between 1500 and 1800 often fell south of the Arctic Circle, eighteenth-century cartographers, while usually referring to north of the Arctic Circle as Polar or Arctic, were inconsistent in their terminology. For example, the 1701 Herman Moll geography, *System of Geography*, described New Wales on the western shores of Hudson Bay, where the Hudson's Bay Company built a number of its forts, as one of the "Arctick Countries."[6] Regions which today would be classified as "subarctic" played an important role in the British conceptualization of northern lands; these parts of the world, while technically part of the "temperate zone," experienced weather phenomenon akin to more Arctic or Polar places. Ultimately, it was experiences in these "temperate," but Arctic regions that more clearly defined expectations of the Far North than truly polar places in the early modern British mindset.

This Arctic preoccupied imperially-minded Britons, and it was these imperial agents whose intellectual frameworks were overlaid onto the northern environment. These imperial agents were sometimes advisors to powerful rulers, like John Dee, politicians, such as Arthur Dobbs, or gentlemen-naturalists, like the Welsh landholder Thomas Pennant. Often, the architects of Arctic visions were people whose names have fallen into obscurity, like a group of amateur naturalists whose primary occupations were in the fur trade. Fur trader-naturalists like James Isham, Andrew Graham, and Samuel

[6] Herman Moll, *A System of Geography: Or, A New and Accurate Description of the Earth In All its Empires, Kingdoms, and States* (London, 1701).

Hearne held the highest posts in the Hudson's Bay Company's field operations in their careers, but all were, at the end of the day, not formally educated. These fur trader-naturalists are a unique and small group, as they published works on the Far North, experts by experience. Together, this group of Britons represents the piecemeal way in which an environment like the early modern Arctic was made intelligible to both Britons and other Europeans, towards the ultimate goal of expanding the British Empire.[7]

The Need for an Early Modern (British) Arctic

As there is no single vision of the Arctic across time and space, there have been many interpretations of the relationship between the Far North and humans throughout history. The Arctic, especially the modern Arctic (post-1800), has attracted a large amount of attention by scholars. Popular histories like nature writer Barry Lopez's *Arctic Dreams* have taken a romantic view of the Arctic as an environment, using an interdisciplinary perspective to articulate the significance of the Far North over time, and Charles Officer and Jake Page's *A Fabulous Kingdom: The Exploration of the Arctic* tells a streamlined, progressive history of heroic exploration and subsequent discovery.[8] Even academic historians, like Peter Mancall and his *Fatal Journey: The Final Expedition of Henry Hudson,* have ridden the lucrative wave of popular histories of the Arctic.[9] Beyond

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[7] There is a distinct lack of indigenous perspectives in this narrative. In part this was because of a lack of time and resources, but for future publications, I would like to incorporate those perspectives significantly more.

[8] Charles Officer and Jake Page*, A Fabulous Kingdom: The Exploration of the Arctic* (Oxford: Oxford University Press, 2001); Barry Lopez, *Arctic Dreams: Imagination and Desire in a Northern Landscape* (Vintage Books: New York, 1986).

[9] Peter C. Mancall, *Fatal Journey: The Final Expedition of Henry Hudson* (Basic Books: New York, 2010).

nonfiction, polar landscapes and polar exploration have inspired novels, television, and films, a reflection of the grip that the Arctic has had on the western imagination for centuries.

Most twentieth-century histories of the polar regions in the English context have largely been histories of discovery, like L.P. Kirwan's *A History of Polar Exploration*.[10] These progressive narratives of heroic exploration are contemporaneous with the majority of the Hudson's Bay Company histories, which forefront the corporate history of the HBC. E.E. Rich's three-volume *History of the Hudson's Bay Company, 1670-1870* compiles a comprehensive, detailed institutional history of the Company while offering a picture of an inevitable rise for one of the world's oldest extant companies.[11] Glyndwr Williams paints a more nuanced and less sympathetic history of the Company's commercial empire in the Far North in his histories of exploration; however, his works perhaps overemphasize the not unimportant Northwest Passage when other motivations and drives also influenced European activities in northern spaces.[12] Ted Binnema's more recent *Enlightened Zeal: The Hudson's Bay Company and Scientific Networks, 1670-1870*, hones in on the operations of the Company in relation to knowledge production to

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[10] L.P. Kirwan, *A History of Polar Exploration* (Harmondsworth, 1962).

[11] E.E. Rich, *History of Hudson's Bay Company, 1670-1870* (London: The Hudson's Bay Record Society, 1959).

[12] Williams, Glydnwr. "Arthur Dobbs and Joseph Robson: New Light on the Relationship between Two Early Critics of the Hudson's Bay Company." *Canadian Historical Review* (1959) 40: 132-136; William Barr and Glyndwr Williams, eds., *Voyages to Hudson Bay in Search of a Northwest Passage, 1741-1747. Volume 1: The Voyage of Christopher Middleton 1741-1742* (Hakluyt Society: London, 1994); Glyndwr Williams, *The British Search for the Northwest Passage in the Eighteenth Century* (London: Royal Commonwealth Society by Longmans, 1962).

demonstrate the more diverse motivations of European visitors and residents in the Far North.[13]

Interestingly, histories of polar exploration and histories of the Hudson's Bay Company do not offer much insight into what historical actors understood about their experiences in the Far North. Histories of the Far North have prioritized the progressive narratives of conquest and exploration, regardless of the spaces in which these histories played out, or have focused on how the Far North has been conceptualized by actors far from those spaces. Literary analyses have explored the relationship between Arctic history, the sublime, and human imagination. Francis Spufford writes that polar history is "an intangible history of assumptions, response to landscapes, cultural fascinations, aesthetic attraction to cold regions," born in Edmund Burke's vision of the sublime; these narratives were then embedded in nineteenth-century literature: Mary Shelley's *Frankenstein*, Herman Melville's *Moby-Dick,* Wilkie Collins's *The Frozen Deep*, Edgar Allan Poe's *Narrative of Arthur Gordon Pym of Nantucket*, and various writings by Charles Dickens.[14]

Historians have tried to understand the relationship between voyages of discovery to the Far North and Anglo and American culture. Michael F. Robinson establishes nineteenth-century Arctic exploration as a masculine endeavor, but one which should be viewed also in the context of science in the nineteenth century. He explains that explorers utilized "scientific, manly, and moral rhetoric" to build credibility as explorers "because

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[13] Ted Binnema, *Enlightened Zeal: The Hudson's Bay Company and Scientific Networks, 1670-1870* (Toronto: University of Toronto Press, 2014.)

[14] Francis Spufford, *I May Be Some Time: Ice and the English Imagination* (Picador: New York, 1997), 6.

stories, more than specimens or scientific observations, constitute the real currency of Arctic exploration."[15] However, Robinson's story shows how polar exploration played out in American public opinion and tells us more about how Arctic explorers were perceived than how the Arctic itself was viewed.

Articulating and documenting the various constructions of the historical Arctic and their origins can demonstrate that the state of the Far North in our minds today was neither inevitable nor is it necessarily even "real." Andrew Stuhl's *Unfreezing the Arctic: Science, Colonialism, and the Transformation of Inuit Lands* examines how science and scientists were complicit in constructing visions of the Canadian Arctic throughout the nineteenth and twentieth centuries. Particularly he is interested in dismantling the architectures of imperialism overlaid on the Far North that subtly erased indigenous perspectives and which miscast the Far North as an empty world, primed for environmental exploitation.[16] A conception of the Far North as empty, which Adrian Howkins describes aptly as a rhetorical device to "depopulate territories and claim them for imperial powers," was a construction that developed in the seventeenth and eighteenth centuries, and was in fact contrary to ancient Greek traditions of a peopled north; in other words, visions of the north are mutable and historically contingent.[17]

Other scholars, too, have focused specifically on the historical making of the Arctic. The edited volume *Northscapes: History, Technology, and the Making of Northern Environments* attempts to write a "history of the North," which Dolly Jørgensen

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[15] Robinson, *The Cold Crucible: Arctic Exploration and American Culture*, 6.
[16] Stuhl, *Unfreezing the Arctic.*
[17] Adrian Howkins, *The Polar Regions: An Environmental History* (London: Polity, 2016), 8

and Sverker Sörlin argued had not existed heretofore, as the North was seen as "marginal."[18] Karen Oslund's *Iceland Imagined: Nature, Culture and Storytelling in the North Atlantic* comprises a cultural history of the North Atlantic from the eighteenth century, examining how a peripheral Iceland transmuted from a place seen as a "wilderness" to a "homeland," from "premodern" to veritably European.[19]

Others, inspired by environmental changes in the Far North which feel "new," have attempted to show how the environment in the Arctic has been subject to changes for centuries. Ryan Tucker Jones's *Empire of Extinction: Russians and the North Pacific's Strange Beasts of the Sea, 1741-1867* investigates the environmental effect of Russian imperial expansion on the North Pacific and its scientific and cultural ramifications, and, echoing Richard Grove of *Green Imperialism*, attempts to demonstrate how the origins of an environmental sensitivity towards extinction emerged in the eighteenth century in the Far North.[20] Adrian Howkins's *The Polar Regions: An Environmental History* is a comparative analysis of the environmental trajectories of the Arctic and the Antarctic; the two regions "offer extreme examples of human fallibility in the exploitation and abuse of nonhuman nature, but [also] offer cause for environmental

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[18] Dolly Jørgensen and Sverker Sörlin, "Introduction: Making the Action Visible, Making Environments in Northern Landscapes," in Dolly Jørgensen and Sverker Sörlin, eds., *Northscapes: History, Technology and the Making of Northern Environments,* (Toronto: UBC Press, 2013.) This perception is deployed to demonstrate a need to justify the assembly of this volume; however, a survey of histories of the north that existed prior to 2013 reveal how few such histories could be counted.

[19] Karen Oslund, *Iceland Imagined: Nature, Culture and Storytelling in the North Atlantic* (Seattle: University of Washington Press, 2013).

[20] Ryan Tucker Jones*, Empire of Extinction: Russians and the North Pacific's Strange Beasts of the Sea, 1741-1867* (Oxford: Oxford University Press, 2014); Richard H. Grove, *Green Imperialism: Colonial Expansion, Tropical Island Edens and the Origins of Environmentalism, 1800-1860* (Cambridge: Cambridge University Press, 1995).

optimism."[21] While the environmental changes happening in the Far North are poignant and relevant, they do not always articulate the rationales which underpinned exploitation.

Focused on the feverish British interest in the Arctic from the nineteenth century onwards, historians of the north have not always gone deep enough into our past to examine the earliest origins of some of the same cultural constructions they seek to dismantle. Little scholarship exists which explores the premodern intellectual history of the environment that is the Arctic. In part, this could be because most scholars have approached an intellectual history of the Arctic through the lens of modern iterations of "science," which have made the Arctic more obviously intelligible as an ecosystem understood through ecological studies and as a laboratory for geophysical experiments and monitoring. Trevor Levere's *Science and the Canadian Arctic: A Century of Exploration, 1818-1918* positions the Arctic as a "global laboratory" which was "integral to Canada's self-image as a sovereign nation…science in the Arctic was among the tools by which it sought to establish and extend that sovereignty."[22] Levere's narrative centers modern science at the heart of his work, drawing out the link between knowledge-making, exploration, and the Far North.

So why is an early modern Arctic important in light of the rich scholarship which exists about the Far North post-1800? A study of the early modern Arctic reinforces the idea that the Far North was considerably more intelligible, global and central to British imperial history than often supposed; the Arctic was not born into history in the frenzy of

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[21] Howkins, *The Polar Regions: An Environmental History*, 16.
[22] Trevor H. Levere, *Science and the Canadian Arctic: A Century of Exploration, 1818-1918* (Cambridge: Cambridge University Press, 1993).

nineteenth-century polar exploration. The Arctic did not come into being with the establishment of a trading company bent on exploiting northern resources. Like other North American environments, the Far North was crafted into an intelligible Arctic through the earliest imperial imaginings of its potential as a place of geopolitical importance, a process of rationalizing northern nature that ignored the experience and sometimes even the presence of native persons who had lived there for millennia.

Some scholars have shown the significance of the Far North in the early modern period in connection with the history of the search for the Northwest Passage, and questions about the Northwest Passage's existence in the 1740s constitute a hefty portion of my second chapter.[23] The Northwest Passage was not an insignificant motivating force in regard to exploration; it prompted the voyage that resulted in the first English settlement in the North in 1576, and it continued to influence explorers to the North throughout the eighteenth century. While the NW Passage held more geopolitical importance to early modern Britons who had not yet secured a foothold in the eastern hemisphere, it became more culturally significant to the British in the nineteenth century. No longer necessary to circumvent hostile Iberian competitors in the 1800s, the NW Passage came to symbolize a frontier to be tested by Britons, a gauntlet for American and English men to test their mettle.

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[23] In particular, Glyndwr William's works on the Northwest Passage and exploration in the eighteenth century and Frederic Regard's edited volume on the early modern quests for the Northwest Passage are essential works on this subject. Other works include Robert Glenn Ketchum, *Northwest Passage* (1996), Kenneth Lewis Roberts, *Northwest Passage* (1938), Franklyn Griffith, *Politics of the Northwest Passage* (1987), Alan Edwin Day, *Historical Dictionary of the Discovery and Exploration of the Northwest Passage* (2006), Nellis Maynard Crouse, *The Search for the Northwest Passage* (1934), and Bern Keating and Dan Guravich, *The Northwest Passage: from the Mathew to the Manhattan, 1497-1969* (1970), to name, truly, just a few.

Thus, a secondary function of this dissertation is to consider other aspects of the northern experience for British colonizers, beyond the search for the Northwest Passage. Daily life in the Far North, when entangled with the intellectual frameworks which imperialists used to understand their surroundings, illuminates the experience and mindset of Britons in the North. Studying British perspectives on nature, on the people they encountered, and on their conception of northern geography results in an understanding of the imperial narratives that shape the visions of the Far North that have existed since the sixteenth century.

An Intellectual History of the Arctic Environment

The Arctic as an *environment* is a place that has been deeply constructed by the cultural and political mores of the people who traveled there. One way to capture how historical figures have understood their surroundings is to investigate how they perceived environments through studying the natural knowledge of the time. What results is what I have termed an intellectual environmental history. Writing an intellectual environmental history requires bridging approaches traditionally deployed in the history of science and environmental history.

This method is not wholly new, but it is underutilized, especially with the popularity of the "material turn" in both disciplines of historical investigation since the 1990s.[24] In exploring the Arctic as a place that was defined by changing British imperial

[24] One of the more exemplary works in the history of science that emphasized this position is Robert Kohler's *Lords of the Fly: Drosophila Genetics and the Experimental Life* (Chicago: Chicago University Press, 1994).

strategies which relied upon geographical and natural historical knowledge to articulate what the North was like, I have borrowed approaches from environmental history to write an intellectual history of an environment in a particular period. Jon T. Coleman's *Vicious: Wolves and Men in America* sets a precedent for exploring the making of a particular environment or environmental actor, examining the cultural relationships between wolves and people in American history.[25] Similarly Helen Tilley's *Africa as a Living Laboratory: Empire, Development, and the Problem of Scientific Knowledge, 1870-1950*, a history of different imperial sciences in the context of colonial relationships in Africa, constitutes an intellectual history of a particular space or place.[26]

This approach to marry history of science and environmental history has been especially fruitful for furthering our understanding of colonial interactions. Karen O. Kupperman's foundational article, "Fear of Hot Climates in the Anglo-American Colonial Experience," merges the history of medicine with environmental history to understand the particular understandings of tropical climates that Britons possessed in the early modern period.[27] By studying the history of the Arctic from a similar vantage, scholars can answer questions about the ways colonizers have understood the different, unfamiliar worlds that they encountered. This approach allows scholars to explore what narratives about particular environments emerged and why those narratives were

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[25] Jon T. Coleman, *Vicious: Wolves and Men in America* (New Haven: Yale University Press, 2004).
[26] Helen Tilley, *Africa as a Living Laboratory: Empire, Development, and the Problem of Scientific Knowledge, 1870-1950* (Chicago: Chicago University Press, 2011).
[27] Karen O. Kupperman, "Fear of Hot Climates in the Anglo-American Colonial Experience," *William and Mary Quarterly* 41 (1984): 213-240.

appealing to imperial colonizers and emigrants, even when narratives failed to accommodate or adapt to changes in those environments.

To integrate intellectual history of science with environmental history requires a vantage point that firstly considers scientific (or natural philosophical) knowledge to be knowledge of how the natural world works, broadly. Secondly, an intellectual environmental history necessitates a rejection of a notion prominent in environmental history that nature is a "real" thing and not also a social construction. Environmental historians often deploy scientific knowledge unquestioningly as the "voice of nature," as opposed to critically investigating how natural knowledge has been constituted by human investigators.[28] Historians of science, whose work is often focused around *ideas* about nature, are perfectly positioned to recognize that nature, like science, is not monolithic, and that even scientific explanations about the natural world are *narratives*, not necessarily realities.[29]

Scientific narratives about the Arctic, then, are at the crux of this intellectual environmental history. This dissertation will examine the intellectual underpinnings of

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[28] It is hard to pinpoint works that explicitly express this philosophical approach to historical studies of nature. However, there are works which exemplify this tradition better than others. For instance, Elliot West's *Contested Plains* utilizes knowledge of prairie ecology to explain conflicts between the Sioux and American settlers in Colorado. Elliot West*, The Contested Plains: Indians, Goldseekers and the Rush to Colorado* (Lawrence: University of Kansas Press, 1998). Another example is John Soluri's chapter, "Seals and Seal Hunters along the Patagonian Littoral, 1780-1960," in Martha Few and Zeb Tortorici, eds., *Centering Animals: Writing Animals in Latin American History*, 243-296. Soluri uses contemporary ecological understandings of seal behavior to explain historical seal hunting. There are also numerous historical climate studies that use environmental climate records as historical evidence. Examples that come to mind are studies which explore the Little Ice Age and other significant periods in earth's history.

[29] When scholars ask to me to compare the ideas about Arctic nature upheld by early modern Britons with climate data to give some "real" foundation to their claims, it completely misses the point; I am inquiring about understandings of nature, not "real" nature. This is a significant difference between how historians of science write environmental histories and how environmental historians write environmental histories.

assumptions about a particular climate, along with the implications of those underpinnings for the experience of colonialism in that climate.[30] Evaluating the way that early modern British visitors theorized and understood northern colonial spaces over a two-hundred-year period exposes both how the north was seen as an environment and how Britons saw themselves within that environment. A recent work which does something similar for the northern temperate zone, Anya Zilberstein's *A Temperate Empire: Making Climate Change in Early America*, demonstrates how English colonists worked to "stretch the imagined geography of the temperate zone, shifted their definitions of bodily comfort, and projected a more temperate future for [Northern New England and Canada's Maritime provinces]."[31] In the early modern period, architects of empire deployed natural knowledge to leverage claims of sovereignty and possession over colonized spaces, and in the Far North, this was no different. Zilberstein shows, as will I, that traditional strategies of "improvement" were not always sufficient to exert colonial authority over nature in extreme North American climates, and natural philosophical and medical knowledge were often complicit in reshaping colonial landscapes.

Early modern knowledge-making in the context of the Far North, broadly considered, captures how understandings of nature were shaped by the specific environmental and social contexts into which they were deployed; geography, portrayals of climate, and the strength of human bodies were contested in the early modern Arctic in

[30] Kupperman, "Fear of Hot Climates in the Anglo-American Colonial Experience."
[31] Anya Zilberstein, *A Temperate Empire: Making Climate Change in Early America* (Oxford: Oxford University Press, 2016), 8.

a way that had bearing for future generations of explorers and northern residents. How was the geography of the north known? How were northern climates perceived, why, and what actions did British imperialists take as a result of their perceptions? How did imperialists deploy ideas about the operation of human bodies in northern climates to their advantage? And how was natural knowledge leveraged to make claims of sovereignty and continued imperial presence legitimate?

Chapter Outline

This dissertation is organized nearly like a journey there—to the Arctic—and back again—to England—beginning with the earliest reconnaissance and geographical ponderings that made possible the migration of Britons to the Hudson Bay region between the sixteenth and eighteenth century. I then spend some time peeling back the corporate façade of the Hudson's Bay Company to show how Company employees understood their surroundings and the people, indigenous and otherwise, with whom they worked. Ever present are the intellectual frameworks that these Company employees carried with them, along with deeply set cultural biases which were informed by their knowledge of the world. Finally, we return to England to see how information from the Arctic was processed by Britons back home. To this end, examining the multitude of ways that Britons conceptualized the Far North from 1500 to 1800, each chapter will show how different knowledges of nature were deployed to the advantage of Great Britain in extending its empire into far northern spaces. Through these strategies and

narratives, the Far North was constructed via social-cultural, political, and scientific rationales that were controlled and crafted by British imperialists.

The first chapter, "Knowing *Meta Incognita*: Geography, History and Exploring the North, 1500-1600," examines how John Dee and Richard Hakluyt deployed knowledge about northern geography, British history, and the rhetoric of empiricism to write narratives of exploration and settlement in the Far North, called *Meta Incognita*—narratives that served Britain's imperial aspirations. Through the examination of early maps of the north, we can understand the epistemology and expectations which informed imperial expansion northwards—sixteenth and seventeenth century charts of the north depicted the physical and intellectual potential of the Arctic. In particular, John Dee, Elizabeth I's court geographer, in collaboration with the explorer Martin Frobisher, who visited the Far North beginning in 1576, married Britain's Arthurian history to existing theoretical knowledge of Arctic geography to produce a Renaissance humanist legitimization of British expansion into the far northern reaches of the New World. Despite Frobisher's failure to found a successful northern colony for Britain, his contemporary, Richard Hakluyt, recast these same explorations as repeated trials that would yield the result of successful settlement in the New World, couching British imperial expansion in the rhetoric of experiment and empiricism in a Baconian tradition. The strategies of Dee and Hakluyt to create a narrative that justified British expansion into the Far North demonstrates the deliberate creation of a long-term historical and epistemological connection between Great Britain and the Arctic that laid the groundwork for continued claims of possession by Great Britain in later centuries.

Once exploration and settlement of the Far North failed in the sixteenth century, the founders of the Hudson's Bay Company followed the example of the Muscovy Company, receiving a charter to operate a fur trade in British North America, and in particular around the Hudson Bay. This second chapter, "The Hudson's Bay Company, Great Britain, and Competing for Northern Narratives," examines two separate narratives of British sovereignty in the north, which emerged in the seventeenth and eighteenth centuries. From one perspective, the view of the North from within and the view of the North from without, competing narratives about habitability and sovereignty reflected the differing political allegiances of the Company and the English Parliament. From the view of fur trader-naturalists within the Company, life in the Far North was seen as a battle between feast and famine, as elaborated in published natural histories and Company letters; the success of the Company pivoted around food and provisioning. Meanwhile, British critics of the Company used allegations of deceit, centered around the suppression of knowledge of the Northwest Passage, to poke holes in the Company's credibility; ultimately these allegations worked to support an argument that the Company actively fabricated accounts of the difficult northern climate to prevent settlement in the Far North. The seemingly disparate case studies of eighteenth-century provisioning and a scandal between ex-Company employee Christopher Middleton and Irish Member of Parliament Arthur Dobbs reveal the complicated nature of making truth claims about northern climates, showing how different visions of the North worked to support different political stakeholders. One case study suggests the visceral reality of provisioning in the North and how it disadvantaged indigenous residents; the second suggests the potential

advantages of crafting a narrative of habitability in this context, revealing the political impetus behind stories and understandings of northern regions. Both showcase ways in which knowledge of climate and natural history worked to enforce certain narratives about the north and its residents in this period.

Remaining with the Hudson's Bay Company for chapter three, "The Uncertainty of Living: Cold Climates, Health, and Improvement in the North," I show how the connection between health and climate raised questions about the ability of the English to survive in the Far North. British residents to the Far North attested to its healthful climate, while also overlaying a European understanding of physiology, rooted both in humoral medicine and eighteenth-century iatromechanics, to justify behaviors of and attitudes towards indigenous peoples in the Far North. These ideas about northern health worked to justify the structure of the Hudson Bay Company's social hierarchy. Importantly, ideas of northern health also explained certain imperial strategies that the Company utilized; on Hudson Bay, traditional strategies for improving colonial landscapes, like draining swamps, clearing forests, developing agriculture and importing familiar domesticated animals, failed to yield the perceived results that such strategies did in more temperate and tropical parts of the British Empire. Instead, northern residents had to adopt indigenous ways of life, calling into question the possibility of living civilly in northern climates, and devised ideas of the cold that universalized the challenge of northern living. Natural histories and medical theories were created in the crucible of the Hudson's Bay Company operations in these remote places; Britons also deployed natural historical and medical ideas in a way that continually justified both a British presence and

British trade, while undermining the humanity of indigenous peoples who were subjected to British rule.

The last chapter, "Thomas Pennant, Arctic Zoology and Writing English Natural Histories of the North, 1769-1796," examines the first natural history of the Arctic world written by an elite, "professional naturalist."[32] Pennant's *Arctic Zoology* combined travel narratives to the Far North, natural histories written by Hudson's Bay Company fur traders, and the experiences of northern European colleagues like Peter Simon Pallas and Carolus Linnaeus. In the process of writing *Arctic Zoology* in 1784, Pennant formulated an approach to natural history that positioned the Arctic within an interconnected British imperial nature.[33] This vision of the "Arctic World" tapped into the eighteenth-century rise of "global" thinking, and Pennant's vision of a global Arctic resulted in a recognizable and scientifically intelligible Arctic *environment*. Pennant saw himself as a British naturalist and a British imperialist and in writing a natural history of the Arctic, Pennant sought to reinforce the northernness of Britain while also exemplifying how the Arctic was British. Pennant's activities as a naturalist invoke the same sentiments of empire that John Dee and Richard Hakluyt created in the sixteenth century, demonstrating in some regards the continuity of Arctic conceptualizations in the British mindset.

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[32] A "professional naturalist" here is someone with a classical and formal education who is embedded in natural historical exchange between collectors, museums, and other places. Often these "professional naturalists" were gentleman-naturalists, elite members of society who could afford to spend their time doing natural historical work.

[33] Anya Zilberstein, "Objects of Distance Exchange: The Northwest Coast, Early America, and the Global Imagination," *The William and Mary Quarterly* 64 (2007): 591-620.

In my concluding comments, in addition to a recapitulation of the dissertation's primary arguments, I will also interrogate future directions for early modern Arctic studies, in particular how the Arctic and other "peripheral" places beg questions of the temporal distinctions of modernity utilized by historians.

Chapter 1: Knowing *Meta Incognita*: Geography, History and Exploring the North, 1500-1600

Introduction – Meta Incognita

In the late sixteenth century, when the British began to contemplate which portion, if any, of the newly discovered Americas would belong to the Protestant island nation, there was little land to be claimed that would increase British wealth while also avoiding increased political tension with their Iberian, Catholic competition from Spain.[34] What remained after the Spanish and Portuguese land grab at the turn of the sixteenth century was a place that few people wanted: a seasonably inaccessible swath of remote land of unknown mass possessing an inhospitable climate. Knowledge of the North American Arctic was uncertain and hypothetical, consisting of competing accounts of geographical and climatic knowledge that had filtered down through the Middle Ages from the ancient Greeks and Romans. We can see this uncertainty about the North in the Elizabethan name for the place, *Meta Incognita*. The name has conjured different meanings to scholars—of economic potential or a simple statement of a gap in knowledge, but *Meta Incognita* also means "beyond the known," or the "unknown beyond."[35] In the context of sixteenth-century geography, the meaning of the term *Meta*

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[34] Ken MacMillan, *Sovereignty and Possession in the English New World: The Legal Foundations of Empire, 1576-1640*, (Cambridge: Cambridge University Press, 2006), 49.

[35] Stephen Alsford, et al, refers to Meta Incognita as the "unknown shore" in Alsford, Stephen, ed., *The Meta Incognita Project: Contributions to Field Studies* (Hull, Quebec: Canadian Museum of Civilization, 1993.) Trevor Lever refers to Meta Incognita as "unknown value," stressing the economic element of northern exploration. Trevor H. Levere, *Science and the Canadian Arctic: A Century of Exploration, 1818-1918* (Cambridge: Cambridge University Press, 1993). Chauncey Loom seconds this economical aspect to Meta Incognita in Chauncey C. Loomis, "The Arctic Sublime." 95-112, in U.C. Knoepflmacher and G.B. Tennyson, eds. *Nature and the Victorian Imagination* (Berkeley: University of California Press, 1977).

Incognita can be best understood by its relationship with knowledge-making. In particular, two related although separate narratives of empire and knowledge were formed by contemporary Elizabethan thinkers. The first, John Dee, posited that the North was British and could be known through a combination of historical investigation and exploratory voyage to test geographical theories, producing an Arctic that was part of the British Empire. The second of these narratives, crafted by Richard Hakluyt, was connected with the rise of empiricism; the North could be known through "experiment" and "first-hand experience."

Although Francis Bacon (1561-1626) published his most significant works two decades after Elizabeth I's reign ended (1558-1603), empiricism as a way of knowing the natural world had firm roots in the sixteenth century.[36] Bacon's ideas were influenced by the Elizabethan context of his life. His two most fundamental works, *Novum Organum* (1620) and *New Atlantis* (1627) entangled empirical knowledge-making with the literal process of imperial conquest and physical travel. The famous frontispiece from *Novum Organum*, of a ship sailing beyond two pillars making an incursion into unknown lands and new knowledge, serves in many ways as a reflection of Elizabeth I's *Meta Incognita*.[37] The rhetoric of experiment and discovery of the unknown, and its partnership with empire, worked in the favor of the British at this time, and it was through that lens that the most powerful constructors of British narratives of empire and

[36] Sophie Weeks, "The Role of Mechanics in Francis Bacon's Great Instauration," in *Philosophies of Technology: Francis Bacon and His Contemporaries*, edited by Claus Zittel, Gisela Engel, Romano Nanni, and Nicole C. Karafyllis (Leiden: Brill, 2008), 135.
[37] Francis Bacon, *Novum Organum* (London, 1620).

exploration during Elizabeth's reign, including John Dee and Richard Hakluyt, built an interpretive narrative of the Far North couched in the terms of discovery, experience, and experiment.

The Far North in the premodern imagination has been frequently characterized by historians as a mythological place owing to its remoteness and few, if any, non-Scandinavian and Russian European visitors.[38] However, in the English Baconian context, early modern and premodern renderings of the Arctic can be seen as *hypothetical* as opposed to mythological, and this was supported by the way empiricism was utilized to understand northern lands. Renaissance humanist traditions encouraged new interpretations of history and an appreciation for ancient Greek and Roman texts, some of which were known in the medieval West and some which were "rediscovered" when translated from Arabic to Latin.[39] The sixteenth-century imagining of the northern world, a combination of Ptolemaic geographical tradition and anecdotal evidence from a number of different texts about the north, informed the British understanding of *Meta Incognita*. In other words, these Far Northern places were not made frivolous by stories that seemed fantastical; existing knowledge, as presented by Ptolemy, Strabo, and others was considered largely credible and plausible.

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[38] For instance, the Vikings had been in the far north by this period, although Denmark's colony in Greenland had failed during the centuries after the Black Death.

[39] Germaine Warkentin and Carolyn Podruchny, *Decentring the Renaissance: Canada and Europe in Multidisciplinary Perspective, 1500-1700* (Toronto: University of Toronto Press, 1996); W.G.L. Randles, *The Unmaking of the Medieval Christian Cosmos, 1500-1760: From Solid Heavens to Boundless Aether*, (Ashgate: Aldershot, 1999); Angelo Mazzoco, *Interpretations of Renaissance Humanism* (Leiden: Brill, 2006).

Against this backdrop, members of Elizabeth I's court, primarily geographer John Dee, and chronicler Richard Hakluyt, wove proto-nationalist narratives which positioned Britain as the rightful possessor of the Far North, making the theoretical geography of *Meta Incognita* even more important to Elizabeth I. The goals of Dee and Hakluyt's works were explicit: create a rationale that would motivate empire-building in the New World. This approach spawned a need to establish a physical presence in *Meta Incognita* to defend it against sovereignty claims from foreigners, but also demanded verification of the geography of the north in accordance with sixteenth-century geographical science. Both Dee and Hakluyt employed natural philosophical perspectives of experiment and experience to strength their interpretation of northern geography and to position Britain as the natural explorer and discoverer of *Meta Incognita*. Hakluyt in particular framed voyages of exploration as repeated trials towards discovery and successful establishment of English power more globally.

Armed with theoretical geographical knowledge of *Meta Incognita* and what was perceived to be a legitimate historical claim on the north, John Dee and Richard Hakluyt framed the "unknown beyond" as a place that could *become* known through experimental exploration and settlement. English claims of sovereignty in the Far North, which pulled from history, geography, and sixteenth-century legal codes, have been addressed elsewhere.[40] By situating this British narrative in the context of changing epistemological frameworks of empiricism, the rationale for depicting *Meta Incognita* as legally British

[40] MacMillan, *Sovereignty and Possession in the English New World*; Regard, Frederic, ed., *The Quest for the Northwest Passage: Knowledge, Nation, and Empire*, 1576-1806 (London: Pickering and Chatto, 2013).

becomes more clear, both for establishing the imperial grounds for exploration and clarifying the boundaries of northern geography.

Historians of science traditionally have not described sixteenth-century geography or exploration as "experimental," and although in the sixteenth century, *experientia* and *experimentum* were often interchangeably used, I will use "experimental" for a number of reasons.[41] Its adjectival sixteenth-century counterpart, "experiential" (from *experientia*) does not quite accomplish what "experimental" (from *experimentum*) does here. While "experiential" certainly captures the outcome of repeated trials, it does not encompass the secondary meaning that "experiment" began to acquire by the seventeenth century, which is the aspect of "experiment" that confers striving or seeking some outcome (here, geographical knowledge) through an intervention (here, exploration) into nature.[42] "Experimental" more forcefully connotes both the context and the approach by which the British began to explore *Meta Incognita*. These lands were *meta incognita*, "the *unknown* beyond."

Historian Ken MacMillan has described the Arctic voyages planned by the British as "speculative."[43] Both the destination and the outcome of travels to these places was unknown, yet knowable. Arctic exploration and settlement could, and did, make the unknown known through repeated trials—multiple voyages—that legitimated theoretical arguments about northern geography. "Experimental" captures what is implied in

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[41] Charles B. Schmitt, "Experience and Experiment: A Comparison of Zabarella's View with Galileo's in *De Motu*," *Studies in the Renaissance* 16 (1969): 86–87.
[42] Weeks, "The Role of Mechanics in Francis Bacon's Great Instauration."
[43] MacMillan, *Sovereignty and Possession in the English New World*, 3.

"experiential:" first-hand witnessing.[44] "Experimental" situates British northern exploration and geography in the context of the rise of empiricism, in changes underway in the sixteenth century. It is through this lens that we can see how Dee and Hakluyt assembled anecdotes of northern voyages into persuasive arguments for further exploration; Hakluyt himself invoked "experiment" in his writings and he saw each experiment or journey into the north as an attempt towards greater knowledge of northern geography and as the foundational experiment towards successful British expansion through empire.

The elements of Renaissance geography, northern exploration in Elizabethan England, and the cultural significance of Arctic exploration have all been addressed individually and form a strong foundation for this chapter. Lesley B. Cormack's *Charting an Empire: Geography at the English Universities, 1580-1620* demonstrates how geography was on the rise as a science at the same moment that the English contemplated imperial expansion.[45] A history of the early stages of geography's disciplinary development, Cormack's book explores the social and intellectual networks of geographers that developed during this period.[46] One of the central figures of this story is John Dee, who Cormack reminds us was first a geographer before becoming celebrated

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[44] For more on "experiment" and "experience," see Evan Ragland's forthcoming book*, Experimental Life: Science, Medicine, and Philosophy in Seventeenth-Century Leiden* (2019). Other scholarship which describes the early modern understanding of "experientia" can be found in Peter Dear, *Discipline and Experience: The Mathematical Way in the Scientific Revolution* (Chicago: Chicago University Press, 1995) and Peter Dear, "The Meanings of Experience," in Katharine Park and Lorraine Daston, eds., *The Cambridge History of Science: Volume 3, Early Modern Science* (Cambridge: Cambridge University Press, 2006), 106–131.

[45] Lesley B. Cormack, *Charting an Empire: Geography at the English Universities, 1580-1620* (Chicago: University of Chicago Press, 1997).

[46] Cormack, *Charting an Empire*, 4-7.

as an occultist or astrologer.[47] Dee's attitude towards empire, and merging it with geographical knowledge, was rather the trend than an anomaly.[48]

Other scholars have explored the significance of the North to Great Britain from a political and cultural perspective. Mary Fuller's chapter "Arctics of Empire" in an edited volume about the Northwest Passage situates knowledge-making in the Arctic in the political context of Richard Hakluyt's imperial propagandist text, *Principall Navigations*.[49] Not only does Fuller explore the knowledge available to sixteenth-century Britons about the North, but she explores how it was deployed in the John Davis expeditions of the 1580s.[50] The same volume sets a stage for the interplay between Arthurian legend and Arctic spaces. Peter Mancall's scholarship on sixteenth-century English expeditions in the Far North pays particular attention to the political and cultural influence that particular expeditions and individuals, including Martin Frobisher and Richard Hakluyt, had on imperialism in the Far North.[51]

Combining the rise of geography and empiricism, the imperial and political context in Elizabethan England, and the intellectual rationale for exploring the North shows that early English experimental exploration and settlement of *Meta Incognita* established the Arctic as British in this period, constructing it in a particularly English fashion. The intellectual context and significance of *Meta Incognita* works to complicate

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[47] Cormack, *Charting an Empire*, 2-3.
[48] MacMillan, *Sovereignty and Possession*, 2; 49-50.
[49] Mary Fuller. "Arctics of Empire" in Frederic Régard, ed. *The Quest for the Northwest Passage: Knowledge, Nation, and Empire, 1576-1806* (London: Pickering and Chatto, 2013), 15-29.
[50] Fuller, "Arctics of Empire," 15.
[51] Mancall, *Hakluyt's Promise*; Mancall, "The Raw and the Cold: Five English Sailors in Sixteenth-Century Nunavut;" Mancall, *Fatal Journey: The Final Expedition of Henry Hudson*.

an extant narrative that the Northwest Passage was the true reason to travel to these far northern spaces.[52] While this was certainly an undeniable part of the rationale to travel to northern lands, a focus on the Northwest Passage creates a one-dimensional narrative that pivots on economics, leading to, for instance, economic understandings of "meta incognita" to be akin to "unknown value." In this period, however, it is particularly important to explore, too, the relationship between knowledge and empire, which foregrounded the motivations of Elizabeth I's advisors. Geographical possibilities motivated expeditions that could update and alter the known geography of the north, making these expeditions exploratory and experiential. The mingled goals of geographical knowledge and imperial conquest characterized the sixteenth-century English experience in the Far North and were actively framed by proponents of imperial expansion.

John Dee and the Septentrionall Ilands: Founding a British Empire in the North

In 1577, the court geographer to Elizabeth I, John Dee, received a letter from his former teacher, Gerard Mercator, the preeminent cartographer of the sixteenth century. The letter included information from a mysterious text called *Inventio Fortunata* that "fasshioned unto us that strange place of the Septentrionall Ilands. That thereby our

[52] Frederic Regard and Sophie Lemercier-Goddard, "Introduction: The Northwest Passage and the Imperial Project: History, Ideology, Myth," in Regard, Frédéric, ed., *The Quest for the Northwest Passage: Knowledge, Nation, and Empire, 1576-1806* (London: Pickering and Chatto, 2013), 1-14. Nearly all extant literature on the British experience in the sixteenth to eighteenth centuries has the Northwest Passage at its core. Certainly this was a crucial rationale to British empire-building, but there are both historical and historiographic factors which have discouraged scholars to extend investigation beyond the geographical discovery of such a trade route.

men…might understand what account is to be made, or what Credit is to be given to the same Description."[53] Dee had sought this information from Mercator about the "Septentrionall Ilands," the sixteenth-century name for the islands that were posited to circle the northern pole, as part of a project to justify British exploration to the Far North.

A year earlier, intensifying interest in trade in the North Atlantic and potentially to the Orient had motivated English explorer Martin Frobisher to mount an expedition to look for the Northwest Passage in spring 1576. In planning for his voyage, Frobisher approached Dee for assistance and support in mapping the Far North. Planning northern voyages became a particular challenge, as the Far North represented "the boundary of certain knowledge of the region's geography."[54] Dee's involvement in the Frobisher expedition situated him at the center of a geographical dispute that was of concern to the most important cartographers and geographers of the day: what was the North like? Dee's North was, in part, a humanist one, borrowing from classical renderings of the Far North as represented by Strabo, Ptolemy, and Pliny; but he also deployed English histories to legitimate British exploration in the north.

In the process of merging geography and empire to construct a Far North which favored English sovereignty, Dee invested in a large-scale project which employed natural philosophy and empirical epistemology to weave his narrative. Thus, Dee encouraged repeated expeditions to the Far North in order to determine if the North was

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[53] E.G.R. Taylor, "A Letter Dated 1577 from Mercator to John Dee," *Imago Mundi* 13 (1956): 56-68, 56. Italics mine.

[54] Stephen Alsford, ed., *The Meta Incognita Project: Contributions to Field Studies,* (Hull, Quebec: Canadian Museum of Civilization, 1993), 2.

as other geographers had said. The purpose of travel to *Meta Incognita* was to verify geographical knowledge, whether it was the confirmation of phantom islands, a new trade route, or the existence of an open ocean.[55] The only way to confirm, to verify, was to go there. And Dee, with his status as court geographer, among other things, was in a position to rally for such experimental explorations.

Dee already had, when Frobisher sought his counsel, a strong reputation as a consultant for explorers as England's foremost geographer. Dee received his B.A. and his Master's at Cambridge, where an interest in the geographical curriculum led him to continue his studies in geography elsewhere.[56] He received formal training at the University of Louvain under Gerard Mercator and Gemma Frisius during the 1550s.[57] His friendships with Europe's premier cartographers, Abraham Ortelius and Gerard Mercator, positioned him as a credible source for geographic and navigational information. Using all of the geographical resources available to him, Dee helped Frobisher to plan his journey, as he'd assisted other explorers. Dee relied on existing maps and correspondence from other geographers to devise the most likely navigational trajectory.[58]

Inspired by the possibility of wealth and conquest for England, and supported by John Dee, Frobisher set out in 1576 to find the Northwest Passage for England, financed by English merchant Michael Lok, a key leader of the Muscovy Company, a joint stock

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[55] Phantom islands were islands that appeared on maps, but did not reflect the reality of geography.
[56] Cormack*, Charting an Empire*, 81.
[57] Ken MacMillan and Jennifer Abeles, "Introduction," in Ken MacMillan and Jennifer Abeles, eds*., John Dee, The Limits of the British Empire,* (Praeger: Westport, Connecticut, 2004. Orig. 1577-1578), 9.
[58] MacMillan and Abeles, "Introduction," 2; Cormack, *Charting an Empire*, 125.

trading company which oversaw trade with Russia. The first Frobisher expedition (1576-1577) took with it a number of navigational tools, including the state-of-the-art cartography of Mercator, "a great mappe universall of Mercator in prente."[59] Despite bringing along the best maps in the world at the time, this expedition resulted in a failure to discover the Northwest Passage and the loss of five men during a dispute with a group of Inuit.[60] While the expedition had departed Britain with mineral wealth in mind, it certainly was not an economic end that motivated Dee to continue to devise a framework for English exploration in the northern reaches of the New World. As Ken MacMillan states in his introduction to Dee's *Limits of the British Empire*, Dee's "conception of empire was not commercial, cultural, or ideological. Instead it was historical." To a certain degree this is true, but it was also deeply entrenched in the growing discipline of descriptive geography in which Dee was embedded.[61]

In 1577, with the first Frobisher expedition underway, Dee turned his attention to refining the geography of the Far North, but also to looking for ways to legitimize the English expedition in light of Spanish and Portuguese claims. The arrangement of northern geography that Dee produced bore a striking resemblance to the one his teacher, Mercator, conceived. Dee produced a map in 1582 which shows the faint outlines of the

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[59] Richard Collinson. *The Three Voyages of Martin Frobisher, in Search of a Passage to Cathaia and India by the North-west, AD 1576-8*. (London: Printed for the Hakluyt Society, 1867).

[60] Mancall, "The Raw and the Cold." Mancall makes several arguments in this article about the connection between the shaping of the North in the cultural imagination and interactions with Inuit encountered by Frobisher. The Frobisher expeditions were rather fraught with tension between indigenous people and the expedition, and this article is a good overview of these experiences. I say more about this in the third chapter.

[61] MacMillan and Abeles, "Introduction," 16.

north that would be replicated in Mercator's 1595 polar projection map.[62] Using Mercator's map to showcase Dee's understanding of northern geography is more fruitful, as Mercator included notes that Dee left off of his map. Mercator's famous polar projection map positioned the Far North in the center of the map. Most clearly, these polar projection maps showed the intricacy of the four islands in the Far North, with a large stone outcropping at the north pole (*Polus Arcticus*). The islands were separated from one another by channels that drew water from the surrounding oceans; these waters were sucked towards the north pole, where a whirlpool swallowed the water into the earth. The inscriptions on the map include some information about the inhabitants of these lands, like the "Pygmies," but primarily include geographical information about what the Far North was like. Mercator included in his map the directional flow of water towards the Pole, the likelihood of freezing, and information about the "black and very high rock" that was seated directly at the north pole.[63]

In his inscription on the map, Mercator presented information that neither invalidated nor proved earlier understandings of the North. For instance, the northeastern most island was located near a channel with "five mouths and on account of its narrow passage and rapid flow is never frozen."[64] Given that it never froze over, this would be a potential navigable passage towards the north pole. This reflected in some sense the ability of navigators to sail unimpeded by ice. However, Mercator's map also indicated

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[62] Mercator provided the details of the arrangement of northern geography to Dee, but it's hard to know if Dee or Mercator made the polar projection map first. It's entirely possible that Mercator showed a version of his map to Dee, especially as there are multiple editions of the 1595 Polar Projection map.

[63] Gerardus Mercator*, Septentrionalium terrarum descriptio*, 1595. James Ford Bell Library, [1595 mMe] All translation on this map was done by Adam Borrego.

[64] Mercator, *Septentrionalium*, 1595. Trans. Adam Borrego.

the challenges of northern environments. The channel on the southwest island, despite the island being "the best and most salubrious of all the northern regions," was frozen over three months of the year.[65]

From where were Dee and Mercator receiving these details about northern geography, if Frobisher had only recently made it as Far North as Baffin Island? By 1569, most atlases depicted the Far North as being characterized by four islands.[66] The first world map to use rhumb lines, again illustrated by Mercator, included on its northern edge the southern tips of deceptively large islands separated by riverine waterways. These islands cover the northern edge of the map, suggesting their geographical predominance – they were not, by any means, small islands. Abraham Ortelius's 1570 *Theatrum orbis terrarum*, "Theater of the World," shows a series of four large islands in the Far North, straddling the Arctic Circle.

The appearance of northern islands in the mid-sixteenth century can be connected to the discovery of the mysterious text which Mercator wrote about to Dee, called *Inventio Fortunata*.[67] *Inventio Fortunata* was the account of a fourteenth-century English friar from Oxford who travelled to the Far North and heard-tell of a cadre of Arthurian colonists who had settled in the Far North when it was conquered by King Arthur,

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[65] Mercator, *Septentrionalium*, 1595. Trans. Adam Borrego. A note: this particular polar projection map was published in 1595, and Mercator had been mining sources of information through the 1570s, including corresponding with John Dee regarding the Frobisher expedition to Baffin Island in 1576-1578.

[66] Prior to this particular portrayal of the Far North, the north was dominated by a vast northern ocean, called by Ptolemy *Oceanus Hyperboreas*. The only island included in the north was a land connected to Scandinavia, *Terra nova sive de Bacalhos*, which in a few accounts is connected to the four islands in Mercator, Ortelius, and Dee's maps. Sebastian Munster, Baskes Folio G1005 1540 (Plate 30), Newberry Library.

[67] "Inventio Fortunata" means, from the Latin, a "Fortunate Discovery" or a "Fortunate Happenstance or Accidental Discovery."

according to legend, in 530 AD. The book detailed a journey, it was explained, that "began at the last climate [of Ptolemy], that is to say latitude 54, continuing to the Pole."[68] Little is known of what the book included beyond this, but the geographical information within it, at least in part, was incorporated into Dee's and Mercator's vision of the North.

The existence of northern islands was tested repeatedly by voyages to the north throughout the sixteenth century. By the late sixteenth century, reports of northern geography confirmed several details. For example, "Groyneland is well knowen to be an ilande, and that it is not conioyned to America in any parte," in part because Basque, Dutch, English, German, and Russian whalers had all explored the eastern North Atlantic, following pods of bow and right whales.[69] The period provides, in addition to islands we know today to be real, a series of North Atlantic phantom islands, as they are called by modern map scholars.[70] This was not an uncommon premodern geographic phenomenon by any means, but the belief in these so-called phantom islands certainly led to very real hypotheses about Arctic geography that required exploration to prove or disprove them. In the case of the Far North, the four islands surrounding the rim of the Arctic Circle were not the only land at stake in disputes over northern sovereignty. Other potential islands, like Estotiland and Frisland, entered into these discussions with real, geopolitical

[68] "Letter to Dee from Mercator," 59

[69] John F. Richards, "Whales and Walruses in the Northern Oceans," *The Unending Frontier: An Environmental History of the Early Modern World*, (Berkeley: University of California Press, 2003).

[70] Phantom islands are islands that were believed to exist to people in the past, but which over time came to be removed from maps as they were proven to be fictitious. For more on phantom islands, see William H. Babock, *Legendary Islands of the Atlantic: A Study in Medieval Geography* (New York: American Geographical Society, 1922).

consequences if their existences could be verified. Estotiland, in particular, would enter into Dee's geographical arguments. Frobisher's voyages further seemed to confirm islands in the north beginning in 1576, as the English encountered the complicated Canadian Archipelago.[71] In the 1580s, continued exploration to this region with John Davis confirmed additional islands in the region. However, these encountered islands did not always closely align to Mercator or Dee's vision of the "Septentrional Islands."

Dee, from his geographical education, would have also approached northern geography with an understanding of the geographical teachings of Strabo and Ptolemy. In England, the field of geography was on the rise in universities.[72] The European geography curriculum as it existed in the 1580s typically included Strabo's *Geographica* (~ 7 BC) and Ptolemy's *Geographia* (~ 150 AD).[73] While Ptolemy provided a theoretical, or mathematical basis for geography that included astronomy and some astrology, Strabo's *Geographica* was descriptive: both history and geography were accounted for.[74] Descriptive geography in particular took hold in the sixteenth century, unsurprising given its Renaissance humanist practices.[75] While this constituted the slim canon that began to emerge in early geography at English universities, what the average sixteenth-century geographer knew (or could know) about the Far North included more than Strabo and

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[71] Richard Collinson, *The Three Voyages of Martin Frobisher, in Search of a Passage to Cathaia and India by the North-west, AD 1576-8* (London: Printed for the Hakluyt Society, 1867), 12.
[72] Cormack, *Charting an Empire*, 11.
[73] Cormack, *Charting an Empire*, 11. Ptolemy, whose *Geography* was not 'discovered' until 1406 in Europe, did not contribute much to geographical knowledge production in the medieval context, except in how he was interpreted by classical thinkers whose works were preserved through the Middle Ages in the West. Rather, Pliny and Solinus informed medieval thinking about geography and the Far North. George H.T. Kimble, *Geography in the Middle Ages* (New York: Russell and Russell, 1938), 10-11.
[74] Cormack, *Charting an Empire*, 15, 131.
[75] Cormack, *Charting an Empire*, 132.

Ptolemy. The theories suggested in Greco-Roman geographical philosophy became a target of exploration of the Far North and are even reflected in Dee's and Mercator's renderings of northern geography.

For instance, the islanded north was not exclusively considered to be an uninhabitable place. Dee would have been familiar with the theory of a utopian north, as represented by the legend of the Hyperboreans, which was popularized by Pliny's *Natural History*.[76] Hyperboreans dwelled in an idyllic pocket of habitable land in the Far North, beyond a rim of ice and cold that Greek explorers, like Pytheas, discovered.[77] These people were a favorite of the gods, which was a problem for jealous Greeks, who viewed the Hyperboreans as a primordial people who had traversed the ecumene (habitable zone) before residing in their warm, northern paradise.[78] They stole the attention of the gods and yet were an inseparable part of ancient Greek culture, having graced Delphi and Delos, two of the most sacred Greek locations, with their presence and constructive influence at some time before the Greeks, settled in their classical homeland.[79] The belief in Hyperborea, somewhere north of the north, beyond the cold, barbarian realms lent credence to the possibility of a warm open ocean and to the possibility of habitability in the Far North, a region that was otherwise supposed to be part of the frigid zone. As it happened, the climates of one of the islands depicted in Dee

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[76] Kimble, *Geography in the Middle Ages*, 10.
[77] Richard Vaughan, "The Arctic in the middle ages," *Journal of Medieval History* 8 (1982), 313-342; Umberto Eco, *The Book of Legendary Lands*, trans. Alastair McEwen, (Rizzoli Ex Libris: New York, 2013); James S. Romm, *The Edges of the Earth in Ancient Thought: Geography, Exploration, and Fiction* (Princeton: Princeton University Press, 1992.)
[78] Romm, *The Edges of the Earth in Ancient Thought*, 65
[79] Romm, *Edges of the Earth*, 65.

and Mercator's maps was considered to be "salubrious" and inhabitable.[80] Thus the idea of inhabitable northern islands was not new to the sixteenth century, as evinced by the Greek belief in Hyperboreans.

In addition to representing what he believed northern geography to look like by incorporating classical and Medieval understandings of geography, Dee mounted an argument to legitimize English exploration of the North and to defend the Frobisher expedition from Spanish and Portuguese critics. The Renaissance humanist tradition in which Dee was situated saw with it a new appreciation for history, including the history of England itself. In honoring his patroness Elizabeth I, Dee delved into Britain's history, along with the geographical sciences, to legitimize the British claim to the Far North. Dee's role in empire building, which historians through much of the twentieth century had considered of limited influence on England's imperial trajectory, underwent a dramatic revision in 1976. With the discovery of a dossier Dee assembled at Elizabeth I's bequest in the mid-1570s, after the first Frobisher expedition and after a meeting with Abraham Ortelius about what Frobisher had discovered, entitled "Brytanici Imperii Limites," Dee became known by modern scholars for more than popularizing the term "British Empire."[81]

Dee had a number of geographical reasons for staking an English claim on the North. Part of his argument hinged on the uncertain location and constitution of the

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[80] Gerardus Mercator*, Septentrionalium terrarum descriptio*, 1595. James Ford Bell Library, [1595 mMe] All translation on this map was done by Adam Borrego.

[81] MacMillan and Abeles, "Introduction," 2.

"phantom island," Estotiland. Estotiland was perceived by the Spanish to be connected to the mainland of the New World, which made it part of a Spanish land claim. Dee, however, insisted that Estotiland was an island, in the tradition of the Ortelian representation of the northern world. If it was not part of the mainland, then Spain could not claim sovereignty over it.[82] Disagreeing with Ortelius, who claimed that Estotiland was only 30 degrees longitude west of London, Dee argued that Estotiland was actually much farther from England, as much as 50 degrees longitude West. This distance led Dee to argue that the Spanish were unlikely to bother to make the journey so far to the northwest.

To strengthen his claim against the Spanish, Dee invoked the fifteenth-century accounts of earlier explorers, namely the Venetian brothers, the Zenos, who identified and named Estotiland as an island.[83] The Zenos' account included descriptions of the inhabitants of Estotiland, who "cultivate their fields and brew beer. Their territory is rich in woods and groves. They fortify their many cities and castles with walls, and are familiar with ships and navigation."[84] A place supporting such a large and sophisticated civilization, previously undiscovered, was seen to be so large that subsequent readers of the Zeno account were convinced that the brothers were in the New World. Dee wrote that those who supported Spanish claims to these places had not fully investigated the

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[82] MacMillan and Abeles, "Introduction," 13.

[83] The Zeno Brothers also identified an island called Drogio, which Dee discusses, but which is geographically less significant in these arguments about sovereignty and possession. Drogio, unlike Estotiland, was a land full of cannibals and barbarians. It was Drogio that Dee considered to be connected to the mainland and not an island, whereas Estotiland was an island (potentially Baffin Island, according to some historians).

[84] Dee, *The Limits of the British Empire,* 37.

Zeno accounts, as "they clearly represented the island of Estotiland to us as a continental land mass."[85]

In addition to establishing geographical reasons for why the British could legally explore and settle parts of Arctic North America, Dee also explored Britain's past to establish Britain's legitimate claim on the north. As indicated in *Inventio Fortunata*, parts of the Arctic had been, at one point, Arthurian. Dee's digging into the history of Britain, although a carefully curated vision of England's past, led to the creation of a historically legitimate claim to the Far North, one which could stand up to the political tensions of expanding into the New World in the late 1500s. In order to confront Spain and Portugal's claim to the New World, as determined by both papal bull and the Treaty of Tordesillas, Dee established an Arthurian Arctic which supplanted all later claims made by Iberian rivals.

Dee's British history of the North was twofold. The first aspect of his history came from the legendary story of the Welsh royal, Lord Madoc (sometimes seen as Lord Madog) who, escaping the fratricidal intentions of his brother, traveled to the New World in 1170, making the discovery of the New World a Welsh one. Madoc, Dee argued, being Welsh, was the ancestor of the Welsh Tudors, Elizabeth I's forbearers. To Dee, Welsh meant old Britain, following Britain's nationalist stories of itself that connected it to the old Roman Empire.[86]

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[85] Dee, *The Limits of the British Empire*, 38.
[86] MacMillan and Abeles, "Introduction," 16; Dee, *Limits*, 44; Robert Tombs, *The English and their History*.

The second connection between the Far North and Britain, according to Dee, that antedated the Iberian claim to these regions, as referenced, was the Brut history of England that culminated in Arthur's kingdom. Brut referred to a Roman soldier, Brutus, who legendarily unified Scotland and other parts of old England under the Romans and was an ancestor of King Arthur himself. In 530, according to Dee's historical research:

> King Arthure not only conquered and got vunder his subiection the ilandes of Irlande, Iseland, Groenland, Friseland…with the lesser Ilands appertaninge to the said Friseland, which are many…, but even vnto the North Poll also, in manner did extend his iurisdiction and sent colonies thether, and into all the iles bewene Scotland and Irland, whereof some are thus named Griseland (by Iseland), Farre Ilands…and the Iles of Orknay. And also seinge Grocland (beyond Groenland) did receive his inhabitants (a colonye of Swedens the most parte) send by Kinge Arthur, yt is probably…that not only the foresaid Friseland with the appurtenances, but also the population pretie Ile Icaria was by his folke also possessed.[87]

In particular Dee needed to justify the English possession of Estotiland, to which he had also made geographical arguments for British ownership. In his historical argument, Dee claimed that Arthur also took possession of Estotiland in his conquest of the North Atlantic. The sixth-century Arthurian colonists described in the fourteenth-century *Inventio Fortunata*, mentioned earlier in this chapter, testified to Arthur's conquest of the Far North. This account was seen to firmly establish a British claim on the Far North, for if Arthur had conquered the Arctic, it was a historical claim which predated those made by Spain. In the British mindset, this historical claim left England in possession of the entire eastern coast of North America beyond Florida.[88]

Combining both the geographical claims about Estotiland, the Welsh tradition of New World Discovery, and the concept of the Arthurian Arctic, Dee created a strong

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[87] Dee, *Limits of Empire*, 46.
[88] Dee, *Limits of Empire*, 13.

legal claim for English sovereignty over the New World, antedating claims from Spain. The islands in the North Atlantic, phantom and otherwise, were open for the taking, and Frobisher's travels and subsequent claims could be seen as legitimate. Following Justinian legal codes dating back a millennium, Dee warned Elizabeth that until England settled or patrolled these realms, they would be under risk of conquest from Spain, despite the legality of English presence.[89] What England required was some form of sovereignty that would last in perpetuity, such as an English colony.

In the midst of Dee's attempts to legitimize English sovereignty in the Far North, Martin Frobisher planned to undertake continued voyages to Baffin Island. During Frobisher's second expedition to seek the Northwest Passage in 1577, unable to find a path farther into the Arctic, Frobisher and his men found what was thought to be gold on a tiny island south of Baffin Island, called Kodlunarn.[90] A reliable source of gold supplemented a desire for a colony, and what began as an experiment in exploring northern geography became an earnest attempt at the first English settlement in the New World. Frobisher, spurred by positive reports of gold having been assayed from the ore he brought back to England, returned to tiny Kodlunarn for a third and final time in late 1577 with a larger crew that would constitute a small mining colony, supported by financial backers from the Muscovy Company, including Michael Lok, and the Crown. The idea of a colony here was supported in part by a belief of Frobisher's crew that the region could be habitable for Europeans, while also yielding lucrative mineral resources.

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[89] MacMillan and Abeles, "Introduction," 1, 13.

[90] The island was known to the local Inuit as Kodlunarn, translated to something like "white man's island," while the English called the island Countess Catherine of Warwick Island.

The colony would also provide an answer to Britain's imperial concerns in regard to sovereignty in the New World. The settlement would show other New World powers back in Europe that the British were establishing a permanent claim to these areas of the world.

Frobisher's expedition, consisting of 15 ships and nearly 400 men, including the ships' crew, miners, and other personnel who would run the mining operations in the North, was one of the largest fleets in maritime exploration history. This was an experiment on a grand scale, made possible by a potential source of gold—and the assumed proximity of the Northwest Passage.[91] On the island, Frobisher's men established several buildings, which was located in the 1980s by an archaeological team supported by the Canadian government in the late-1980s and 1990s. Frobisher's base camp on Kodlunarn included the remnants of a masonry building, a smithy, and an assay shop to survey the recovered ore.[92]

The proposed settlement encountered challenges before it had much of a chance to get started. Construction materials were lost when the ship freighting it was lost to the ice. The alleged gold was discovered to be fake.[93] The island was abandoned, but not

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[91] Mancall. "The Raw and the Cold," 3-40.

[92] Reginald Auger, Michel Blackburn, William W. Fitzhugh, "Martin Frobisher's Base Camp on Kodlunarn Island: A Two-Year Time Capsule in the History of Technology," in Stephen Alsford, ed., *The Meta Incognita Project: Contributions to Field Studies*, (Hull, Quebec: Canadian Museum of Civilization, 1993), 53-80, 57.

[93] There is something of a story here. The original sample that Frobisher brought back to England with him after the first and second voyages was assayed by an alchemist named Jonas Schutz, who was renowned for extracting gold from ore. The second voyage returned to England with 900 pounds of rock to be assayed; the results of an initial assay were considered to be positive for gold. Later, a different assayer investigated the rock and reported that there was no gold, which completely unsettled the plans for the mining colony in the long-term.

before the expeditionary members planted English staples "to prove the fruitfulnesse of the soyle against the next yeare" and created caches of the remaining supplies.[94] Back in England, the Frobisher expeditions were declared a failure, because the colony could not support itself in the harsh winters, and there was no extractable material wealth on the island. Additionally, relationships with the indigenous people in the region continued to be tense.[95] While the Frobisher expeditions were some of the most widely publicized travels of the day, reports of its failure were also disseminated widely.[96]

Richard Hakluyt's Experimental Exploration, An Experiment in Empire

While the sixteenth-century colony and geographical quest for the Northwest Passages can both be counted as failures, there was one person who turned the narrative of failure on its head to support the concept of English northern hegemony, following different strategies as compared to Dee, but which fulfilled similar ends. Hakluyt's vision of a British Empire was not unlike Dee's; for example, both invoked King Arthur to determine the geographical extent of British sovereignty.[97] Hakluyt reframed the narrative of failed attempts at exploration and settlement into repeated trials or experiments. The end result of these trials could be successful English expansion into the

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[94] George Best, as quoted in Robert McGhee and James A. Tuck, "An Archaeological Assessment of Qallunaaq Island," in Stephen Alsford, ed., *The Meta Incognita Project: Contributions to Field Studies*, (Hull, Quebec: Canadian Museum of Civilization, 1993.), 7-27: 8.

[95] In particular, the Frobisher expedition took captives in response to the loss of five Englishmen in an Inuit skirmish during the first expedition. Relationships with the Inuit of the region did not improve much over the next couple years. For more on this, see Peter C. Mancall's "The Raw and the Cold."

[96] Alsford, *The Meta Incognita Project,* 2.

[97] Matthew Day, "Imagining Empire: Richard Hakluyt's *The Principal Navigations* (1598-1600) and the Idea of a British Empire," *Journeys* 3 (2002), 1-28: 17.

New World, but only if the Crown and independent adventurers continued to make these experimental attempts at exploration, discovery, and settlement, even in the face of failure.

Hakluyt collected and documented the experiences of the English in the Far North and elsewhere. Because he documented these travels after they had been completed, Hakluyt had the opportunity to frame deliberately events to support his imperial agenda of English expansion. He positioned Britain at the heart of a burgeoning and inevitable empire, made possible through experiment, that would lead to expansion and Protestant evangelizing. Hakluyt, educated at Christ Church College at Oxford, can be attributed with establishing "the standard for descriptive literature of English exploration and discovery."[98]

However, while Hakluyt would come to have Elizabeth's ear, Hakluyt's fame was made in the dissemination of stories about English navigational feats around the world. Hakluyt's aim with his chronicling of English exploration in two primary publications, *Divers Voyages* (1582) and *Principall Navigations* (1589) was to show that the English had "the right…to claim and possess these lands" that they encountered.[99] For Hakluyt, the combined powers of geography and narrative could be wielded to persuade readers that there were opportunities for the successful growth of the British Empire in the New World, and that stories of English exploration could showcase the successes of exploration of the New World. That exploration had to be accompanied with

[98] Cormack, *Charting an Empire.*
[99] Mancall, *Hakluyt's Promise*, 93.

settlement.[100] These opportunities existed in spite of failures, such as the challenges and problems associated with the Frobisher expedition. For Hakluyt, just because this particular settlement was unsuccessful did not mean that later settlements would be as well.

Historian Peter Mancall explains that Hakluyt bolstered his argument by highlighting the problems that would be solved by English expansion, including overpopulation in English prisons and in general on the island nation.[101] One of these particular problems transcended the material, however. Citing a 1577 epidemic in Oxford and a 1580 earthquake, Mancall claims that the influence of these catastrophes created an apocalyptic attitude in the English, leading to a general belief that God was punishing England. Mancall associates this attitude with Hakluyt, reflected in his desire to "marry the twin goals of exploration and evangelization," leading Hakluyt to put pen to paper for his imperial propagandist writings.[102]

While this may be so (despite the lack of mention of either epidemic or earthquake in any of Hakluyt's writings), more likely Hakluyt was perpetuating Dee's earlier interest in imperial expansion that had become popular at court and among England's intellectual elite. In the context of both English imperialism and European empire in general, religious motivations were not disconnected from imperial plans, though the Protestant flavor of English imperialism has certainly been a distinguishing characteristic of English encroachment into the New World. Nonetheless, discourse

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[100] Mancall, *Hakluyt's Promise*, 93.
[101] Mancall, *Hakluyt's Promise*, 94.
[102] Mancall, *Hakluyt's Promise*, 64.

surrounding Elizabeth's court, John Dee, and Martin Frobisher had already encouraged settlement as a predetermining factor to the success of locating the Northwest Passage.

What Hakluyt did do, however, was shape the way that English imperialism was entangled with the Far North in mainstream English society. Believing that even "disappointing missions" like Frobisher's "served the goals of the realm," Hakluyt showed how exploration and settlement in the New World was in the interest of the common good.[103] Hakluyt's chronicles of these expeditions also led him to study the expeditions of the Spanish and other global powers. He realized several things: the Spanish were successful because of their settlements, while the French accounts of Jacques Cartier suggested to Hakluyt that the northern parts of North America, including what would become New England, were an "ideal locale for colonization."[104]

Hakluyt's writings distilled the earliest expeditions of the English under Henry VII for public readership and provide for the historian an insight into the importance of the Far North in the early expeditions of the English to the New World. One must not overstate his uniqueness, however, as his work can be seen as an extension of sixteenth-century English attitudes towards imperialism, both an extension in time and an extension into a new sphere: the public sphere. Hakluyt's writings made imperial expansion and the "wider world" not just a matter for Elizabeth's Privy Council, but a matter of concern for English readers.[105] While most English settlement turned southwards towards a better climate, the Far North maintained a certain strategic importance.

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[103] Mancall, *Hakluyt's Promise*, 59
[104] Mancall, *Hakluyt's Promise*, 88.
[105] Cormack, *Charting an Empire*, 136.

Richard Hakluyt's 1589 and subsequent 1598 editions of *Principall Navigations* reiterated not only the proto-nationalist aspirations that John Dee's publications had in the late 1570s, but also the entangled relationship between northern exploration and the rhetoric of experiment. On the one hand, Hakluyt's texts can be seen, from a 30,000-foot view, to be an assemblage of trials of navigation and exploration towards imperial ends nearly akin to Baconian natural historical collecting. Hakluyt in the preface to the second edition wrote that he wanted "to gather likewise, and as it were to incorporate into one body" the tales of voyages by British merchants, explorers, and others.[106] According to Francis Bacon's plan for natural philosophy, the first phase on the quest to universal truth was encapsulated in the process of collection and description of specimens.[107] Although Bacon's plan was not yet published and Hakluyt cannot be said to be following in Bacon's ideal for natural philosophical epistemology, Hakluyt's process for collecting and sharing information about British exploration was meant to express a particular argument that he held to be true: that there was something to be gained in the repeated attempts at exploring the Far North.

The gains from exploration and settlement in these locations were not only economic, although many of the letters, accounts, and other documents that Hakluyt includes in *Principall Navigations* reference material wealth. Hakluyt had another agenda; in addition to glorifying England and the British Empire in a global setting, he

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[106] Richard Hakluyt, *Voyages and Discoveries: The Principal Navigations Voyages, Traffiques and Discoveries of the English Nation*, edited, abridged, and introduced by Jack Beeching (New York: Penguin Books, 1972), 34.

[107] Steven Shapin, *The Scientific Revolution* (Chicago: University of Chicago, 1998), 85-96.

believed that the many explorations and expeditions of British navigators allowed for the acquisition of geographical knowledge about new places, which served imperial efforts to make appropriate claims to these far flung lands. He described that "in this our attempt [at ancient and late navigations] the uncertainty of finding was far greater."[108] Repeated attempts at exploration did not result in "golden success, …deductions of colonies, nor attaining of conquests."[109] The potential windfall of British voyages was not material in the same way that it had been for the Spanish and Portuguese. Rather, the windfall was engaging with and revealing the unknown, of gleaning knowledge about these places.

Hakluyt's imperial agenda can be perceived in the curation of the texts within the work itself. The language within the texts—some of which were written by Hakluyt, but some which were taken directly from other sources—recapitulated the notion of "experimental" exploration and settlement. This is perhaps most overtly seen in a 1527 letter from Bristol merchant, Robert Thorne, to the English ambassador in the court of Charles V, the King of Spain and Holy Roman Emperor. Thorne had information about the Northwest Passage, the existence of which in 1527 was contentious. Thorne supposed that the Far North was inhabitable, unlike what the Ptolemaic worldview suggested. His solution to support this position was "experiment":

> But it is in general opinion of all cosmographers, that passing the seventh clime, the sea is all ice, and the cold so great that none can suffer it. And hitherto they had all the same opinion, that under the equinoctial line for much heat the land was uninhabitable.
>
> Yet since (by *experience* is proved) no land so much habitable nor more temperate. And to conclude, I think the same should be found under the north, if it were *experimented*.
>
> So I judge, there is no land unhabitable, nor sea innavigable.[110]

[108] Richard Hakluyt, *Voyages and Discoveries*, 34-35.
[109] Hakluyt, *Voyages and Discoveries*, 35.
[110] Hakluyt, *Voyages and Discoveries*, 50-51. Italics mine.

The challenge with this letter is knowing its original form. If it was translated from Latin, then the choice of words we can know to be Hakluyt's. Either way, Hakluyt's inclusion of the letter suggests a powerful endorsement of Thorne's position. Thorne writes of both experience and experiment. He cites experience as the key to proof: he knows the world to be a certain way because he had explored it. In this instance, he knew that despite what cosmographers said, the equatorial regions were not uninhabitably hot, because he had been to equatorial regions. He theorized, then, that this may be the same for the Far North and for cold. He suggests a way to make sense of this possibility: experiment. Go to the North and determine through experience of the place first hand if that is the case.

In general, accounts of exploration included in *Principall Navigations* were positioned by Hakluyt within the text as a series of attempts or trials to discover knowledge about the Far North. The directives, signed by Sebastian Cabot, for the 1553 Northeast Passage voyage to Cathay (China) by Sir Hugh Willoughby and Richard Chancellor encouraged the explorers to "give advertisements of your proceedings" in part to share information about foreign geography, "which were to all cosmographers unknown."[111] Hakluyt described Frobisher's voyages to the Baffin Bay region to be about "further discovering of the passage to Cathay."[112] This suggested a certain continuity in goals between earlier and later voyages; they were about gaining knowledge to completion, casting each voyage as a trial towards the jointly held end of discovery.

[111] Hakluyt, *Voyages and Discoveries*, 59.
[112] Hakluyt, *Voyages and Discoveries*, 188.

By 1586, when John Davis returned from the second of his explorations in the North, he described himself as then having "experience of much of the northwest part of the world, and I can assure you upon the peril of my life, that this voyage may be performed without further charge," or expense, as Davis now had the knowledge of these northern parts, from his repeated trials.[113] The title of John Davis's account within Hakluyt's text was "The second voyage attempted…for the discovery of the Northwest Passage." The geography of the Far North was tested by English explorers and adventurers who travelled there, and Hakluyt saw this as an experimental process of knowledge-making. In fact, Hakluyt leveraged these experimental processes of knowledge-making as an imperial boon or gain, and even a rationale for continued imperial travel to such locations.

Conclusion

A deeper investigation into the history of the Far North positions Britain not only as the explorer of northern lands, but potentially as being itself far northern. The ancient Greeks, who knew peripherally of the existence of Britain and Hibernia (Ireland), and the Romans, who envisioned Britain firmly as the northernmost fringe of its empire, situated Britain in the north, nearly Arctic itself. This sentiment was not lost, however, with the establishment of Anglo-Saxon Britain. The sense of the Arctic being British had appeared in medieval Britain and the Renaissance; claims of possession and sovereignty would continue to be elaborated in British foreign policy well into the nineteenth century.

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[113] Hakluyt, *Voyages and Discoveries*, 303.

These narratives of belonging were crystallized in the sixteenth century. Imperial attitudes towards the North were articulated and cemented with John Dee and Richard Hakluyt. Dee connected the Far North to Britain's foundational mythology with Arthurian conquest and colonists and by establishing himself not only as the foremost expert on northern geography in England, but perhaps in Europe. His involvement with the Frobisher expeditions positioned him as the arbiter and verifier of northern geographical knowledge, and he controlled how that knowledge would have been disseminated. Motivated by the same desire to see England as a world imperial power, Richard Hakluyt collected anecdotes of English exploration to foreign lands like a Baconian naturalist, building and publishing a log of the attempts made towards further British power around the world, resting on the power of experimental rhetoric to position Britain as the inevitable discoverer of the north so long as it persisted in exploring, despite repeated failures to make meaningful headway in the North during the late 1500s.

Regardless of the failure to settle the Far North in the sixteenth century, this part of the world did not lose its place in the importance of early British imperial efforts. The quest to penetrate the opaqueness of northern geography would continue, as would efforts to settle northern lands. The connection between Britain and the Arctic was a deep-seated one, reinforced by cartography and the early development of geography as a science. The geographical debates, framed as they were by the politics of conquering the New World in Elizabethan times, motivated experimental exploration and settlement in the Far North, all geared towards understanding the true geographical arrangement of the Arctic and the Northwest Passage.

The seventeenth century would mark a new experience of English exploration and settlement in the Far North. The continued exploration seeking a Northwest Passage, and repeatedly failing to do so, prompted English imperialists and merchants to attempt new approaches to claiming the Far North. The legacy of English possession of the North which was established firmly in the sixteenth century would continue into the seventeenth, although with fur traders defining and shaping the experience of northern imperialism.

Chapter 2: The Hudson's Bay Company, Great Britain, and Competing for Northern Narratives

When he published his 1784 *Arctic Zoology*, the Welsh gentleman-naturalist, Thomas Pennant credited both elite European naturalists and residents of the north for contributions to his work; he sent to employees of the Hudson's Bay Company "his most particular thanks" for the "liberal communication of many zoological remarks" and "the use of multitudes of specimens of animals transmitted…to the late museum of the Royal Society."[114] Unlike itinerant naturalists who had perhaps visited the North, gathered observations of the people and climate, and then returned to Europe, Pennant's HBC correspondents, Andrew Graham and Samuel Hearne, had lived and worked for years in the Hudson Bay region as chief fur traders for the Company, taking careful records not only of the Company's commercial interests, but also writing and publishing their observations on northern peoples and nature.[115]

Fur trader-naturalists under the employment of the Hudson's Bay Company were implicitly responsible for controlling what most Britons in Europe knew about Arctic North America until the 1730s. The materials published by fur trader-naturalists and shared with professional naturalists and the public in Great Britain had significance in cultivating British understandings and British narratives of the Arctic. Fur trader-

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[114] Thomas Pennant, *Arctic Zoology* (London: Printed by H. Hughs, 1784), v2, r1.

[115] James Isham, *Isham's Observations and Notes, 1743-1749*, E.E. Rich, ed., (Toronto: The Champlain Society, 1949); Stuart Houston, Tim Ball, and Mary Houston, *Eighteenth-Century Naturalists of Hudson Bay* (Montreal: McGill-Queen's University Press, 2003).

naturalists offered insight into the British imperial experience in terms of knowledge-making and the day-to-day realities of living in these particular climates.

But in the first half of the eighteenth century, governmental scrutiny into the activities of the Hudson's Bay Company brought with it a new interest in northern operations, partly in response to questions around the legality of the Hudson's Bay Company Royal Charter.[116] With questions of the charter's legitimacy, Parliament became concerned about the accuracy of information that fur trader-naturalists and Company officials curated, as the Hudson's Bay Company came under sharp criticism for being overly secretive in contradiction to its charter's goal of representing the Crown in the north. The seriousness with which these allegations of secrecy were made and the implications they had for northern knowledge-making indicate not only that the natural historical contributions of fur trader-naturalists were taken quite seriously by the English community, but also how they were complicit in shaping, constructing, and constituting the meanings of the Arctic in this period.

As a result of increasing governmental interest in the Hudson's Bay Company's activities, two prominent but apparently contradictory representations of northern nature emerged: one, aligned with the HBC, represented a north that was harsh, inhospitable, barren and good for little but developing trade; the Parliamentary view described a north that was temperate and capable of being improved by settlement. These two contradicting norths can be explained by the political backdrop in which northern natural knowledge

[116] Glyndwr Williams, "Arthur Dobbs and Joseph Robson: New Light on the Relationship between Two Early Critics of the Hudson's Bay Company," *Canadian Historical Review* (1959) 40: 132-136.

was made, reflecting the view from the field, an inside perspective into northern living, and a view from Europe, in which imperialists felt that more could be done to conquer Arctic climates and to fulfill Britain's imperial aspirations. Both of these visions of northern nature, and the natural historical knowledge that constituted them, were co-opted by agents of empire to project different trajectories for the sovereignty of the British North, and fur trader-naturalists were at the center of these discussions. Fur trader-naturalists and their expertise was caught in a conflict between the Hudson's Bay Company and the British government regarding northern sovereignty, which came to a head in the 1740s.

Through this, we can see how disputes around the natural knowledge-making operation of the HBC (a by-product of commerce) reflected debates about scientific authority and a shift in epistemology of northern nature from the sixteenth into the eighteenth century. Tensions emerged over the way in which Britons could know the Far North; representatives of the British government upheld an earlier understanding of knowing the Far North, one founded on theory, speculation and adherence to classical knowledge, while the Company and its fur trader-naturalists, grounded at the site of northern knowledge-making, emphasized the importance of local knowledge and first-hand experience in northern operations.[117]

[117] Fur trader-naturalists often co-opted indigenous knowledge and ignored the origin of their understanding of local nature. In this dissertation, the boundaries between indigenous knowledge and fur traders is not being discussed, but this is not to dismiss that indigenous knowledge was actively appropriated.

Two case studies from the early eighteenth century can help to showcase the role that fur trader-naturalists had in shaping northern understandings while also reflecting imperial attitudes embodied by the Hudson's Bay Company and British governmental interests. Reflecting the Hudson's Bay Company's attitude towards northern nature, the first case study demonstrates how fur trader-naturalists shaped conceptions about the Arctic in the context of the relationship between Britons, indigenous peoples, food and natural history in the fur trade. I call this relationship the "myth of mutual dependency," which highlighted resource scarcity, indigenous relations, and the geopolitical disputes of the fur trade.[118] This relationship reveals how and why the British fur trader-naturalists, in support of their commercial and imperial project, used natural history to portray the far north as empty and intractable. Like in other domains of the British Empire, Britons rationalized their imperial causes; this is no less true in the Arctic, but British imperialists adapted their strategies to fit their environmental context, even as the physical demands and experiences of life in the Far North challenged their goals.

The second case study reflected the position of British imperialists and members of Parliament scrutinizing the operations of the HBC. Concern about the power of the Hudson's Bay Company in its control of information about the Far North and the allegiances of fur trader-naturalists to their employers, manifestly apparent in the Christopher Middleton-Arthur Dobbs scandal, led to a Parliamentary investigation of the claims of fur trader-naturalists in the late 1740s. These representatives questioned the

[118] This terminology is inspired by overt descriptions of the relationship between fur trader-naturalists and indigenous people.

allegiances and truth-claims of fur trader-naturalists and challenged the accuracy of representations of the north that fur trader-naturalists described in their publications. While fur trader-naturalists' descriptions of the north as intractable and unpleasant served their day-to-day commercial operations and dealings with native peoples, these descriptions were questioned by HBC critics as a deliberate attempt to deter a stronger-handed approach by the British government. Parliamentary visitors to the Bay argued that fur trader-naturalists described the north as uninhabitable in order to dissuade the Crown from becoming more involved in the Company's business. These challenges to the Company rested on the legitimacy of knowledge claims.

Background: The Hudson Bay Company's Imperial Dimensions

What began in the sixteenth century as an imperial experiment in settlement and colonization based on a constructed narrative of England's historical and geographical claim on the Far North became in time an economic empire founded on one of the few resources that the North *could* amply provide: furs and hides.[119] The emergence of the Hudson Bay Company (HBC) as a proxy for British Empire in these regions began over a century before the HBC was officially chartered under Charles II in 1670.[120] The British, struggling to assert dominance over the challenging northern lands that it had laid claim

[119] John F. Richards, "The Hunt for Furs in Siberia," in John F. Richards, *The Unending Frontier: An Environmental History of the Early Modern World* (Berkeley: University of California Press, 2003), 517-546.

[120] Binnema, *Enlightened Zeal*, 50; Harold J. Cook, *Matters of Exchange: Commerce, Medicine and Science in the Dutch Golden Age* (New Haven: Yale University Press, 2007).

to, had an exemplary model of northern empires to follow: the Russian fur-trading Empire.[121]

A fur-trading empire in the Far North could have been inspired, in part, by the British exposure to the Russian court in the sixteenth century. In an attempt to secure a trade route to the Far East, having heard of a river beyond Scandinavia that would allow ships to float to the Levant, Sir Hugh Willoughby and Richard Chancellor, sponsored by the Merchant Adventurers, departed from London seeking out the Northeast Passage in 1553.[122] Upon anchoring in a harbor in the White Sea, Chancellor and his crew—Willoughby and his ship were lost, their bodies being discovered in 1554 on the Arctic island of Novaya Zemlya—were approached by Russian representatives of Ivan IV.[123] A group of delegates led by George Killingworth were received in Moscow by Ivan the Terrible, in an effort to establish trade between England and Russia.[124]

For Richard Hakluyt, the English chronicler, this encounter was described as a moment of "Discovery" for the English.[125] The English, of course, did not "discover" Russia, but they did benefit from the encounter. Borne from this visit to the Russian court

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[121] Felicity Jane Stout, *Exploring Russia in the Elizabeth Commonwealth: The Muscovy Company and Giles Fletcher, the elder (1546-1611*) (Manchester: Manchester University Press, 2015); Felicity Jane Stout, "'The countrey is too colde, the people beastly be': Elizabethan Representations of Russia," *Literature Compass* 10/6 (2013): 483-495, 485.

[122] Eleanora C. Gordon, "The Fate of Sir Hugh Willoughby and his Companions: A New Conjecture." *The Geographical Journal* 152 (1986): 243-247, 243; Richard Hakluyt, *Divers voyages touching the discoverie of America, and theIlands adjacent unto the same, made first of all by our Englishmen, and afterward by the Frenchmen and Britons: And certaine notes of advertisements for observatioons, necessarie for such as shall hereafter make the like attempt, With two mappes annexed hereunto for the plainer understanding of the whole matter* (London: Thomas Woodcocke, 1582), 61-63; Stout, "Elizabethan Representations of Russia," 484.

[123] Gordon, "The Fate of Willoughby," 243.

[124] Gordon, "The Fat of Willoughby," 243-44.

[125] Richard Hakluyt*, The Discovery of Muscovy* (Cassel and Company Limited, London, 1904).

is the formulation of the first British shareholder trading company geared towards northern resources, the Muscovy Company.[126] After returning to England, Chancellor and Killingworth reorganized the Merchant Adventurers into the Muscovy Company, a joint-stock trading company. The Muscovy Company would support trade with Russia—particularly of English wool.[127]

Through the Merchant Adventurers, the English witnessed the wealth of the Russian imperial court.[128] At the time that the English entered Ivan's court, Russians had made advances into Siberia to bolster their growing fur trade, fattened by the climatic boon of cold temperatures, which resulted in lush, thick hides and furs.[129] This ecological serendipity made the far reaches of the northern hemisphere desirable, regardless of their great stretches of ice and tundra.[130] When the English government turned its attention back to the Hudson Bay Company's fur trade in the early eighteenth century, the comparison persisted: "[Siberia's] immense treasures were discovered, and the power of the Russian empire was greatly extended and increased. Let us make the same experiment with the countries about Hudson's-Bay…"[131]

The founding of the Hudson's Bay Company in 1670 can be seen as part of a continuous, but deeply fragmented and unstable process of settlement and conquest in the

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[126] Stout, "Elizabethan Representations of Russia," 484-485.
[127] Hakluyt, *Voyages and Discoveries*, 38; Stout, "'The countrey is too colde, the people beastly be': 483-495, 484.
[128] Isabel de Madariaga, *Ivan the Terrible: First Tsar of Russia* (New Haven: Yale University Press, 2005), 121-122.
[129] De Madariaga, *Ivan the Terrible.*
[130] John F. Richards, "The Hunt for Furs in Siberia," 517-546.
[131] Joseph Robson, *An Account of Six Years Residence in Hudson's-Bay, From 1733 to 1736, and 1744 to 1747* (London: Printed for J. Payne and J. Bouquet in Pater-Noster-Row; Mr. Kincaid, at Edinburgh; Mr. Barry, at Glasgow; and Mr. J Smith, at Dublin, 1752).

seventeenth-century English New World. Gaining a foothold in the New World had been a late-come and precarious process for the English.[132] While the strength of the British Empire perhaps did not truly amass until after 1680, the formation of the Hudson's Bay Company and the subsequent charter can be seen as an attempt to maintain sovereignty and possession over northern lands in the course of developing a substantive fur trade.[133]

The handing over of northern lands to the HBC was a strategic move for the Crown.[134] The HBC's founders sought incorporation by the British government in order to undertake "the Discovery of a new Passage into the South Sea, and for the finding some Trade for Furs, Minerals, and other considerable commodities."[135] While seeking wealth, the desire of the original HBC founders was also framed as providing a "very great Advantage to Us [the Crown] and Our Kingdom."[136] The Crown and the Privy Council could pass off the baton of northern empire-building to the HBC, and there was precedent for doing so; The Hudson's Bay Company followed the joint-stock model, which had proven successful for the English in the case of the East India Company, the Virginia Company of London, the New England Company, and the Massachusetts Bay Company. Joint-stock companies allowed "settlement to proceed at no cost to, and with little central supervision by, the monarch and privy council."[137] Intended to last seven years, whereupon it would be re-approved by Parliament, the chartered secured massive

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[132] Ken MacMillan*, Sovereignty and Possession in the English New World: The Legal Foundations of Empire*, 1576-1640. Cambridge: Cambridge University Press, 2007).
[133] MacMillan, *Sovereignty and Possession in the English New World*, 6.
[134] MacMillan, *Sovereignty and Possession in the English New World,* 3.
[135] Hudson Bay Company Charter, 1670, 1. http://www.hbcheritage.ca/things/artifacts/the-charter-and-text . Accessed 10/4/2018
[136] Hudson Bay Company Charter, 1670, 1.
[137] MacMillan, *Sovereignty and Possession*, 3

rights of sovereignty over the Hudson Bay region.[138] The Crown and Parliament bestowed on the HBC, in "perpetual succession," the rights to:

> the sole Trade and Commerce of all those Seas, Streights, Bays, Rivers, Lakes, Creeks, and Sounds, in whatsoever Latitude they shall be, that lie within the Entrance of the Streights commonly called Hudson's Streights, together with all the Lands and Territories upon the Countries, Coasts and Confines of the Seas, Bays, Lakes, Rivers, Creeks, and Sounds aforesaid, that are not already actually possessed by or granted to any of our Subjects or possessed by the Subjects of any other Christian Prince or State, with the Fishing of all Sorts of Fish, Whales, Sturgeons, and all other Royal Fishes, in the Seas, Bays, Inlets, and Rivers within the Premisses, and the Fish therein taken, together with the Royalty of the Sea upon the Coasts within the Limits aforesaid, and all Mines Royal, as well discovered as not discovered, of Gold, Silver, Gems, and precious Stones, to be found or discovered within the Territories, Limits, and Places aforesaid, and that the said Land be from henceforth reckoned and reputed as one of our Plantations or Colonies in America, called *Rupert's Land*.[139]

Included within this was a British claim to any potential Northwest Passage and any of the economic benefits connected to its discovery. It also gave the Hudson's Bay Company a huge swath of land to manage in what was considered to be a generally inhospitable climate.

As stipulated in the Royal Charter, in exchange for "Grants, Liberties, Privileges, Jurisdictions and Immunities" that had been outlined in the charter from Charles II, the Hudson's Bay Company would "yield and pay yearly to Us [The Crown], Our Heirs and Successors, for the same, two Elks and two black Beavers, whensoever, and as often as We, Our Heirs and Successors, shall happen to enter into the said Countries, Territories and Regions hereby granted." This was a nominal fee. The Crown was able to divest the management of this challenging place and still have the HBC serve as a proxy for the

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[138] Glyndwr Williams and William Barr, eds., *Voyages to Hudson Bay in Search of a Northwest Passage, 1741-1747. Volume 1: The Voyage of Christopher Middleton 1741-1742* (Hakluyt Society: London, 1994).

[139] Hudson Bay Company Charter, (1670), 1.

imperial government, whose sovereignty over what was called Prince Rupert's Land, would be recognized by outside governments as belonging to the British Empire.[140] After all, the Far North had proven to be a treacherous site for the English.[141]

The expeditions of the 1580s by John Davis had not located a Northwest Passage, and Henry Hudson, while discovering Hudson Bay in 1610, was eventually marooned by his own crew in the North.[142] Less Crown-sponsored investment seems to suggest a certain weariness with repeatedly "unsuccessful" northern adventures. Siphoning from the Far North the economic benefit it had to offer seemed more lucrative for imperial purposes than did continued attempts at exploration and settlement. England had, by the creation of similar charters, built its New World empire as settler societies, colonies throughout New Foundland, the Atlantic coasts of Labrador and Nova Scotia, and the Caribbean.[143] The Far North, a century after Frobisher's attempts, was portrayed by some as a poor location for settlement. A trading company with governmental authority could make the most of these lands by commercializing the resources that could be extracted from the region, as had been done with the Merchant Adventurers and the Muscovy Company. There was already a strong tradition of mercantilizing northern resources,

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[140] In principle, of course. The French, especially in the late seventeenth century, engaged with English HBC agents in the Hudson Bay. In fact, the factories built there served as military forts. The HBC had itself an impressive naval fleet, and the early history of the Company was a series of territorial losses and gains as forts fell to the French, especially during the Nine Years' War, prompted by the Glorious Revolution in England (1688-1697). The English lost York Factory, one of its most strategic Hudson Bay forts, until it was granted to England in 1713 under the Treaty of Utrecht.

[141] See chapter one for a discussion of the challenges and failures of early English expeditions to the Far North.

[142] Mancall, *Fatal Journey*, 1-17.

[143] Zilberstein, *Temperate Empire*, 4; Tom Griffiths and Libby Robbin, *Ecology and Empire: Environmental History of Settler Societies* (Seattle: University of Washington Press, 1997).

including walrus and whale blubber, bone and meat, and Russian furs, including otter and other fur-bearing mammals, as well as an extensive fisheries trade in the North Atlantic.[144]

It was natural history and observation of nature, however, that was essential to understanding how to operate in these locations, in tandem with the exploitation of indigenous bodies and knowledge of northern landscapes. From its foundation, the HBC was closely enmeshed with Britain's intellectual community in the seventeenth century, and throughout its existence, HBC outposts served as places for study of the Arctic. HBC employees were a reservoir of northern knowledge about Arctic phenomena and a testament to the English ability to conquer any climate with knowledge, even those perhaps not best suited to the British bodily constitution.[145] The Hudson's Bay Company served as a conduit for this kind of knowledge gathering, as had other joint-stock companies, like the Dutch East India Company had for understanding the tropics in the sixteenth and seventeenth centuries.[146] As in other imperial settings, natural history was capable of classifying, categorizing, and denoting the value of plants, animals, and minerals in foreign locations.[147] Northern landscapes were unfamiliar to the British;

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[144] Richards, *Unending Frontier.* In particular see part 4, "The World Hunt," which includes chapters on "The Hunt for Furs in Siberia," "Cod and the New World Fisheries" and "Whales and Walruses in Northern Oceans."

[145] Ted Binnema's foundational text *Enlightened Zeal: The Hudson's Bay Company and Scientific Networks, 1670-1870* articulates the two-hundred-year history of relationship between formal scientific institutions, like the Royal Society of London, and the Hudson's Bay Company. In general, scientific exchange increased over time after a period of secrecy. Some of the Hudson's Bay Company's early governors and investors were also Fellows of the Royal Society like Peter Colleton and Christopher Wren.

[146] Cook, *Matters of Exchange*, 177-180.

[147] Londa Schiebinger, *Plants and Empire: Colonial Bioprospecting in the Atlantic World* (Cambridge, MA: Harvard University Press, 2004); Daniela Bleichmar, "Visible Empire: Scientific Expeditions and Visual Culture in the Hispanic Enlightenment," *Postcolonial Studies* 12 (2009): 441-466; Ryan Tucker

natural history helped the British to make sense of the animals, plants, and climate, and of the challenges that accompanied northern living, including maintaining human health, growing gardens, taking care of livestock, provisioning their forts, exploring difficult topographies, and operating in isolated locations.

Practitioners of natural history in the Far North during this period were primarily British fur traders who kept journals about their experiences and their surroundings, wrote letters to one another describing their daily living, or published their observations as natural histories. Although first and foremost fur traders, these individuals were important collectors of observations and matters of fact pertaining to northern nature. As established in Harold Cook's *Matters of Exchange:*

> the discovery of the world did not take place in libraries or lecture halls alone, nor only among people we would today call 'intellectuals.' Ship captains, officers, sailors and surgeons reported on their experiences and systematically collected information and objects. Diplomats, merchants, and travelers in foreign lands took careful note of what they saw and sent back specimens.[148]

Cook elaborates: he points to various participants of the medical marketplace and hobbyists as contributors to natural knowledge production as well. I would add to this that fur traders were instrumental in transmitting knowledge about nature as well. Fur traders were often the first Europeans to venture into unfamiliar, "wild" lands, as they did in Siberia, the American West, and in this case, the North American Arctic.[149]

Jones, *Empire of Extinction: Russians and the North Pacific's Strange Beasts of the Sea, 1741-1867* (Oxford: Oxford University Press, 2014).

[148] Cook, *Matters of Exchange*, 2.

[149] Robert M. Utley, *After Lewis and Clark: Mountain Men and the Paths to the Pacific* (Lincoln: University of Nebraska Press, 2004); John Bockstoce, *Furs and Frontiers in the Far North: The Contest among Natives and Foreign Nations for the Bering Strait Fur Trade* (New Haven: Yale University Press, 2010).

In this regard, fur trader-naturalists were the most important transmitters and producers of natural historical knowledge of the north. We can see this not only in their daily experience of local climates and their interrelationships with indigenous conveyors of natural knowledge, but also in their intimate interactions with the animals and plants of a particular locale. The livelihood of fur traders was contingent upon their understanding of the environment, which is why relationships with local peoples were so important, especially initially.[150] Fur traders were required to know the patterns of migration for a variety of animal species. They had to learn or possess knowledge of animal anatomy, as well, so as to best preserve hides and furs, and to know about beneficial parts of an animal (for instance, the glands of beavers which produce castoreum). They also had to know how seasonal changes might affect their hunt for both furs and hides, but also for food. The particular attention to detail that was required of fur traders in the Far North makes them easily part of this category of "fur trader-naturalists."

In the case of the fur trade, natural history was especially significant because the central operations of the Hudson's Bay Company circulated around animal bodies. Animals in this northern context took on at least three purposes: animal bodies provided knowledge for naturalists, food for both northern residents and for exportation, and the materiel to constitute the economic purpose of the Company and its charter. Central to understanding the characterizations of northern nature made by Company employees, and also publications commissioned by Parliament to inspect Company proceedings, is the complicated intersection of meanings of animals: knowledge, food, and fur. With this

[150] Stuhl, *Unfreezing the Arctic*, 17.

triumvirate at the core of Hudson's Bay Company operations, the experience of day-to-day living and the messages about the north that the Company fur trader-naturalists transferred back to England hinged on the ability of the Far North to support life. Only through supporting animal life could the Company complete its essential tasks: extract furs and feed the employees that ran the business. Natural historical knowledge, though not a crucial task of the Company, was certainly a practice that coexisted with other Company functions and operations.

Despite the initial support from the Crown, the Hudson's Bay Company's first half-century did not proceed exactly as the government had intended. Disputes about northern knowledge and allegations of deceit to maintain secrecy on the part of the Company characterized early imperial interactions between the Crown, Parliament and the Company. Varying portrayals of northern nature and subsequent believability of those portrayals were at the heart of these disputes, and allegations were slung against Company members for deliberately depicting nature in ways that protected the Company's monopoly on the region. These political disputes between the British government and the Hudson's Bay Company explain to a certain degree the seemingly contradictory ways that seventeenth and eighteenth-century English residents of the North described northern nature.

The View from the Field: The Hudson's Bay Company's Starving North

The publications of Hudson's Bay Company fur trader-naturalists portrayed the north as barren, inhospitable and intractable. This portrayal, at first, seems in opposition

to the very reason that the HBC was attracted to the Far North: the presence of life—abundant fur-bearing mammals and gargantuan flocks of summering birds. Eventually, this representation of the North as barren and inhospitable would be criticized, by Parliamentary representatives who questioned the truthfulness of these claims and, therefore, the habitability of the north. Fur trader-naturalists, even in their private letters to one another, supported this portrayal of the inhospitable north, in part because of their own experience of frequently desperate periods of feast and famine. This portrayal of a hungry, starving northern landscape served a purpose, not necessarily to obscure the reality of northern life to the British government as critics suggested, but to support HBC operations which crucially depended on exploitation of indigenous peoples. In painting an un-survivable northern environment, Britons could position themselves as saviors of indigenous people.

In the winter of 1741, compelled by the British Admiralty, James Isham, chief factor of Prince of Wales Fort at Churchill on Hudson Bay, hosted former HBC employee, ship's captain, and natural philosopher Christopher Middleton for the season.[151] During this period, Isham, frustrated often by the activities of Middleton and his crew, nonetheless assisted Middleton in his natural philosophical activities. The two worked together taking astronomical observations. Isham himself was not a novice observer of northern nature, despite receiving no accolades or even mention by Middleton. Employed by the Company since 1732, Isham was only 16 when he started

[151] Glyndwr Williams, "Introduction: The Voyage," in William Barr and Glyndwr Williams, eds., *Voyages to Hudson Bay in Search of a Northwest Passage, 1741-1747. Volume 1: The Voyage of Christopher Middleton 1741-1742* (Hakluyt Society: London, 1994), 101.

his residence on the Bay. In 1737, he had already become chief factor.[152] In 1741, at twenty-five years old, he wrote his *Observations on Hudson's Bay*.

In 1743, Isham submitted these observations of the Hudson Bay region to the "committee of the Hudsons Bay Company" in London. He entitled his report "A Small Account of the Indian Language in Hudsons Bay North America Containing 1st A Vocabulary of English & Indian, 2d An Acctt. of goods Traded wth. Discourses upon Different Subjects, 3d Observations upon Hudson Bay with. Remarks of C.C.M. upon the Effects of Cold 4th A small Acctt. of the Northwd. Indian Language, wth. A Discription of that Part of the country towards the Copper Mines." Isham claimed to have "amusd. my self with the following Observations," believing that to be bored in the Far North predisposed one to illness.[153]

Isham's *Observations* served as a governmental report and a natural history, commenting on natural phenomena, but also recording ethnological information. Much of the text was dedicated to recording the language of Amerindian peoples with whom he interacted on a regular basis in the business of the fur trade. Primarily his "Vocabulary" consisted of a number of Cree dialects, phonetically anglicized.[154] He also described many of the customs, as he saw them, of local peoples. His descriptions were not unlike others from the same period.

Isham's natural historical observations revealed the complex imperial narrative of the fur trader's relationship to indigenous peoples. Isham detailed a particular

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[152] Houston, Ball, and Houston, *Eighteenth-Century Naturalists of Hudson Bay,* 41-42.
[153] Isham, *Isham's Observations*, 4
[154] Isham, *Isham's Observations*, 5.

interdependency between "Indians" and the fur traders, a notion widely upheld in scholarship on the fur trade.[155] Isham wrote: "It's to be observ'd that those Indians that hunts at Seasons for the forts, *can not do without the assistance of the English, any more than the English without them*, for the Cheif [*sic*] of our Living is this Country's product &c. &c…"[156] In other words, by the mid-eighteenth century, the British believed that indigenous peoples needed them as much as the British depended upon the local peoples to serve as hunters, trappers, guides, bed partners, and social companions.

The fur trade itself, operating on the exchange of alcohol, food, and other supplies like firearms, steel, and cloth for furs, was contingent upon the balance of this interdependency.[157] Isham and others were well aware of the need for this relationship to continue:

> that Bewitching spirit calld. Brandy, or any other Spiritious Liquor's—which has been the Ruing [sic] of a Great many Indians, and the Cheif Cause of their Ludness and bad way's they are not given to, their being some few that Drinks none—what may may be Calld. Virtious women,—but *now their is no method Can be taken to break them from itt, without the Entire Ruing of the small fur trade in these parts*.[158]

This relationship of interdependency, outlined in other scholarship about the fur trade, certainly existed to a degree.[159] Indigenous peoples in the Far North, whose traditional subsistence practices had either been eliminated by competition with fur traders or

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[155] J.C. Yerbury, *The Subarctic Indians and the Fur Trade, 1680-1860* (Vancouver: University of British Columbia Press, 1986); Bockstoce, *Furs and Frontiers in the Far North*.
[156] Isham, *Observations*, 78. Italics mine.
[157] Carlos and Lewis, "Native Americans and exchange," 456; John Bockstoce, *Furs and Frontiers in the Far North: The Contest among Native and Foreign Nations for the Bering Strait Fur Trade* (New Haven: Yale University Press, 2010).
[158] Isham, *Observations*, 104
[159] Richard White, *The Middle Ground: Indians, Empires, and Republics in the Great Lakes Region, 1650-1814* (Cambridge: Cambridge University Press, 1991); Steven Sarson, *British America, 1500-1800: Creating Colonies, Imagining An Empire* (London: Hodder Arnold, 2005).

supplemented by the market-based economy of the English, did actively participate in the fur trade. Furs, hides, and meat were exchanged for other goods that the English could provide; indigenous peoples could visit the forts in long winters in hopes of some sustenance or goods. Fur traders were largely dependent on indigenous peoples to provide furs and food; Europeans benefitted from indigenous knowledge of the landscape and natural history. They also benefitted from the social culture of indigenous peoples, building friendships with indigenous men and women and often starting mixed-race families.

Other scholars have interpreted the relationship between indigenous peoples and British fur traders in the far north to be a strong one, perhaps uniquely strong. Houston, Houston and Ball describe the relationship as "symbiotic and mutually interdependent" in a way that more southerly encounters between indigenous peoples and colonizers were not.[160] Andrew Stuhl notes that, especially early on, British fur traders absolutely depended upon indigenous peoples to serve as local guides, a need that did not shift until British residents became their own experts on northern knowledge.[161] None of these authors, however, attest to how deeply embedded and how comprehensive mutual dependency was in the north, and in particular how important it was to mobilize both the appearance and the reality of the north as a habitable space for the British. Most of the imperial narrative and its influence on representations of nature hinges upon the existence and operation of this "myth."

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[160] Houston, Houston, and Ball, *Eighteenth-Century Naturalists*, 9
[161] Andrew Stuhl, *Unfreezing the Arctic*, 18-38.

Mutual dependency in the British North American fur trade consisted of the exchange of furs, alcohol and other goods, but more importantly, the exchange of *food*. A steady supply of food was the barest necessity for Europeans and indigenous peoples alike. It was the availability of food that allowed the British imperial project of the fur trade to continue in challenging northern landscapes. The material significance of food has been overlooked in scholarship on the British fur trade, but provisioning food was integrally linked to the fur trade, natural history, and to the British imperial mindset about the north.

The availability of food directly correlated with how welcome indigenous peoples were at the forts: would they receive imperial, paternalist "compassion," as suggested by mutual dependency? Or, citing food scarcity, would Britons leave indigenous peoples to munch on the dredges of horse fodder and the hides of the beaver they meant to trade?[162] The success of mutual dependency depended, largely, on the food availability of the British. Fur trader-naturalists and chief factors accounted to one another the numbers of indigenous peoples who wintered over in their forts. At James Fort in February of 1760, "4 Familys of Indians" wintered over, "almost starved;" the chief factor reported to Humphrey Marten that "they never knew provisions so scarce att this place."[163] Presumably, these four families received supplies, but the letter failed to report.

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[162] Both of these occurrences are factual. For more on the deliberate starvation of peoples in imperial context, see Mike Davis, *Late Victorian Holocausts: El Niños, Famines, and the Making of the Third World* (New York: Verso, 2001).

[163] Humphrey Marten. "Humphrey Marten to James Isham, 18 February 1760, James Fort." HBCA 4M101

The British, despite their professed belief in a business arrangement which mandated "mutual dependency" to maintain successful trade, found it very difficult to support this interdependency in two ways. First, they attributed the failure of interdependency, when it did fail, to the attitudes and work ethic of indigenous trappers and fort visitors, as opposed to, for instance, their own unwillingness to divide food more equitably among all of their employees. In his *Observations*, Andrew Graham, another chief factor and fur trader-naturalist, spoke to an expectation of exchange, even when it was not specifically an exchange of goods or services:

> Gratitude is utterly unknown amongst them; they receive favors and beg all they can, but never think themselves under obligation to the donor. Those who live upon the Factory almost the whole year round, and are given food and clothes gratis, yet if desired to do the least service immediately ask, what am I to have for it?[164]

This exchange, however, does not suggest mutual dependency, but rather how Graham perceived himself to be a benefactor to the local indigenes. In one powerful commentary in a letter from Ferdinand Jacobs in 1769, Jacobs describes to John Fowler that:

> It is common to have large numbers of starved Indians depending on the Factories in the winter. I have this winter above 50 to provide for, tho' I have kept most of them from the Factory as long as possible, notwithstanding they have been a great charge and heavy load, on the hard bread, oatmeal, pease, prunes, etc. and I now for some time past have 108 Indians to maintain and but 24 men with 2 or 3 lads that are able to shoot, and some of them good for little at killing Geese.[165]

Underlying these winter visitations from nomadic communities of Cree and Athapascan peoples is the expectation of exchange of goods, services, or at the very least, deference,

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[164] Andrew Graham, "Observations on Hudson's Bay by Andrew Graham; Twenty-Five Years in the Company's Service, Fifteen Years Chief Factor at Severn York and Churchill Settlements" in Glydnwr Williams, ed., *Andrew Graham's Observations on Hudson's Bay, 1767-1791* (London: Hudson's Bay Record Society, 1969), 153.

[165] Ferdinand Jacobs, "Ferdinand Jacobs to John Fowler, 26 April 1769, York Fort," HBCA 4M101.

especially as the British factors saw themselves as benevolent donors in this relationship of "mutual dependency." Jacobs indicated that he would have been less hard-pressed to care for these visitors had he felt they were contributing something to the hunt. Instead, he describes them as "good for little." Interestingly enough, the remainder of Jacobs's letter to Fowler includes instructions for properly salting geese, demonstrating the integrated nature of food, provisioning, and exchanges between British traders and indigenous peoples. This suggests that mutual dependency failed because the indigenous peoples were not fulfilling their end of the "bargain," in which the Britons were benevolent contributors to the well-being of the natives.

The second way in which "mutual dependency failed" can be more directly attributed to the British unwillingness to fairly share in their spoils, in part because of their perception of themselves as culturally superior. It is these cases in particular that have shaped my discussion of the British relationship between food, natural history, the fur trade, and indigenous peoples as a "myth:" ultimately, the British did not really invest in *mutual* dependency. At the very least, the British convinced themselves that mutual dependency was a prerequisite for successful trade; however, so often was mutual dependency not mutual and not interdependent that it can be interpreted as a narrative they crafted about their experiences in the Far North. And it served their purposes well, justifying the British presence in the north as benevolent benefactors.

Due to the integrated nature of food, provisioning, and the fur trade, any serious competition within the fur trade could be considered a food crisis and potentially have long-term ramifications for the liveability of northern regions. In relying upon local

peoples to provide fresh meat in addition to furs, if indigenous hunters and trappers could strike a better deal elsewhere, then the British not only lost out on furs, but on food. This is highlighted by the concerns within the HBC of the threat of "Pedlers" or "Pedlars," independent English-language trappers from Montreal—men who would go on to form the Northwest Company. Letters between Company officials in this period commented on incursions by Pedlers, who undercut a sizable amount of the Company trade. Competition with other traders also provided opportunities for indigenous people to make different choices about how they participated in the fur trade. For instance, the French fur trade is marked by assimilation into indigenous society, where able; this familiarity with Europeans could have created rationale to trade with the French, instead of the English.

One example from York Fort in 1770 connected the relationship between the beaver trade, Pedlers, and provisioning fresh meat: "The quantity of Beaver for so large a number of Indians that ever I see, for they left it behind them to trade with the Pedlers next Fall;" had they brought their beaver, "York Fort would have had above 40,000 skins this year. We cannot get any fresh provisions except now and then a few fish."[166] As a result of this competition, because it endangered both the fur trade and food provisioning, forced the Company to turn its gaze both inland and further northward. Though often cast as the first of the masculine expeditions to the North Pole, Samuel Hearne's overland expeditions northward in the 1770s were actually intended to open trade networks for furs and foods with Inuit along the Coppermine River, not to prove or disprove a

[166] Ferdinand Jacobs. "Ferdinand Jacobs to Moses Norton, 21 July 1770, York Fort." HBCA 4M101

Northwest Passage.[167] Any opportunity to increase trade, and subsequently food access, was crucial to mitigate the damage of lean times.

Lean times, which according to letters and correspondences, occurred nearly every winter and exposed the frailty and inequity that existed in the mutual relationship between local peoples and Britons. British fur trader-naturalists worried, to a certain extent, about what indigenous peoples would do if they could neither find food nor be supplied by the fort: "if this scarcity continues God Knows what will become of the Poor Indians."[168] Conditions and food scarcity worsened in the 1760s and 1770s in the midst of colonial conflicts elsewhere in the world during the Seven Years' War and American Revolution. During these times, mutual dependency failed, consistently, when food was scarce. For the British, however, scarcity in fresh meat did not mean they had nothing to subsist on, as may have been the case for local indigenous peoples.

HBC employees received food primarily via three routes. The first of these ways was a central underpinning of the fur trade itself. Not only did Cree and Athapascan-speaking peoples sometimes referenced by fur trader-naturalists as "Home Indians," "Trading Indians," and "Hunters," serve as guides and fur trappers, but they often brought fresh provisions into the forts. Letters between Isham and other chief factors, like Humphrey Marten, Moses Norton, and Andrew Graham, indicated the relief which accompanied a supply of fresh meat from indigenous hunters. In the fall of 1775, a Prince of Wales fort trader "traded upwards of 10,000 lbs of Venison from the Northern

[167] Binnema describes this as the first of these masculine explorations. Binnema, *Enlightened Zeal*, 108.
[168] Moses Norton, "Moses Norton to Ferdinand Jacobs, Prince of Wales Fort, Jan 9 1765," HBCA MF4M101.

Indians."[169] Assuming standard weights, rough calculations using an average weight of 100 pounds per deer suggests that the "Northern Indians" traded roughly 100 butchered deer to the Prince of Wales fort for unlisted supplies.

The second means by which Hudson's Bay Company employees secured food provisions was through agriculture and animal husbandry. Though only moderately successful, employees of the Hudson's Bay Company also raised crops and livestock at the forts. Met often with failure, domesticated animals often died of exposure during the northern winter or in harsh spring conditions. Chief factors at forts around the Bay would send packets of supplies to one another, upon request, accompanied by gifts of fresh meat from one gentleman to another. In March 1760, James Isham sent Humphrey Marten "two pieces of Pork and a Roasting pig."[170] Like with Isham's contributions, these gifts of food were usually sides of beef, when available, and other domesticated animals.

Raising and maintaining domesticated animals in the Far North was more challenging, arguably, than in other locations. Not only was it more difficult to keep these animals alive, but it was much harder to procure new animals when lost, and animals like oxen and horses were hugely important for the maintenance of HBC infrastructure. In March of 1777, one of the few horses at Prince of Wale's Fort was required to clear out a 22-foot snowdrift.[171] In a 1769 letter, Thomas Hopkins recounted a story in which Albany Fort nearly lost two oxen and a cow to spring flooding.[172] And in an even more

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[169] Samuel Hearne, "Samuel Hearne to Humphrey Marten, 19 January 1776, Prince of Wales Fort," HBCA 4M101
[170] James Isham, "James Isham to Humphrey Marten, 5 March 1760, York Fort." HBCA 4M101
[171] Samuel Hearne, "Samuel Hearne to Humphrey Marten, 20 March 1777." HBCA 4M101
[172] Thomas Hopkins, "Thomas Hopkins to Ferdinand Jacobs, 21 June 1769, Albany Fort." HBCA 4M101

dramatic account, a 1763 letter from Moses Norton to Ferdinand Jacobs described how "the Fort was obliged to shoot [a bull and cow] between 20 & 30 miles from the Factory, they was grown mad and toss'd 2 of our People who was Endeavouring to catch them."[173]

Not only were domesticated animals essential for work and for food, the governing committee of the Hudson's Bay Company also mandated that fort surgeons and naturalists attempt to grow a variety of food crops, experiments which typically were not successful, enough so, as shown in chapter 3, to contribute to the notion that the Arctic was not able to be improved by agricultural development. Edith Burley, in her book about labor in the Hudson's Bay Company, described how activities like hunting and gardening "were not hobbies: they were means of subsistence."[174]

The third means by which Britons received food provisions was through supply ships from Great Britain and by utilizing traditional European ways of food preservation via salting. This sort of within-Company acquisition and production of food most easily shows how fur trader-naturalist and other British residents in the Arctic were able to subvert the narrative of mutual dependency that Isham described as upholding the balance of the fur trade. Yearly, supply ships would arrive from Great Britain, bringing with them not only a year's worth of periodicals, newspapers, and letters from family, but fresh supplies of spices, flour, and other provisions to maintain an English lifestyle on the frontier.[175]

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[173] Moses Norton. "Moses Norton to Ferdinand Jacobs, 4 January 1763, Prince of Wales Fort." HBCA 4M101

[174] Edith I. Burley, *Servants of the Honourable Company: Work, Discipline, and Conflict in the Hudson's Bay Company, 1770-1870* (Oxford: Oxford University Press, 1997), 12.

[175] Houston, Ball, and Houston, *Eighteenth-Century Naturalists*, 6.

Fur trader-naturalists called these supplies "English provisions," while food procured from the Hudson Bay region were "country provisions." It was an especial predicament when "country provisions" were expended so that forts had to delve into their precious stashes of English provisions to feed starving indigenous peoples. During a particularly difficult hunting season in 1771, Moses Norton described that "to keep [indigenous peoples] from starving I was obliged to serve them out Horse Beans and Oats, ground and sifted to make them bread."[176] What could be considered a charity, however, was likely an effort to prevent the fort from offering good English supplies to local peoples; and while horses were valuable, horses could eat grasses and shrubs. Regardless of the more premium options for British fur trader-naturalists, James Isham described the challenge of supplying food: "not a morcel of fresh provisions to put in our mouth's by which itt may be sayd itt's Either a feast or a famine."[177]

The difference between feast and famine in Prince Rupert's Land, Britons believed, hinged upon the availability of fresh meat, even when salted provisions and English provisions were plentiful. The topic of salt provisions often received attention in letters between fur trader-naturalists, sparking one argument as to the best method for the sweetest meat. Isham described salt provisions at length:

> The English in thesse parts fresh'n their salt provisions in River's Lakes and Creek's, for the Season which is about 7 month's, cutting a hole in the Ice about 10 foot over, which is constantly Every Day Kep't op'n, in which their provisions hangs by a Line, tied to a pole which Lyes across the hole, which meat being hard froze is no sooner put into this hole, but itt grow's liant and Soft,t eh water Drawing the frost out which hangs on the outside 2 inches thick, and more, which must be tak'n of, or wou'd take a much Longer time before freshn'd, nay! Not fres'n a'tal. Beef, Pork, Venison &c.: that are Killd. The

[176] Moses Norton. "Moses Norton to Ferdinand Jacobs. 10 August 1771. Prince of Wales Fort." HBCA 4M101.
[177] Isham, *Isham's Observations*, 116.

> beginning of october. Are preserved. By the frost 7 month's in the year Entirely free from putrifaction and proves tollerable good Eating, as also Geese, partridges or any other fowl's, that are Kill'd at the same time and Kept with their featers and Cutt's in, Requires no other preservation to make them good and sweet but the frost, and Wholesome Eatg. As Long as the frost continues, all Kind of fishes &c. Are preserv'd after the same manner.[178]

True abundance meant that there was not only fresh meat, but a variety in types of fresh meat, indicating that the health of their fur trade and their supply of resources relied upon a diverse balance of species. Chief factors would write of their happy tidings to one another when, as Samuel Hearne updated Humphrey Marten in 1776, "Provisions is tolerable plenty. We have served two days Partridges."[179] The following year, Hearne wrote to Marten: "Partridges have been so Plenty as to enable me for some time past to serve three days a week, and my stock of fresh Venison holds it out boldly."[180]

It's important to note that fur traders were not sharing their partridge feasts with the locals, as local indigenous peoples were expected to manage their own partridge hunts, and when partridges either were thin on the ground or migrating earlier than predicted, it fell upon the forts to try to find food for their dependent indigenous populations. Importantly, plentiful populations of some species could not always overlook concerns about noticeable declines in others. Andrew Graham wrote to Ferdinand Jacobs in 1773 that there were plenty of partridges and fish, but no rabbits. He continued: "the Natives as well as us wonders what is become of them, as they were

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[178] Isham, *Observations*, 170.
[179] Samuel Hearne. "Samuel Hearne to Humphrey Marten, 19 January 1776, Prince of Wale's Fort," HBCA 4M101.
[180] Samuel Hearne. "Samuel Hearne to Humphrey Marten, 20 March 1777, Prince of Wale's Fort." HBCA 4M101.

always innumerous here."[181] Fur trader-naturalists paid lip service to this sort of population maintenance, noting decreases and increases yearly. Although in later years, the British would recognize the damage that the English fur trade did to populations of beaver, during most of the eighteenth century the link between scarcity and extinction was not an obvious one.[182] However, there was less sensitivity surrounding issues of population extinction in this period, especially among the English.[183]

In addition to concerns about animal populations being too thin to support the fur trade, sometimes fresh meat was too available; it rotted faster than it could be eaten, even stored frozen in the permafrost. Preservation of fresh meat became a matter of trial and error, as Isham described refusing "1/2 a Dozen Deer at a time, for itt's to be observed that itt will not take Salt, because we can not Gett the meet cool before its tainted, having try'd Severall Experiments."[184] Other times, there was no deer to be had "for Love or money, Notwithstanding Such a Bundance of Deer in the Country, Bleiving no country can abound more in these Beasts, and Can affirm that the Natives has in 3 weeks time, Kill'd upwards of 1,000 Deer."[185] Provisioning food to forts in the Hudson's Bay

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[181] Andrew Graham. "Andrew Graham to Ferdinand Jacobs, 1 February 1773, Severn House." HBCA 4M101

[182] Lotte Hughes and William Beinart, *Environment and Empire* (Oxford: Oxford University Press, 2007).

[183] Ryan Tucker Jones's *Empire of Extinction* argues for the development of an environmental sensitivity around animal extinction in the eighteenth century. However, this sensitivity does not appear as strongly among the British. Richard Grove might disagree, as he argues in *Green Imperialism* for rising environmental awareness of anthropogenic degradation of island environments. Importantly, both Jones and Grove's historical actors were noticing population changes on island environments, where it was much easier to denote these kinds of fluctuations and changes in the environment.

[184] Isham, *Isham's Observations*, 116.

[185] Isham, *Isham's Observations*, 116.

Company was not a smooth process, and hardly operated in an economical fashion. Often food was wasted or impossible to be found.

Certainly, food was hard to come by in the Far North, but not always because it was not available. This fact raises questions about the effectiveness of "mutual dependency," and in particular the reality that indigenous peoples reliant upon British forts were left hungry more often than Hudson's Bay Company employees, despite often ample provisions.[186] After all, chief factors reported several good winters in which up to 4,000 partridges were shot, thousands of geese salted and stored in casks, some to be sent to England, some to supply the fort, and deer were reportedly one of the most common animals throughout the year.

In part, the British could not reflexively examine the "myth of mutual dependency" because they did not see themselves as accountable to decreases in animal populations that resulted in localized famine in the Arctic. In 1769, Thomas Hopkins bemoaned his concerns about goose populations to Ferdinand Jacobs: "My goose season last fall was upwards of 9000. This spring not 2000 notwithstanding I had near 70 prime hunters and am sure they hunted their very best indeed. There were but few Geese about owing in my opinion to so many northerly winds for we have had nothing elsewhere all this spring."[187] The Hopkins letter above suggests weather conditions predetermined the availability of animal populations. A similar belief was upheld regarding cold weather:

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[186] Davis, *Late Victorian Holocausts*. Davis argues that nineteenth century famines in India were not contingent upon El Nino events, which resulted in climate changes in south Asia not conducive to typical agricultural yields, but rather were a reflection of British imperial strategies and choices that led to the reallocation of food provisions away from native Indians.

[187] Thomas Hopkins, "Thomas Hopkins to Ferdinand Jacobs, 21 June 1769, Albany Fort," HBCA 4M101.

deep cold could produce an influx of geese, though perhaps contrary to Hopkins' expectations about geese and winds.[188] This environmentally determined view of the availability of country provisions removed the accountability of the British to upholding their end of "mutual dependency" to natives.

Despite this, British accounts did suggest that indigenous peoples had far greater difficulty in retrieving food than earlier histories of the fur trade or the north have suggested. These historical accounts do not, in that case, support the depicted relationship of "mutual dependency" between indigenous peoples and British traders that was perpetuated by Britons. Rather, indigenous peoples were left, according to numerous anecdotes, to starve, or to cannibalize:

> "I Never knew Indians in this part to Eat raw meet, but in case of Necessity, then they do not scruple to Eat one another, to their Greif, or at Least as I'imagine, having Known some family's that has Kill'd their Children for food,—Especially one family who was Very much in want of provisions, and being a great way of from the English fort, cou'd gett no Suply, (as hungar will Enduce any man to do an unhuman action.) so they made a Dismal Slaughter of four poor Children and Eat the best part of them, which Brought them to the English setlement, in a sorryfull Condition, and of a wild Aspec't, Neither do they come to their Senses and natural way of Living for night 3 weeks afterwards,—after such a misfortune when they have Recovd. Their right Senses, they Commonly take other Indian's Children and bring them up as their own; in Rememberance of the unfortunate Childn. They' mascr'd,—their being starv'd and in hungar is oft'n occationed by the Quiquakatches [wolverines] as here after mention'd"[189]

Fur trader-naturalists, however, were inconsistent in their descriptions of indigenous peoples and their relationship to food.

On the one hand, indigenous hunter-trappers required perhaps less food from the British due to their deep knowledge of northern conditions, hence the British reliance

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[188] Ferdinand Jacobs, "Ferdinand Jacobs to Moses Norton, 21 July 1770, York Fort," HBCA 4M101.
[189] Isham, *Isham's Observations,* 101.

upon their supplying fresh meat. In reality, the possibility of added pressure on animal populations due to overhunting, however, might have provided further challenge to indigenes.[190] But, the British also felt that indigenous peoples in the Far North were wasteful, "Kill[ing] some scores of Deer, and take only the tongues or heads, and Let the body or carcass go a Drift with the tide."[191] For the British, this wastefulness – never mind the huge culling of animals for furs and hides undertaken by the British – justified occasions in which indigenous peoples starved, often on the account of the British unwillingness to share preserved food in harsh conditions. Isham explained that indigenous wastefulness invoked the wrath of the Christian God, who would "fix his Judgemen't upon these Vile Reaches, and occation their being starvd. And in want of food, when they make such havock of what the Lord sent them plenty of,—their ignorance may perhap's Justifie them something."[192] This belief in the wastefulness of indigenous peoples allowed Britons to justify not providing them with additional supplies in times of need, and also suggests an attitude among the British that the natives had made decisions that warranted their starvation.

Corresponding with their conviction of the wastefulness of indigenous peoples, the British also upheld a belief in the indifference of indigenous peoples regarding not only their physical, but their spiritual well-being, describing an almost inherent attribute

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[190] In a similar instance, Elliot West's *Contested Plains* situates the semiarid environment of the Great Plains and the introduction of horse culture among the Great Plains Indians, like the Sioux, as a crucial factor that precipitated the Sand Creek Massacre in the late nineteenth century. Too many stakeholders were invested in an ecosystem that could not support them all without conflict, he deduces. The Arctic here may be a similar case study.

[191] Isham, *Isham's Observations*, 81.

[192] Isham, 81.

of patience "under hunger, thirst, or other misfortunes."[193] To Britons, it was commendable that indigenous peoples did "not complain when in want," but that was largely because of a belief that they were "content with little."[194] This, as suggested by James Isham's commentary on God's punishment of that wastefulness, was a marker of the animalistic nature of native peoples. The apathy of indigenous peoples was linked to their bodily constitutions and northern living, which I will return to in the next chapter.

These stories, though, do bely a cruel reality about northern life. Food *was* scarce, whether due to climatic conditions, seasonal changes, and over-hunting and competing trades, and food was scarce for Britons and indigenous peoples alike. English provisions were valuable not just as calories, but for maintaining a level of dignity for British settlers in the north. Relinquishing English provisions to starving indigenous peoples could condemn the British to the same savagery with which they perceived indigenous peoples to live. For Britons, that once-a-year ship was crucial to maintaining the same standards of civility that were afforded by the availability of a variety of fresh meats and fish as discussed in the last section. For example, before the yearly ship was instituted, in 1706, then-governor of Albany Fort, Anthony Beale, dictated a scathing letter to the governing committee of the Hudson's Bay Company, explaining that "If here does not come a ship [in] the fall the country will be in a worse condition than it ever was."[195] He continued, "Gentlemen, if you send ships over yearly…I will continue in your service." Otherwise,

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[193] Graham, *Graham's Observations*, 152.
[194] Graham, *Graham's Observations*, 152.
[195] Anthony Beale, "Letter 2: Anthony Beale, Albany Fort, 23 July 1706," in K.G. Davids and A.M. Johnson, eds., *Letters from Hudson's Bay, 1703-1740* (London: Hudson's Bay Record Society, 1965), 15.

he would return to England, and "therefore you may provide yourselves; for these disappointments so continually makes not only me but all men sick of your country."[196]

In the early years of the Company, ships, which were expensive to outfit and dangerous to send to the Far North from England, only traveled to the Bay with fresh supplies of flour, grains, and other English goods, but infrequently – perhaps every two or three years. Beale's complaints suggest that the creature comforts of home made the Arctic more bearable, if only because those comforts filled the stomach with more reliability than the hunt. In other words, having ready access to food, made the north more like England, and improved the condition, overall, of the territories of the Hudson's Bay Company for British residents. In this light, the "myth of mutual dependency," rationalized by British attitudes towards indigenous peoples, was also a British choice to prioritize their creature comforts over the subsistence of their indigenous collaborators.

An empty, miserable Arctic worked in the favor of the Hudson's Bay Company. To them, it was empty, void of the trappings of a "civilized" life in England. But an empty Arctic justified their reliance and exploitation of indigenous peoples, allowing them to operate on the "myth of mutual dependency," leveraging that as imperial power. It is the power of this narrative that not only explains, in many ways, the seeming contradictions of descriptions about the north, but also made it so easy for British imperialists to ignore certain glaring realities. It also infiltrated their perceptions of nature, and their perceptions of nature were simultaneously able to uphold their expectations of northern nature.

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[196] Beale, "Letter 2," 16.

This starving North, however, did not appear so terrible to interested stakeholders back in Great Britain. The next section will focus on an alternative viewpoint that highlights the contested nature of describing the quality of life in the Far North, in the context of empire, economics, and, geography, climate, and natural history.

The View from England: The Deceit of the HBC and the Temperate Arctic

In contrast to this story of the inhabitability of the Far North, as suggested by preoccupations about food, a critique emerged from British politicians who felt that progress towards settlement and empire in the Far North was moving far too slowly. These critics were convinced that the North was habitable; theories of uniform climate nearly mandated it, as the region around the Bay was at an equivalent latitude to prosperous European nations. Ultimately the politician Arthur Dobbs, who spearheaded the effort to condemn the HBC for not doing its duty to the English nation, fought an intellectual battle against a former company employee, Christopher Middleton.

This was, I argue, a proxy war. On the surface the conflict between Dobbs and Middleton was a debate about the existence of the Northwest Passage, which in theory was the key to imperial and commercial success in the North; in actuality the conflict was Dobbs' attempt to demonstrate how the Company had constructed fabulous fictions about the North. By undermining Middleton and proving he collaborated with the Company, Dobbs would be able to show that the Company was capable of obfuscating facts about northern nature that had ramifications for settlement and occupation of the North beyond the existence of the Northwest Passage.

Concerns about the Company's activities emerged in regard to the Company's policy of secrecy in its early years. Under the governance of Sir Bibye Lake, the Hudson's Bay Company governor from 1713-1742, the Company operated under the strictest secrecy, especially concerning its navigational knowledge, operations with its indigenous hunter-trappers, and even its profit totals.[197] This secrecy, while largely intended to protect the Company's operations from competing trade and even the meddling of the British government, was seen as a deliberate attempt by critics in Great Britain to obscure knowledge of a Northwest Passage, the existence of which was upheld by theories of the tide and other observations made.[198] However, the Company was not interested nor invested in seeking a Northwest Passage, despite the mention of the notorious waterway in its royal charter, in part because of an earlier history of financial and personnel loss in exploring the Bay.[199]

In the 1730s, Irish MP Arthur Dobbs sought to encourage the discovery of the Passage after becoming convinced of both the ease of navigating a passage and the immense gain in wealth that would result from its discovery.[200] Dobbs argued in a 1731 commentary on the existence of the Northwest Passage that "By All the Journals I have read, of those who made any considerable progress towards that Discovery, there seems to be strong Reasons to believe there is a Passage to Northwestwards of Hudsons Bay,

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[197] Binnema, *Enlightened Zeal*, 49-50.
[198] Binnema, *Enlightened Zeal*, 51-53; Barr and Williams, "Introduction*," Voyages to Hudson Bay in Search of a Northwest Passage, 1741-1747*, 3.
[199] Hudson Bay Company Charter (1670), 1; Barr and Williams, "Introduction," 6.
[200] Arthur Dobbs, "Memorial on the Northwest Passage," in William Barr and Glyndwr Williams, eds. *Voyages to Hudson Bay in Search of a Northwest Passage, 1741-1747. Volume 1: The Voyage of Christopher Middleton 1741-1742* (London: Hakluyt Society, 1994).

and that Passage no way Difficult by being pester'd with Ice, Except in Hudsons Strait, before they go into the Bay."[201] He then implored the Company, with moderate success, to oversee expeditions to the northern part of the Bay to seek an outlet to the Pacific Ocean.

After attempts on the part of the Company in 1736, Bibye Lake wrote to Dobbs: "I hope you will excuse me from running the Company into any farther Danger or Expence, for I am already blamed a good deal for what I have already persuaded them to undertake in this Matter."[202] Dobbs, incensed by Lake's refusal to continue searching for the Passage, which Dobbs adamantly insisted must exist within the Bay, took his pleas for assistance elsewhere. Having become acquainted in 1735 with Hudson's Bay Company ship captain and author of several articles in the *Philosophical Transactions of the Royal Society*, Christopher Middleton, Dobbs appealed to Middleton to become his partner in discovery in 1737.

Middleton seemed at first to be in agreement with Dobbs regarding the likelihood of the Northwest Passage. In the grip of the same kind of discontent as other Company employees towards their employer (see, for instance, Anthony Beale's malcontent in the previous section), he felt that the Hudson's Bay Company had not done their utmost to discover the Passage, writing to Dobbs in November of 1737 that "If the Expedition was undertaken in good earnest, and proper Persons employed, with suitable Encouragement,

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[201] Arthur Dobbs, "Memorial on the Northwest Passage 1731," 9-10.

[202] Bibye Lake, "Sir Bibye Lake to Arthur Dobbs, 16 December 1737," in William Barr and Glyndwr Williams, eds., *Voyages to Hudson Bay in Search of a Northwest Passage, 1741-1747. Volume 1: The Voyage of Christopher Middleton* 1741-1742 (London: Hakluyt Society, 1994).

it would soon determine what Success might be expected; and it seems not impossible but a Passage would be found."[203] After securing Middleton as his would-be commander of an expedition searching for the Northwest Passage, Dobbs turned to the First Lord of the Admiralty, Charles Wager, to get approval and investment for a voyage. Wager received unofficial support, but support nonetheless, from King George II, by bringing to the Crown's attention Dobbs's concerns about the Company: that they "were not inclinable that a Discovery should be made."[204]

Middleton, who had been an employee of the Company for two decades, concurred with Dobbs that the Company was perhaps not being transparent about northern knowledge. As a captain for the Company, Middleton had specific knowledge about navigating the Bay and the lands surrounding the Bay, which made him a perfect candidate for assisting Dobbs in his discovery. In helping Dobbs, Middleton also risked violating the Company's policy of secrecy, putting him in a vulnerable position. On the one hand, Middleton confessed "the Company think it their Interest rather to prevent than forward new Discoveries in that Part of the World;" on the other hand, Middleton was hesitant to make obvious to the Company his involvement with Dobbs, who had not

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[203] Christopher Middleton. "Captain Middleton to Arthur Dobbs. 5 November 1737," in William Barr and Glyndwr Williams, eds., *Voyages to Hudson Bay in Search of a Northwest Passage, 1741-1747. Volume 1: The Voyage of Christopher Middleton* 1741-1742, (London: Hakluyt Society, 1994).

[204] Arthur Dobbs, "Arthur Dobbs to Sir Bibye Lake. [January, 1738]" *Voyages to Hudson Bay in Search of a Northwest Passage, 1741-1747. Volume 1: The Voyage of Christopher Middleton 1741-1742*. Edited by William Barr and Glyndwr Williams. Hakluyt Society: London, 1994.

hidden his distaste for the Company's proceedings.[205] Middleton feared termination from the Company, should it become known his "Intention of accepting such an Offer."[206]

Despite his concerns and with Crown approval, Middleton left the Company in 1741 to join the Royal Navy and lead Dobbs' planned expedition for a Northwest Passage in Hudson Bay.[207] In so doing, Middleton returned to the Prince of Wales Fort at Churchill in the fall of 1741 to winter there, a bequest granted under compulsion by the Company. It was during this time that Middleton collaborated with fur trader-naturalist, James Isham (who was perhaps somewhat reluctant to do so), and gathered the observations that would earn him the Royal Society's Copley Medal in 1743.

In the spring, Middleton and what remained of his scurvy-ravaged crew departed from Prince of Wales Fort to explore the Bay.[208] Middleton's voyage was plagued with ice-packed passages, although he successfully mapped most of the northwestern portion of the Hudson Bay between June 30, 1742, when Middleton departed Prince of Wales Fort at Churchill, and late August 1742, when he set sail for the Orkney Islands.[209] For Middleton and his crew, seeking the Northwest Passage meant interpreting measurements of the tide. An indication of the Northwest Passages' existence would be tides pulling

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[205] Christopher Middleton, "Captain Middleton to Arthur Dobbs, 21 January 1737," in William Barr and Glyndwr Williams, eds., *Voyages to Hudson Bay in Search of a Northwest Passage, 1741-1747. Volume 1: The Voyage of Christopher Middleton* 1741-1742 (London: Hakluyt Society, 1994), 48.

[206] Middleton, "Captain Middleton to Arthur Dobbs, 21 January 1737," 48

[207] Binnema, *Enlightened Zeal*, 72.

[208] William Barr and Glyndwr Williams, "The Voyage: Introduction," in William Barr and Glyndwr Williams, eds., *Voyages to Hudson Bay in Search of a Northwest Passage, 1741-1747. Volume 1: The Voyage of Christopher Middleton* 1741-1742 (London: Hakluyt Society, 1994), 104. Over the winter, 11 men had died from scurvy, two others from other causes and many had suffered from severe frostbite. Additionally, Middleton soured relations with the HBC even further by inducing 5 HBC men to join his crew, which reduced the number of European personnel at the fort by 20%. Needless to say, James Isham was not pleased.

[209] Glyndwr Williams, "The Voyage: Introduction," 104, 108.

from the west, as opposed to the east. For instance, on July 5, 1742, Middleton decided against going ashore to investigate possible passages, as he found that the tide "ran 2 Miles an Hr. from the NEbE by Compass the Day before the Change or the Full Moon, and I take it to be the Flood from the Eastwd…"[210]

However, Middleton and his crew's efforts to measure the tides were often thwarted by challenging conditions. The shores of the northern part of the Bay were often clogged with ice, even in mid-July. This prevented Middleton and his crew from measuring the tide, which was dependent upon getting near to the shore to measure its height.[211] On July 10, Middleton commented that "by Frequent Trials with the Current Log, there is neither flood nor Ebb on this South Side."[212] Not only did this not help to further the discovery of the Northwest Passage, but Middleton's ships were prevented from making any discoveries of any sort, "For we are not able to help our Selves until the Wind Shifts…" or the ice to clear. [213] In early August, Middleton and his crew reached an area they hoped was "the Extream Part of America," and which might offer an outlet to the Pacific Ocean.[214] After exploring the region for a day, that Middleton named Cape Hope—later known as Repulse Bay, the northernmost part of the Bay, Middleton wrote, "our Hopes of a Passage that way was all over, but, to make sure, we kept on our Course

[210] Christopher Middleton, "A Journal of the Proceedings on board his Majesty's Ship Furnace Under my Command in a voyage for the Discovery of a Passage thro' Hudsons Bay to the South Sea (1741-1742)," in William Barr and Glyndwr Williams, eds., *Voyages to Hudson Bay in Search of a Northwest Passage, 1741-1747. Volume 1: The Voyage of Christopher Middleton* 1741-1742 (London: Hakluyt Society, 1994), 187.
[211] Middleton, "A Journal of the Proceedings on board his Majesty's Ship Furnace," 190.
[212] Middleton, "A Journal," 190.
[213] Middleton, "A Journal," 191.
[214] Middleton, "A Journal," 208.

to the Codd of it, until two the Next Afternoon, when every on board saw Plainly it was nothing but a Bay, and that we could not go above 6 or 8 Miles farther…we concluded we had pass'd by Some Opening where the Tide came in at from the Eastward," but it was no Northwest Passage.[215] By mid-August, Middleton and his crew were forced by the danger of an impending Arctic winter to abandon their search and set sail back to England.

Dobbs, upon hearing of Middleton's strenuous journey and failure to locate the entrance to a Northwest Passage, wrote to Middleton in October 1742 of his reasonable disappointment, his points of contention with Middleton's account, of which there were two, and of a new scheme for securing the ruin of the Hudson's Bay Company in order to insure parliamentary control over Prince Rupert's Land, by perhaps mounting another expedition to survey the general region.[216] Middleton responded, but expressed his intention "never to venture that way again."[217] Dobbs met this refusal to actively participate in further voyages to the Hudson Bay seemingly without issue and even responded to Middleton, agreeing with the Captain's belief that "I am fully convinced there can be no Passage N.W. by Sea."[218]

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[215] Middleton, "A Journal," 208.

[216] Arthur Dobbs, "Arthur Dobbs to Captain Middleton, 20 October 1742," in William Barr and Glyndwr Williams, eds. *Voyages to Hudson Bay in Search of a Northwest Passage, 1741-1747. Volume 1: The Voyage of Christopher Middleton* 1741-1742 (London: Hakluyt Society, 1994), 251-254.

[217] Christopher Middleton, Captain Middleton to Arthur Dobbs. 27 November 1742" in William Barr and Glyndwr Williams, eds. *Voyages to Hudson Bay in Search of a Northwest Passage, 1741-1747. Volume 1: The Voyage of Christopher Middleton* 1741-1742 (London: Hakluyt Society, 1994), 257.

[218] Arthur Dobbs, "Arthur Dobbs to Captain Middleton, 14 December 1742," in William Barr and Glyndwr Williams, eds. *Voyages to Hudson Bay in Search of a Northwest Passage, 1741-1747. Volume 1: The Voyage of Christopher Middleton* 1741-1742, (London: Hakluyt Society, 1994), 257.

Things then took an odd turn. Sometime in early January of 1743 Dobbs reported to have received two anonymous letters from men who claimed to be "Gentleman that have been the Voyage [sic]."[219] These mysterious letter writers leveraged allegations of deceit and forgery against Christopher Middleton, "Our Discoverer." The letter claimed that "The frozen Streights is all Chimera, and every Thing you have ever yet read or seen concerning that Part of our Voyage."[220] Glyndwr Williams, a notable Hudson's Bay Company scholar, assumes that the letters were fabricated by Dobbs, especially considering that Dobbs did not enter them as evidence against Middleton in the formal parliamentary inquiry into Middleton's conduct.[221] Nonetheless, these potentially fictitious letters served Dobbs well in the process of creating a case against Middleton. A mere two weeks after receiving the anonymous letters, Dobbs received a letter from Middleton. In it, Middleton explained his reasons as to why Dobbs's plan to secure trade for England in the Bay region would fail, citing the challenging climate, the successful assimilation into indigenous lifestyle that French traders had undergone, and the lack of English personnel to survey the entirety of the interior.[222]

Middleton's skeptical response to Dobbs' continuing plans for the ruination of the Hudson's Bay Company marked a change in the relationship between Dobbs and the ex-

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[219] Unknown, "Anonymous Letters to Arthur Dobbs," 2 January 1742 (OS) and n.d. in William Barr and Glyndwr Williams, eds. *Voyages to Hudson Bay in Search of a Northwest Passage, 1741-1747. Volume 1: The Voyage of Christopher Middleton* 1741-1742, (London: Hakluyt Society, 1994). 260.

[220] "Anonymous Letters to Arthur Dobbs," 260.

[221] Glyndwr Williams and William Barr. "Controversy: Introduction" in William Barr and Glyndwr Williams, eds., *Voyages to Hudson Bay in Search of a Northwest Passage, 1741-1747. Volume 1: The Voyage of Christopher Middleton* 1741-1742 (London: Hakluyt Society, 1994), 242.

[222] Christopher Middleton, "Captain Middleton to Arthur Dobbs, 18 January 1742 (OS)" in William Barr and Glyndwr Williams, eds. *Voyages to Hudson Bay in Search of a Northwest Passage, 1741-1747. Volume 1: The Voyage of Christopher Middleton* 1741-1742 (London: Hakluyt Society, 1994), 262.

HBC employee. This created the necessity on Dobbs' part to criticize Middleton's authority as a producer of northern knowledge.[223] Dobbs responded to Middleton's lack of enthusiasm by changing his tune, writing, "You have made a much greater Progress in the Discovery of the Passage, than you imagined when there."[224] From the position of geographical knowledge, this could not have been true—retrospectively, we know that the Northwest Passage is not accessible in Hudson Bay, but even by the standards of seafaring and geographical knowledge of the day, it was unfounded. Contrary to Dobbs' insistence that Middleton had actually been near to discovering a passage, Middleton's geographical rendering of the northern parts of the Hudson Bay were upheld by other navigators well into the nineteenth century, with Arctic explorer, William Parry, lauding his description of the region.[225] However, in order to mount another voyage, Dobbs had, according to Glyndwr Williams, to undermine Middleton's credibility to justify the rationale to go back to Hudson Bay, yet again, to find a Northwest Passage.[226] The first step was to assert that Middleton had failed when right on the cusp of actual discovery.

What proceeded next reflected an ongoing contest over perceived realities of northern nature and geography. Dobbs made his allegations against Middleton clear: Middleton had not done enough to investigate what he called the Wager River; Dobbs insisted it was a through passage, and had Middleton gone somewhat farther, he would

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[223] Williams and Barr, "Controversy: Introduction," 241.
[224] Arthur Dobbs, "Arthur Dobbs to Captain Middleton 22 January 1742 (OS)," in William Barr and Glyndwr Williams, eds., *Voyages to Hudson Bay in Search of a Northwest Passage, 1741-1747. Volume 1: The Voyage of Christopher Middleton* 1741-1742 (London: Hakluyt Society, 1994), 263.
[225] Glyndwr Williams and William Barr, "Controversy: Introduction" in William Barr and Glyndwr Williams, eds., *Voyages to Hudson Bay in Search of a Northwest Passage, 1741-1747. Volume 1: The Voyage of Christopher Middleton* 1741-1742 (London: Hakluyt Society, 1994), 242-248.
[226] Williams and Barr, "Controversy: Introduction," 242.

have found it free of ice and passable.[227] Middleton defended himself. Facing a challengingly cold summer on the Bay and a scurvy-ridden crew to boot, he insisted that the tidal readings he produced were reputable and sound and that he had thoroughly investigated the shoreline. In particular, he responded to Dobbs's accusation that the Wager River was really Wager Strait (the difference being that a strait could be a passage to the Pacific): in addition to tidal readings, Middleton's crew was able to drink the water in Wager River because it was fresh, not salt water.[228]

Dobbs clung to a Renaissance understanding of northern knowledge that reflected an almost humanist tradition of knowing the north, centered on reading any and all material that discussed northern voyages and northern nature, without the necessity of first-hand evidence to clarify his theory. As part of his imperial vision of the Far North as an English stronghold, Dobbs was fixated on a trade route to the Pacific Ocean. Dobbs cited earlier explorers' journals heavily in both his earliest rationalizations of the Northwest Passage's existence and then again in his indictments of Middleton. He claimed, upon his initial reception of Middleton's failure to find a Passage, that "all the fine Hopes formed from [Fox and Scroggs,' two earlier voyages] are quite vanished."[229] In part because of the very tight-lipped approach to disseminating northern knowledge by the Company, Dobbs had little on-the-ground knowledge of what the north was actually like in the eighteenth century at the time of his scheming.[230]

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[227] Williams and Barr, "Controversy: Introduction," 242.
[228] Christopher Middleton, "Captain Middleton to Admiralty Board, July 1743," in William Barr and Glyndwr Williams, eds., *Voyages to Hudson Bay in Search of a Northwest Passage, 1741-1747. Volume 1: The Voyage of Christopher Middleton* 1741-1742 (London: Hakluyt Society, 1994), 273.
[229] Dobbs, "Arthur Dobbs to Captain Middleton. 20 October 1742," 251.
[230] Despite this, his publications provided the first information about the Hudson Bay region to the public.

Meanwhile, Christopher Middleton had two decades of experience of living and sailing on the Hudson Bay.[231] He had wintered in HBC outposts, and he was intimately familiar with more than just the Company's operations; because he was a captain, he was even privileged to information about the region that the Company usually kept under wraps. Moreover, Middleton made himself a credible, authoritative, and established creator and purveyor of northern knowledge with the reception of the Royal Society's venerable Copley Medal in 1742 for his "Surprizing Effects of the Cold," which offered a rare depiction of the very Arcticness of life on the Bay. Middleton viewed the north with a natural philosophical gaze, paired with his navigational and maritime expertise.[232] His first-hand experience over decades granted him, by the standards of science in the mid-eighteenth century, the authority and credibility required to produce northern knowledge.

These two approaches to knowing northern nature were at the core of the contest between Dobbs and Middleton, who engaged in a pamphlet war that dwindled in the middle of the 1740s. By 1745, the pamphlet war had begun to regurgitate the same series of intellectual claims as it had begun with, and Dobbs mounted a new expedition to the Bay in 1746, appointing to his crew the very men who testified against Middleton and the Company to parliament. The pamphlet war, which HBC scholar Ted Binnema claims resulted in no clear winner, was actually devastating for Middleton's career.[233] Dobbs went on to have a successful career as a governor of North Carolina, which suited his

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[231] Christopher Middleton, "Captain Middleton to Admiralty Board, July 1743," 273.
[232] Other scholars have linked navigational knowledge and epistemology with natural historical discovery and investigation. For more on this subject, see Alistair Sponsel's, "An Amphibious Being: How Maritime Surveying Reshaped Darwin's Approach to Natural History," *Isis* 107 (2016): 254-281.
[233] Binnema, *Enlightened Zeal*, 70; Williams and Barr, "Controversy: Introduction," 248.

overt and even cutthroat imperial ambitions and which reflected his interest in settlement by British immigrants as his preferred model of English expansion. Meanwhile, Middleton's legacy was destroyed. His reputation with the Company was tarnished by his involvement with a Company adversary like Dobbs, and his Navy ally, Charles Wager, First Secretary of the Admiralty, had retired before he returned from the Bay in 1742, making it difficult if not impossible for him to continue working for the British Navy after the scandal.

Dobbs's efforts to cast a spotlight on the HBC's practices worked to a degree, although almost certainly Middleton's reputation was far more damaged than the Company's. Dobbs concerns led to a reevaluation of the Company's charter, the legality of which came under question, as it was never formally renewed by Parliament after its first seven-year contract.[234] Dobbs's connections and publicity of the scandal prompted formal parliamentary investigation. In 1749, Joseph Robson, a former Company building surveyor, was sent to the Bay following a parliamentary inquest of the Company to assist in the construction of HBC forts (but also to gauge HBC operations on behalf of Parliament).[235] In 1752, Robson published his report of his time in the Hudson's Bay as a book entitled *Six Years' Residence in Hudson's-Bay*. Significantly, this was the first book from a Hudson Bay resident written in English to be made available to the English public, and it varied rather dramatically from the descriptions of the Far North that emerged from

[234] Glyndwr Williams, "Arthur Dobbs and Joseph Robson: New Light on the Relationship between Two Early Critics of the Hudson's Bay Company," *Canadian Historical Review* (1959) 40: 132-136, 132.
[235] Binnema, *Enlightened Zeal*, 71; D.W. Moodie. "Science and Reality: Arthur Dobbs and the eighteenth-century geography of Rupert's Land," *Journal of Historical Geography* 2 (1976): 293-309, 305.

the letters of Hudson's Bay Company chief factors to one another.[236] Hudson Bay Company employees often described the misery of living on the Bay, both in terms of provisioning and climate, and the difficulty of encroaching inland, far from the waterways that connected the HBC back to its lifeblood in London. HBC employees, like James Isham, brought into question the very habitability of the Far North.[237]

Joseph Robson, however, had a different view of the circumstances and habitability of northern living. He slung steep allegations against the Company:

> "From hence…proceeds that vigorous exertion of their art and power to keep all their servants, except the chief factors and the captains of their ships, totally ignorant both of the country and trade…hence also their aversion to all discoveries and improvements, *cloaked under the specious pretence, that they have already done all that men could do, for the advantage of so barren a soil, and so bad a climate*…"[238]

Robson believed that the Company was deliberately and manifestly obscuring knowledge of the Hudson Bay region and even exaggerating the challenge of living in northern lands, similar to Dobbs's allegations against Christopher Middleton. Robson explained that, in contrast to Company portrayals of the region as infertile, lifeless, and harsh of climate, "The country abounds with beaver, martins, foxes, and other animals…; and with elks, and moose, and innumerable herds of deer and buffaloes: the *soil is fertile and the climate temperate*, fit for the produce of all kinds of grain, and for raising stocks of tame cattle…"[239]

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[236] Williams, "Arthur Dobbs and Joseph Robson," 132-136, 133.

[237] Isham was asked to testify on Middleton's and the Company's behalf. His Observations on Hudson's Bay may have been linked to this larger examination of HBC operations. This reinforces the significance of fur trader-naturalists not only as contributors to natural knowledge-making, but to the politics of knowledge-making in this period.

[238] Joseph Robson. *An Account of Six Years Residence in Hudson's-Bay, From 1733 to 1736, and 1744 to 1747.* (London: Printed for J. Payne and J. Bouquet in Pater-Noster-Row; Mr. Kincaid, at Edinburgh; Mr. Barry, at Glasgow; and Mr. J Smith, at Dublin, 1752), 74-75. Italics mine.

[239] Robson, *An Account of Six Years' Residence*, 82.

Robson's allegations and accusations were motivated by the belief that the HBC deliberately obfuscated northern knowledge, as they had done with the Northwest Passage in Arthur Dobbs's view, to protect Hudson Bay trade from the hands of British Parliament. In his mind, the Company did not have a legitimate reason for either improving the landscape by traditional means of agriculture or establishing English civilian settlements. Robson's account portrayed the Company as fabricating accounts of northern nature to prevent settlements from being further developed, especially as he saw the Hudson Bay region to be fertile and possessing a temperate climate that was well-suited to English development. Robson felt that the Company "industriously propagated…that the countries adjoining the Bay are incapable of any beneficial improvements; and that the severity of the climate renders them unfit for human creatures to inhabit."[240] He upheld this claim from a position of experience with life in the North, although significantly less experience than fur trader-naturalist and others like Christopher Middleton who were under the employ of the Company for decades.

The connection between the disputes between Dobbs and Middleton over the existence of the Northwest Passage and the account of Joseph Robson may not seem initially obvious, or even related to the habitability of the North. Certainly there were a number of critics of the Company who insisted upon the Company's deceit in limiting the involvement of Parliament in both the case of the Northwest Passage and Robson's account. However, the connection is even stronger than that between these two episodes. Arthur Dobbs wrote a significant portion of Joseph Robson's *Six Years' on Hudson*

[240] Robson, *An Account of Six Years' Residence*, 4-5.

Bay.[241] Dobbs revised Robson's draft, as evidenced in an undated letter written in Dobbs's hand, accompanied by Robson's manuscript, in which Dobbs writes, "I have only had time to *recast it into tolerable form* without polishing it."[242]

To condemn the HBC, Dobbs weaponized evidence and accounts of northern nature, such as Robson's, and even to a degree, Middleton's, turning the latter's against him. In dismantling the Company's reputation by centering the debate on northern geography—the Northwest Passage—he could also leverage claims about northern climates and its temperateness in order to further his imperial agenda. The Northwest Passage was an important icon for the conquest of the north and a means to the interior and access to a wealth of new trade; Arthur Dobbs, whose feverish imperial ambitions burned brightly enough to attempt to destroy one of the most powerful companies in the New World, cast the NW Passage's non-existence as evidence of the Company's corruption and its deliberate attempts to keep the English government out of the Far North. Declaiming and discrediting Middleton, who came to represent for Dobbs the HBC, was an attempt to pull back the curtain and prove to European observers that the Company was operating only in its own self-interest.

Ultimately, the debates between Arthur Dobbs, Joseph Robson, and Christopher Middleton about the existence of the Northwest Passage and the temperateness of the North that played out in the public eye hinged upon several crucial philosophical

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[241] Glyndwr Williams, "Arthur Dobbs and Joseph Robson: New Light on the Relationship between Two Early Critics of the Hudson's Bay Company," *Canadian Historical Review* (1959) 40: 132-136; D.W. Moodie, "Science and Reality: Arthur Dobbs and the eighteenth-century geography of Rupert's Land," *Journal of Historical Geography* 2 (1976): 293-309; Binnema, *Enlightened Zeal*, 71-73.

[242] Williams, "Arthur Dobbs and Joseph Robson," 134. Italics mine.

elements. First of all, the truthfulness of northern knowledge claims was at stake. The geography and nature of the North were heavily disputed, and the accuracy of these accounts had implications for the imperial decisions made not only by the Hudson Bay Company as the acting sovereigns of these northern lands, but for the British Parliament, who in the mid-eighteenth century came to care about the possibility of losing out in the North. Northern knowledge about flora, fauna, geography, and climate and in particular its presentation came to reflect the imperial agenda of the Company and subsequently of the British government.

In this way, it is possible to have two knowledges competing for political dominance. The first "knowledge," of a world that is harsh, intractable, with no obvious passable Northwest Passage nor obviously improvable land for settlement, was reported by the Hudson's Bay Company. However, the Company was hardly credible in the eyes of eighteenth-century intellectuals and elites, who viewed the Company as greedy, duplicitous, and opaque. This lack of trust and credibility in the Company led to a second "knowledge" of the north: that it was temperate, navigable, habitable and cultivatable. In this model of northern knowledge, the North could be subject to the same strategies for improvement that the British government had deployed in its settler colonies, like the American colonies and even places like India and Australia.[243] These two interpretations, thus, shifted the fulcrum of power to their respective proponent, and so it was

[243] Patrick Wolfe*, Settler Colonialism and the Transformation of Anthropology: The Politics and Poetics of an Ethnographic Event* (London: Cassell, 1999); Patrick Wolfe, "Settler Colonialism and the Elimination of the Native," *Journal for Genocide Research* (2006) 8: 387-409; Tom Griffiths and Libby Robbin, *Ecology and Empire: Environmental History of Settler Societies* (Seattle: University of Washington Press, 1997).

unsurprising that these knowledges were deployed to the benefit of one or the other office.

The second aspect of the debates between Dobbs and Middleton depended upon competing epistemic priorities. Viewing the Hudson Bay region from the outside, Dobbs represents in this regard an older paradigm of northern knowledge: one based upon classical traditions of northern geography and the reports of the few explorers who traveled to the Arctic in the sixteenth and seventeenth centuries. In this regard, Dobbs's approach was almost like sixteenth-century British ideas about northern spaces. The geographical understanding of the north existed without the need for verification, and Dobbs aimed to conduct an experiment for its discovery. However, his experimenter, Christopher Middleton, whose first-hand experience with the North, both prior to the voyage and during this particular voyage, could not verify the existence of the Northwest Passage where Dobbs insisted it must be. It was this divergence in opinion on the existence of the Northwest Passage which put former allies, Dobbs and Middleton, at odds. Middleton's first-hand experience was not enough for Dobbs to conclude that the Passage was not there, although it was enough for Middleton.

Because of these two knowledges, one verified by experience and the other upheld by conviction and deep distrust regarding credibility, competing narratives of northern nature could exist, to be explained by political power and knowledge authority. First-hand accounts of northern nature by a credible, authoritative producer of knowledge like Middleton were undermined by the position of power which Dobbs was in, and because the knowledge Middleton came to represent did not support English imperial

ambitions to expand via settlement through Prince Rupert's Land. In this regard, the Hudson Bay region, fur trader-naturalists, and claims about northern knowledge demonstrate the complexity of imperial knowledge production. The Hudson Bay Company and its employees, despite decades of experiential knowledge of northern landscapes, were gauged as unreliable producers of northern knowledge, which shaped the way British imperialism worked in these northern spaces.

Chapter 3: "The Uncertainty of Living": Cold Climates, Health, and Improvement in the North

In the mid-1740s, the fur trader and chief factor of Prince of Wale's Fort, James Isham, wrote of his northern habitations from his rooms on Hudson Bay: "It's a Very uncertain place for the English mens Living in these parts, we Living sometimes Like princes, and other times Like beggars."[244] While Isham referred in part to the unpredictable access to supplies and provisions for northern residents, his statement also reflected the struggle that European residents to the Far North of British North America faced in establishing settlements and trade in Prince Rupert's Land. Isham and others complained of the misery of long northern winters, in particular the weather and extreme cold, and struggled to grow adequate crops and raise domesticated animals. British residents described hanging hot cannon balls in the windows of their lodgings and burning fires with blocked chimneys to preserve the heat; despite these efforts, every morning northern residents chipped away "6 or 8 inches of ice" – wintertime visitor, Christopher Middleton reported only two to three – and thawed their frozen drinking water, their spirits, and their ink supplies.[245] James Isham described the extent to which Arctic residents had to protect themselves from exposure during the long winter months:

> Necessity obliges us to appear in another fashion not unbecomming us in this part of the world,—Which is a Beaver Coate or tockey which Reaches to the Calf of the Leg, under which a Double Lin'd waistecoate, with a flannel shirt, a pair of Leather mittins Lin'd

[244] James Isham, "Observations on Hudson's Bay," in E.E. Rich, ed., *James's Isham's Observations on Hudsons Bay, 1743 and Notes and Observations on A Book Entitled* A Voyage to Hudsons Bay in the Dobbs Galley*, 1749*, (Toronto: The Champlain Society, 1949), 116.
[245] Isham, *Observations*, 173; Christopher Middleton, "Effects of the Cold," 160.

> with Flannel or Duffle, and Cas'd with Beaver, the furr side outwards upon our hands, for the Conveniency of holding them to the face in Cold weather;—a cap of cloth Lind with flannel, and a Cape of Beaver, which hangs over the shoulders and ties under the chin, a Chin Clout, so calld., which is a piece of Duffle that covers all the face Leaving a hole for the nose and Eye's, and ties behind, a pair of good Buck skin Britches, a pair of Cloth Stockings over a nother pair of worsted Stockings, which Reaches up to the Crutch, and a pair of good Deer skin shoes, with 3 sock's upon Each foot…Notwithstanding all this warm Cloathing, the penetrating Cold has it's Effect that men freezes as aforemention'd.[246]

Coexisting alongside this attitude of continual discomfort for Europeans in the north was a belief in the healthfulness of northern climates and the sweetness and good quality of northern airs. Isham, at Prince of Wales Fort in an undated journal entry written sometime between 1743 and 1746, attested that the Hudson's Bay region was "a Very healthfull place with fine sweet air."[247] Others corroborated this claim. Chief factor Andrew Graham wrote in his journals, which spanned 1767 to 1791, that the southern part of the Hudson Bay possessed "air…commonly sweet and serene."[248] The famous traveler and Hudson's Bay Company fur trader, Samuel Hearne, proclaimed in a 1777 letter to a friend that "Myself and [my] people are as usual all in good Health, but that is no wonder since the pureness of the Air…makes it the healthiest part of the known World." Hearne goes so far as to speculate that the north increased its residents' longevity: "some of us think that we never grow any older, but as this is a new discovery, probably we may be greatly mistaken."[249] While Hearne described the northern climate

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[246] Isham, *Observations on Hudson's Bay,* 117
[247] Isham, *Observations on Hudson's Bay,* 66.
[248] Andrew Graham, "Observations on Hudson's Bay by Andrew Graham; Twenty-Five Years in the Company's Service, Fifteen Years Chief Factor at Severn York and Churchill Settlements" in Glyndwr Williams, ed., *Andrew Graham's Observations on Hudson's Bay, 1767-1791* (London: Hudson's Bay Record Society, 1969), 3.
[249] Samuel Hearne, "Letter to Humphrey Marten, 20 March 1777," HBCA 4M101.

as having a preservative quality, most of these claims are less clear about the criteria that constituted "sweetness" or "healthfulness," or why these writers utilized these descriptions, especially in light of parallel commentary on the challenge of living on the Bay. How then can these competing claims about quality of life in the North be reconciled?

Isham and Graham's affirmations of the healthful quality of the air appeared in official reports more often than private letters between the chief factors, the latter of which primarily complained about the challenge of living in the north.[250] On the one hand, this could indicate that claims of healthfulness were suitable for public consumption, while the challenge of northern living was not. The readers of more public reports were members of the governing committee of the Hudson's Bay Company, which forces the historian to question what kinds of reports would have been acceptable for submission to the committee. For instance, the descriptions of the North's healthfulness recall contemporaneous colonial boosterism; in more temperate and tropical locations, colonial promoters correlated superabundance of vegetation—a quality of tropical locations that was usually considered bad for human health—to claims of increased human fertility.[251] However, it is unlikely that Company fur trader-naturalists utilized these descriptions of a healthful north to attract colonial settlers; the HBC had no interest in establishing civilian settlements on the Bay. More settlement could have disrupted the

[250] The letters also include some details about the success or failure of the hunt, political disputes with encroaching traders, and other business-related aspects of chief factors. However, these letters are shockingly replete with commentary related to provisioning, relationships with the natives, and the difficulty of northern life.

[251] Karen O. Kupperman, "Fear of Hot Climates in the Anglo-American Colonial Experience," *William and Mary Quarterly* 41 (1984): 213-240, 219.

northern fur trade to a significant degree, resulting in added pressure and competition for the resources in northern lands. Moreover, these official reports were not made available to members of the public outside of the tightknit network of HBC governance. Additionally, during Isham's tenure as chief factor of Prince of Wales Fort in the 1740s, suspicions that the Company fabricated descriptions of northern climate, making it seem uninhabitable, ran in opposition to Company employee claims about the north's healthfulness from HBC employees, making it difficult to know if this was simply toeing the Company's line.

As opposed to a strategy for colonial boosterism, the intellectual traditions that related geography, climate, and bodies explained both how it was possible and why fur trader-naturalists could describe northern climates as healthy while also struggling with challenging climates in northern lands. British authors and climate theoreticians attested to the north's *healthfulness* based upon theories about geography that environments in the north would be healthy, in contrast to more tropical locales which were perceived as unhealthy. Early modern European authors considered tropical climates to be quite dangerous for human health; this suggests that northern climates would be healthy in comparison.[252] This intellectual tradition explained not only British ideas about the healthfulness of northern climates, but also worked to justify the imperial strategies deployed by the Hudson's Bay Company.

[252] Kuppermen, "Fear of Hot Climates," 213-240; Jan Golinski, *British Weather and the Climate of Enlightenment* (Chicago: University of Chicago Press, 2007), 138; while it was true that cold climates were considered healthy, the happy medium was still preferred for European constitutions. For more about this in particular, see Golinski's *British Weather* and Anya Zilberstein's, *Temperate Empire.*

Although the Hudson's Bay Company earned thousands of pounds a year through the fur trade, northern living and HBC relations with indigenous peoples could be rationalized by more than economics; in this chapter, I argue that the social arrangement of the fur trade could be rationalized climatologically.[253] The relationship between geography, climate, and bodily health was reflected in the Hudson Bay Company's social structure. The perceived suitability of northern people— European, Inuk, and Amerindian—to northern climates, and European prescriptions of how northern climates affected human behavior, justified Company attitudes towards their employees and their collaborators. The social stratification of the Company was linked to these perceptions of northern physiologies and the accompanying qualities of northern bodily constitutions.

In exploring the relationship between ideas of health and northern geography, the experience of the British in the Far North in the eighteenth century requires an expansive analysis of the British means of justification for maintaining colonial lands. In other words, we must look beyond the notion of "improvement" in the case of northern British "colonies." The same strategies of "improvement" that worked in more temperate and tropical locations in the British Empire, such as implementing traditional European styles of agriculture, introducing familiar domesticated animals, and clearing vegetation— which were supposed to ameliorate the "side effects" of extreme climates on European bodies— did not "work" nearly so well in northern lands, although not for lack of trying. By "work," I mean that the British presumption that these strategies could improve a

[253] E.E. Rich, *History of Hudson's Bay Company, 1670-1870* (London: The Hudson's Bay Record Society, 1959).

climate was acknowledged as being ineffective in northern landscapes. Instead of "improving" northern lands, Europeans in the North appeared to go native—instead of "improving" the land to make it more European, Europeans coped with the challenging environment by "degenerating" to a state more animal than man, sliding along a spectrum of civility.[254] The adoption of indigenous practices and stripping of what Britons thought were trademarks of civilization was in itself a deliberate, if undesirable strategy of imperial conquest in northern landscapes, and it was linked to notions of health, climate, and humanness.

In the process of living in the north for two hundred years and more, ideas that related geography, climate, and health were reshaped by Britons. Throughout the eighteenth century, competing hypotheses about northern bodies emerged. In addition to a geographical understanding of physiology, I will discuss one particular notion about the effect of not *climate,* but *cold*, that was developed from research in Hudson Bay. This conception of cold was introduced by Christopher Middleton in the 1740s, who

[254] I deliberately invoke this term "degeneration." Georges-Louis Leclerc, the Comte du Buffon, theorized that New World animals (having migrated from eastern Asia through Beringia) and people had degenerated over time; Thomas Jefferson, famously incensed by Buffon's theory, responded with the example of the moose. While Leclerc perceived this distinction between old and new world animals to hinge on the difference of continent, the implied prejudice against North American native peoples cannot be ignored; this notion of scientifically upheld savagery of native North Americans was upheld more generally than the Buffon-Jefferson debate reveals, and I think we can see it playing out in the case of northern indigenous peoples in sub-Arctic and Arctic North American history. For more on this subject see Lee Alan Dugatkin, *Mr. Jefferson and The Giant Moose: Natural History in Early America* (Chicago: University of Chicago Press, 2009). See also Katia Sainson, "Revolutions in Time: Chateaubriand on the Antiquity of the Earth," *French Forum* 30 (2005), 47-63. Importantly, French fur traders had an easier time of translocating between indigenous and western culture, which perhaps prompted the success of French alliances with Amerindians. For more, see Ann M. Carlos and Frank D. Lewis, "Native Americans and exchange: strategies and interactions before 1800," in *The Cambridge History of Capitalism, Volume 1: The Rise of Capitalism: From Ancient Origins to 1848* (Cambridge: Cambridge University Press, 2012), pp.455-490.

conceived of cold as material and able to alter the body, regardless of bodily constitution. In so doing, Middleton's idea of cold, which he based almost exclusively on its effects upon instruments, was extrapolated to the ability of human bodies to function in incredible cold, a connection made possible by suggestions of his curiosity about mechanistic worldviews. Unsurprisingly, he found that neither tools nor people functioned well in the cold.

Many historians have produced fruitful work around similar challenges of imperial efforts in extreme climates, scholarship that has assessed early modern theories about geography, environmental determinism, medicine, and the body in the context of empire. However, most of this work has focused on the relationship between warm or more temperate latitudes and the body, analyses which seemed initially to be a product of primary source availability.[255] Environmental historians and historians of science have focused on early modern understandings of warm and hot environments perhaps because those environments best exemplified and highlighted the challenges that Europeans faced in their colonial encounters, like tropical diseases. Tropical places have also been the sites of incredible human atrocities, environments that supported African slavery and Amerindian genocide, which has motivated environmental justice-conscious scholarship

[255] I will site here a few examples of works that deal with this subject. See David Arnold, *The Tropics and the Traveling Gaze: India, Landscape, and Science, 1800-1856* (Seattle: University of Washington Press, 2006); David Arnold, *Science, Technology and Medicine in Colonial India* (Cambridge: Cambridge University Press, 2000); Paula De Vos, "Natural History and the Pursuit of Empire in Eighteenth-Century Spain," *Eighteenth-Century Studies* 40 (2007): 209-239; Martha Few, *For All of Humanity: Mesoamerican and Colonial Medicine in Enlightenment Guatemala,* (Phoenix: University of Arizona Press, 2015); Stuart McCook, *States of Nature: Science, Agriculture, and Environment in the Spanish Caribbean, 1760-1940* (Austin: University of Texas Press, 2002); Daniela Bleichmar, *Visible Empire: Botanical Expeditions and Visual Culture in the Hispanic Enlightenment* (Chicago: University of Chicago Press, 2012).

and postcolonial histories of empire. In addition, thousands of Britons traveled to warm climates; only hundreds made their homes in the farthest northern colonies. The primary exceptions to this historiographical trend have been Karen Oslund's *Iceland Imagined* (2011) and Anya Zilberstein's, *Temperate Empire: Making Climate Change in Early America* (2016) which historicize colonial experiences in the northern temperate zones. It's important not to neglect experiences in the North for two reasons: 1) northern colonialism took a different shape in the British Empire, and 2) The British were almost solely responsible for shaping the western vision of the Arctic that was known at the beginning of the twentieth century, which influenced our long term relationship with the North.

Intellectual Traditions of Northern Bodies

From a combination of Hippocrates, Pliny, Strabo and other classical thinkers, the British believed that northern climates possessed particularly healthful qualities. For example, classical conceptions of "Hyperborea" depicted a paradisiacal utopia, a theory that was periodically debated throughout the eighteenth and nineteenth centuries until exploration to the North Pole settled the matter. As I showed in chapter one, these conceptualizations of the Far North influenced the earliest British explorations to these regions and these concepts were highly conserved even into the nineteenth century. However, the idea that the northern climates possessed certain healthful qualities did not solely exist in geographical understandings (the physical shape of lands and waters in a cartography sense), but in medical climatological ideas (how climate and health are

intertwined) about the northern latitudes, which persisted throughout the eighteenth century.

Classical thinkers in particular conceptualized geography and linked it to, if not health and medicine, habitability. Since Aristotle, depictions of the geography of the earth were limited by the extent of the ecumene ("oikumene"), the habitable portion of the planet—there was no real study of geography beyond the ecumene, although the study of the cosmos and its arrangement was encapsulated by astronomy and astrology, which was not unrelated to physical geography.[256] In this understanding, the world was carved up into layers of habitability: the one torrid zone, two temperate zones, and two frigid zones.[257] Even after medieval and early modern explorers extended the realm of habitability by exploration into areas with non-European inhabitants, in addition to the medieval establishment of settlements in Iceland, discussions of climate and understandings of geography followed the Aristotelian model and explained some attitudes about certain northern regions like northern Britain and beyond. During Roman times and throughout the Middle Ages, the Far North and its fringes were both delineated by and disputed in the context of the ecumene. Some thinkers extended the ecumene as far as Britain, and others thought that was the very edge of habitability.[258]

In its original, classical understanding, the ecumene particularly referred to the more temperate regions around the Mediterranean, while the hospitability of farther flung

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[256] James S. Romm, *The Edges of the Earth in Ancient Thought: Geography, Exploration, and Fiction,* (Princeton: Princeton University Press, 1992), 23-28.
[257] Romm, *Edges of the Earth*, 130, Zilberstein, *Temperate Empire*, 19-52; Jan Golinski, *British Weather,* 173-174.
[258] Romm, *Edges of the Earth,* 141.

regions came under suspicion when it came to not just quality of life but simply put, survivability.[259] In ancient Greece and Rome, what bounded the ecumene varied, though the ecumene was generally thought to be surrounded by ocean, forming a habitable island. Beyond this nebulous horizon potentially existed other exceptional lands, like Hyperborea and Ethiopia.[260] With Aristotle, the earth coalesced into a shape in which there were two obviously habitable zones: one in the northern hemisphere and one in the southern hemisphere. These regions came to be known as the northern and southern temperate zones, sandwiched toward the equator by the torrid zone and toward the poles by the frigid zones. These ecumenes were characterized by their mild temperatures, their arability, and other necessary climatic characteristics that promoted the development of human civilization.

Ptolemy, the second-century Alexandrian, refined the anatomy of the globe further, invoking a more mathematical approach to geography. Ptolemy sliced the five-zone model of the Aristotelian world into even more layers of habitability. Ptolemy referred to these more finely cut zones as "climes," which ranged from the equator northwards. Climes, also called parallels, were interspersed on Ptolemaic maps corresponding to the length of daylight. Between each parallel moving north, a half-hour of extra daylight was added. For instance, the seventh clime, corresponding with Thule

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[259] Zilberstein, *Temperate Empire,* 26; Kimble, *Geography in the Middle Ages*, 41. Kimble describes how the Venerable Bede was an important medieval scholar to reinforce the notion of the five parts of the earth.

[260] Ethiopia was considered to be something of an outlier when it came to the relationship between habitable ecumene and civilization in ancient thought. For more on this topic, see James S. Romm *The Edges of the Earth in Ancient Thought: Geography, Exploration, and Fiction* (Princeton: Princeton University Press, 1992), "Chapter 2: Hyperborean and Ethiopian."

where it transects the meridian at Alexandria, constituted 20 hours of daylight.[261] Nonetheless, the seventh clime, which encapsulated the Far North, came to represent the northern realm of habitability by the first century AD. The seventh clime's southern parameter included Paris before stretching northward, encapsulating London.

In the second century, when Ptolemy devised these climes, what was known of northern geography was largely from Pytheas, the Marseillian explorer who traveled to Britain and perhaps even farther northward in the fourth century BC.[262] From Pytheas, Ptolemy would have known something about Britain and Thule, which positioned Britain at the fringe of the ecumene.[263] For Ptolemy, the seventh clime's northern parameter fell across Thule, which would have been the tip of the ecumene. From Ptolemy and Pytheas, the North Sea and the surrounding areas were considered to be a place for daring and adventurous Greco-Romans and as a final frontier for the empire-building Romans.[264]

However, Ptolemy's *Geography* was not recovered in Western Europe until 1406. Nonetheless, two tradition of northern geography persisted through the medieval period. One was a Plinian vision of the north, which emphasized descriptive geography, and in particular upheld the idea that Hyperborea, a *utopian* realm, existed beyond the fringe of the ecumene.[265] For instance, Isidore of Seville's *Etymologies* included information about

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[261] Aubrey Diller, "The Parallels on Ptolemaic Maps," *Isis* 30 (1941): 4-7, 6-7; J. Lennart Berggren and Alexander Jones, *Ptolemy's Geography: An Annotated Translation of the Theoretical Chapters* (Princeton: Princeton University Press, 2000); we can roughly accept Thule to be in the vicinity of Iceland.

[262] There is some debate that the seven climes were pre-Ptolemaic, but Ptolemy's *Geography* is the most substantive surviving work from the ancient world on cartography, so where he came to this notion is primarily speculative.

[263] Kimble, *Geography in the Middle Ages*, 9.

[264] Romm, *Edges of the Earth*, 141-143.

[265] Kimble, *Geography in the Middle Ages*, 10.

both Hyperborea and an unliveable north. While Isidore speculated that the far north and the far south of the earth were uninhabitable due to cold, he also described magical animal species which lived in Hyperborea.[266] As these contrasts sharpened in the late Middle Ages and into the Renaissance, especially with the discovery of the Ptolemaic tradition of northern cartographic representations which Abraham Ortelius replicated, new evidentiary standards were required to verify the habitability of far northern lands.

Thoughts on the habitable parts of the planet were eventually influenced by ongoing changes to natural philosophical thought. In the seventeenth century, the ecumene had expanded dramatically; new explanations of habitability emerged with the rise of natural theological understandings of nature. For natural theologians and natural philosophers, God's providence came to explain how the movement of the sun on the ecliptic allowed for life to exist all over the earth, making certain regions livable, even as classical traditions predicted they would not be, like the Far North. Amidst changes to the cosmological worldview and mathematical proofs for the theory of heliocentricity, Thomas Browne, the English polymath, for instance, claimed that "every part of the earth [was] habitable," upheld regardless of whether you accepted Copernicus's ideas about astronomy.[267] Browne's position was that God had organized the earth and its relationship to the sun to avoid the following:

> that unto the one [hemisphere] it would be perpetual day; unto the other perpetual night; the one would be oppressed with constant heat, the other with insufferable cold; and so the defect of alternation would utterly impugn the generation of all things; which natural

[266] Kimble, *The Geography of the Earth*, 36; Isidore of Seville, *Etymologiae sive originum libri XX* (Oxford: Oxford University Press, 1911): 2.
[267] Thomas Browne, *The Works Of the Learned Sr. Thomas Brown* (London: Printed for Tho. Basset, Ric. Chiswell, Tho. Sawbridge, Charles Mearn, and Charles Brome, 1686), 240, 242.

> require a vicissitude of heat to their production, and no less to their increase and conservation.[268]

By the same reckoning, seasons allowed for the growth of plants and animals at different times of the year, preventing a perpetual and "deplorable and comfortless Winter."[269] The world was arranged by God to be habitable for all creatures on Earth. This explained, and could be made obvious with observation in the Far North as well.

In tandem with natural theological positions, Aristotelian and Ptolemaic conceptualizations of geography and climate were merged with Hippocratic medical philosophy and between the sixteenth and eighteenth century very much shaped understandings of the north. Hippocratic medical philosophy carried with it a strong connection between geographical position and bodily disposition. In line with the habitability of temperate regions, Hippocrates linked temperate climate with good health, as: "Luxury and ease of cultivation are to be found most often when there are no violent extremes, but when a temperate climate prevails."[270] Hippocrates argued that all places had a particular set of qualities that predisposed the people living in it to certain diseases;

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[268] Browne, *The Works of the Learned Sr. Thomas Brown*, 241. A survey of the secondary literature on Thomas Browne offers mixed interpretations of Browne's acceptance of Copernicus. A 1903 bibliographic entry on Browne claims he believed in the "discarded Ptolemaic system of astronomy" (74); Clayton M. Hamilton, "Sir Thomas Browne," *The Sewanee Review*, 11 (1903): 64-86. A contradicting account exists in a 1925 article in which the author interprets Browne's comments to include a grudging acceptance of Copernicus; Howell, Almonte C. "Sir Thomas Browne and Seventeenth-Century Thought." *Studies in Philology* 22 (1925): 61-80.

[269] Browne, *The Works*, 241.

[270] Hippocrates, "Air, Waters, Places," in *Hippocratic Writings*, ed. G.E.R. Lloyd (London: Penguin Books, 1978), 159. I argue that these are separate traditions, particularly in terms of scale. Hippocratic thinkers were focused on very local climates in the ability to affect a person's disposition and therefore health. Meanwhile, Aristotle and Ptolemy were thinking about the planet and climate in a much larger way. By the eighteenth century, these traditions were deeply entangled.

although sturdy, people living in the path of cold, north winds tended to be bilious, with "intractable" bowels—in short, poor digestion.

However, for Hippocrates, people living in northern climates were not actually any likelier to be any healthier than in other climates—bodies were idiosyncratic, so their relationship to a particular region was dependent upon their natural composition of the humors. By the sixteenth century, certainly, medical theorists' interpretations of Hippocrates had stretched Hippocratic thinking and applied it regionally. Hippocrates had expected that warm and moist places were more likely to experience epidemics, and that hot, humid air was especially dangerous; physicians and naturalists living in the sixteenth, seventeenth and eighteenth centuries accepted this notion and applied it far more broadly than Hippocratic thinkers had – cold places were healthiest, being largely exempt from humid vapors and warm mists. This to a certain degree explains HBC agents' conceptions that the north was healthful and sweet.

In addition to the association between cooler regions and greater bodily health, climate was determined by uniformity across latitude.[271] The North, like more temperate and tropical climates, was expected to ascribe to a medical framework in which latitude determined climate zones and thus, the quality of living in those zones. The body, some European climate theoreticians believed, was best suited to its native climatic zone, which posed a challenge to migration. However, colonial promoters also leveraged scientific beliefs about certain climates to encourage translocation. For instance, Karen O.

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[271] Zilberstein, *Temperate Empire*, 17-42; Golinski, *British Weather and the Climate of Enlightenment*, 173-174.

Kupperman's classic 1984 article, "Fear of Hot Climates in the Anglo-American Colonial Experience" points out how the superabundance of the Carolinas, though dangerous to European bodies, created a perception that the region was fertile, not just for agriculture, but for immigrant families.[272] That tension between fertility—health—and overabundance—danger—was explored and manipulated by imperial promoters who wanted to portray the Carolinas as desirable for emigration.[273]

To a certain degree, perceptions of the north can be expected to be the converse of many of these expectations about warmer climates. Since climates nearer to the equator were seen as less healthful, despite the proliferation of vegetation, it was assumed that climates farther from the equator and nearer to the poles were healthier, if sparsely populated by plants and animals. By the eighteenth century, Europeans understood that the expectation of uniform climate could not be upheld universally; they recognized that the New World possessed much more extreme climates, in some cases, than its latitudinal twins on the other side of the Atlantic. Nonetheless, the belief in the spectacularly healthy climate of the north persisted, though the geographical knowledge of the north changed with closer encounters by European cartographers and explorers, working often with indigenous peoples who knew the terrain best. The north possessed fewer of the miasmatic threats of warmer climates: there were fewer diseases, fewer insects (at least in the winter), and the very air itself was considered sweet and pure. Additionally, unlike

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[272] Karen O. Kupperman, "Fear of Hot Climates in the Anglo-American Colonial Experience," *William and Mary Quarterly* 41 (1984): 213-240.
[273] Kupperman, "Fear of Hot Climates," 228.

diseases like malaria and yellow fever, the north was not associated with any particular contagions, with perhaps the exception of gout.[274]

By the eighteenth century, Ptolemaic geographical traditions and Hippocratic medical philosophy manifested itself in a medico-geographical understanding of climate and health. Climate theoreticians, political philosophers, and physicians explored these ideas in a wide number of texts, including Baron de Montesquieu's 1748 *De l'esprit des loix* (*The Spirit of the Laws*), which among other things, linked governance and civilization to environment.[275] Montesquieu claimed, supported by studying a frozen sheep's tongue, that in "cold countries the cutis is constringed, and the papillae compressed…the sensation does not reach the brain but when it is very strong. Now, imagination, taste, sensibility, and vivacity, depend on an infinite number of small sensations."[276] The consequence of these affects of the cold is "not such lively sensations," preventing both pleasure and pain.[277] What then "throws the spirits into motion," in northern lands, are activities that prompt strong reactions, like "hunting, travelling, war, and wine." It seems quite clear, however, that Montesquieu applied these theories to northern Europeans, as northern climates produced "people who have few vices, many virtues, a great share of frankness and sincerity."[278] Northern indigenous

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[274] This runs counter, in many cases, to the actual experience of epidemics that ravaged indigenous communities that came into contact with smallpox, diphtheria, and other European imports in the northern regions of North America. Being largely removed from European networks of communication, a generalized attitude of apathy towards indigenous communities, and a lack of genuine understanding of indigenous culture, news of indigenous epidemics rarely made an impact on Europeans in the Far North.

[275] Charles de Secondat, Baron de Montesquieu, *De l'esprit des loix* (Paris, 1748).

[276] Charles de Secondant, Baron de Montesquieu, *The spirit of laws. Translated from the French of M. de Secondant, Baron de Montesquieu* (Edinburgh, 1768), 292.

[277] Montesquieu, *Spirit of laws*, 293.

[278] Montesquieu, *Spirit of laws*, 294.

peoples, as I will show, who were seen still to possess northern constitutions, had resounding differences in virtues, as per British observers, when compared to northern Europeans.

Montesquieu's ideas were well-received and perpetuated throughout the eighteenth century by well-known intellectuals like Georges-Louis LeClerc, the Comte du Buffon. Lesser known individuals, however, also worked within Montesquieu's framework. British physician William Falconer, in his 1781 "Remarks on the Influence of Climate," merged the link between climate and civilization with a material, medical understanding of the body, citing most often Hippocrates and Montesquieu, but following strongly in the tradition of Albrecht Von Haller.[279] Falconer precipitated many ideas of earlier thinkers that have been beautifully covered elsewhere.[280] For my purposes here, Falconer's interpretation offers a most useful view towards understanding how bodies in the Far North would have been perceived by Britons over the eighteenth century, which emphasized the relationship between climate, bodies, and culture. Generally, Falconer's distillation of these ideas yields a medical basis of the suitability of the north for Britons and other Europeans.

Falconer's book presents, much like other climate theoreticians from this period, a global look at the influence of climate upon the body, covering all three climatic zones, and expressly upholds the attitude that humans were an "exception to the rule" of animal

[279] Von Haller, a student of Hermann Boerhaave, understood disease and passions to be caused by irritability in the fibers of the body.
[280] See Jan Golinski, *British Weather,* 137-155, for a heftier description of the intellectual milieu which produced Falconer.

and plant distribution, in which the further away one moved from the equator, the less biodiversity—using this term very loosely—one would find.[281] Falconer's interest in the relationship between humans and climate coincided with this unique ability of the human species; humans were differentiated from other animals and from plants in some part because of their ability "to subsist in almost every climate…reign[ing] with the lion and tyger under the equator, and the bear and rein-deer beyond the Polar Circle."[282] For Falconer and other physicians and natural philosophers, this observation of the human ability to survive in every climate, as suggested by eighteenth-century ideas about nature and God, supported the idea that humans were *meant* to live in every type of climate and terrain. Part of the ability to subsist and survive in these extreme, less ideal climates had to do with human ingenuity when it came to adapting the climate: the universality of the human species "enable him to supply the defects, and correct the exuberances of particular climates and situations," rendering them all that much more livable for human—and particularly English—domination, raising humans above other parts of nature due to his ability to tinker with and to improve nature.[283]

How humans reacted to and could improve far northern climates is not the primary or sole focus of Falconer's dissertation, and rather becomes only one third of his treatise. The underlying assumptions that Falconer built atop were purely physiological

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[281] William Falconer, *Remarks on the influence of climate, situation, nature of country, population, nature of food, and way of life, on the disposition and temper, manners and behaviour, intellects, laws and customs, form of government, and religion, of mankind* (London: Printed for C. Dilly, 1781), 1. This notion is further elaborated upon by early nineteenth century thinkers like Alexander von Humboldt and Charles Lyell.

[282] Falconer, *Remarks on the influence of climate*, 1-2.

[283] Falconer, *Remarks on the influence of climate*, 2.

and medical. To create the foundation for his observations on culture, Falconer first described how his simplistic climate categories influenced human bodies. For Falconer, the climate determined how a body responded to circumstances, as opposed to later conceptions of race, which would presuppose a body's physiological response. In the mid-eighteenth to late eighteenth century, racial science and racial medicine were emergent, but Falconer still presumes that climate is the most influential determination of a person's ability to thrive in a particular climate and to predict behavior and attitude.[284]

Falconer described how cold temperatures altered the state of the human body, incorporating both Hippocratic and iatromechanics into his rationale, characteristic of the late eighteenth century in which Falconer worked. In his third chapter, "Effects of the Cold on the Living Human Body," Falconer described that cold:

> corrugates or wrinkles the cuticle, and causes the cutaneous papillae to contract, and to retire deeper into the skin. It also closes the orifices of the cutaneous glands, and thus prevents the access of any irritating substance. By contracting the nervous papillae, it diminishes perspiration, and probably makes the perspirable matter more viscid, which renders the cuticle more dry and rigid, and even considerably thicker; by all which the accuracy of sensation or feeling is much diminished.[285]

In other words, cold really was numbing, but not just in the sensory way that we are accustomed to thinking when our fingers tips get too frozen. Rather, the entire human body, including its nerves and passions, lost sensation as the body both dried and hardened.[286]

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[284] Suman Seth, *Difference and Disease: Medicine, Race, and Locality in the Eighteenth-Century British Empire* (Cambridge University Press, forthcoming).

[285] Falconer, *Remarks on the Influence of Climate*, 5.

[286] This can be likened to Albrecht Von Haller's notion of fibers. Eugenio Frixione, "Irritable Glue: The Haller-Whytt Controversy on the Mechanism of Muscle Contraction," in Harry Whitaker, C.U.M. Smith, and Stanley Finger, eds. *Brain, Mind, and Medicine: Essays in Eighteenth-century Neuroscience* (New York: Springer, 2007), 117-118.

The components of the body, which Falconer does not elucidate to be fibers, atoms, corpuscles, or otherwise, nonetheless reacts to the coldness of the surrounding environment and begins to harden in response.[287] Simultaneously, it was no surprise that the body would dry out in cold environments, as Hippocratic medical philosophy had connected coldness and dryness two millennia before. In addition to losing sensation, there were several other ways that cold influenced the human body. It reduced the "secretion of bile," and "the bodily strength is also greater, the bulk of the body larger, and its humours less disposed to putrefaction."[288]

While Falconer did not specifically write about the effect of cold on a human body particularly in light of activities of the HBC in the Far North, it certainly bore reflection and offered explanation on the treatment of Hudson's Bay Company employees of both European and native descent. In addition, although Falconer wrote his "Remarks on the Influence of Climate" in 1781, it reflects how eighteenth century medicine was a mixture of conserved ideas from the classical period and ideas that emerged from anatomical dissection and experimentation in the Enlightenment tradition. Falconer incorporated ideas like fiber theory, associated with anatomist and physicians like Albrecht von Haller, George Cheyne and Benjamin Rush, and which characterize late eighteenth-century medical thinking.[289] However, Falconer also embodies the medical climatological traditions of an earlier period, showing how despite

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[287] Falconer, *Remarks*, 5.
[288] Falconer, *Remarks*, 5.
[289] Hisao Ishizuka, "The Elasticity of the Animal Fibre: Movement and Life in Enlightenment Medicine," *History of Science* 56 (2006): 435-468; Hisao Ishizuka, "'Fibre Body': The Concept of Fibre in Eighteenth-century Medicine, c. 1700-41," *Medical History* 56 (2012): 562-584.

transformations to medical theories, the implications of associations between bodies and climate towards certain groups of people, like indigenous communities, remained unchanged.

The intellectual frameworks that linked geography and habitability, climate and health, and which underpinned the operations of Europeans in the Far North of North America explain to a certain extent the imperial strategies and attitudes, particularly of the British, in Arctic climates. The intellectual backdrops provide insight into the social arrangement of the Hudson's Bay Company and how the Company negotiated its diverse employees, while also shedding light on the particular strategies adopted by the HBC in imperializing northern spaces, which I will revisit in the last section of this chapter.

Cold Matters: Examining Bodies and Instruments in the North

The intellectual frameworks which Britons brought into the Far North via the Hudson's Bay Company, including those of "improvement" and the link between climate and bodily constitution, were not to be unrivaled or unchanged by their encounters with the reality of northern living. Those ideas continued to operate in northern imperial spaces; medical climatology both explained to and justified for the British the behavior and treatment of indigenous peoples and even the arrangement of their Company, but new ideas emerged as well. This section will examine Captain Christopher Middleton's idea about cold and bodies, inanimate and animate, which emerged in the 1730s and 1740s from his experiences in the North. Focusing on the effect of *cold*, specifically, and not *climate*, Middleton's ideas were precipitated through first-hand experience with

northern conditions on the ground. This is particularly interesting, because it represents an alternative understanding to broadly-imagined climatic conditions that extended uniformly across latitude. So although I will diverge from chronological order to explore Middleton's contributions, the point remains: the ideas which were imported to the north, represented by those persistent theories of Montesquieu and Falconer, did not operate uncontested in northern lands. In the practice of living in the north, different understandings of the influence of the environment emerged.

In 1742, Christopher Middleton, the scandal-ridden ex-employee of the Hudson's Bay Company from chapter two, introduced an interpretation of cold, which offered an alternative iatromechanical explanation of cold's influence on objects and on bodies. Middleton's paper "Effects of the Cold" was read on October 28, 1742 to the Royal Society by Edmond Halley.[290] The paper would receive the Copley Medal, the most prestigious award given for excellent scientific merit by the Royal Society.[291] In it, Middleton paints a picture of cold as a material entity that could cause physical changes to objects, people, and animals exposed to freezing cold conditions.

Middleton's ideas about cold must be interpreted in their very particular intellectual context. The 1730s and 1740s was a period in which many theories of matter emerged in the natural philosophical milieu, and many of these theories were rejected,

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[290] Christopher Middleton, "Effects of the Cold; Together with Observations of the Longitude, Latitude, and Declination of the Magnetic Needle, a Prince of Wales's Fort, upon Churchill-River in Hudson's Bay, North America; By Capt. Christopher Middleton, F.R.S. Comander of his Majesty's Ship Furnace, 1741-2," *Philosophical Transactions* 42 (1742-1743): 157-171; Binnema, *Enlightened Zeal*, 62.

[291] Ted Binnema, *Enlightened Zeal*, 62, implies that the rationale for awarding Middleton the Copley medal was because of his use of the new technologies, and the solution for handling these instruments in cold climates. This may be partially true, but I push back against this a bit; in context, Middleton offered insight into a world that was both curious and obscure to most Britons.

forgotten, or considered insignificant by the predominant scientific culture.[292] Certainly Middleton's ideas and observations received the attention of the Royal Society, receiving as it would the Copley Medal in 1742, but it is impossible to call Middleton's ideas a "theory," as his conception of cold was unclearly connected to other ideas about matter, and Middleton primarily recorded anecdotes about cold, as opposed to offering any unified theory. Separating the philosophical underpinnings of his ideas from these anecdotes about cold requires us to perform close textual analysis of his publications to question the assumptions he makes.

When considering Middleton and the environment in which he "examined" cold, it makes sense that he would have envisioned cold as a material or solid entity.[293] Not only could he "see" it, as I will explain, but he was clearly immersed in ideas about matter theory. Our first clue to this is that Middleton utilized language associated with matter theory, such as "particles," "vapours," and other terminology to reckon with the alterations made by cold temperatures on objects exposed to those conditions. While Middleton did not have a concrete matter theory to undergird his observations, he was very much utilizing the language of materiality, which may have given power to his work in the eyes of the Royal Society. Middleton also clearly had read authors who were thinking about matter theory. He felt that his observations supported Rene Descartes's

[292] Ishizuka, "The Elasticity of the Animal Fibre," 435-468; Ishizuka, "'Fibre Body'," 562-584.
[293] This is left to speculation, as many of Middleton's scientific papers are lost to the present.

conclusions about certain meteorological phenomena, like auroras and mock-suns.[294] In short, his work could be a reflection of his readings of Newton, Descartes, and others.[295]

Middleton's idea of cold was produced in a very specific historical context as well, one which we can safely and confidently say is largely unique to Middleton. Middleton was one of the few members of the Royal Society who performed empirical work in the Far North in the eighteenth century. He was a member of a small collection of European naturalists and philosophers, which includes William Wales, Joseph Dymond, Pierre-Louis Maupertuis, and a number of Russian travelers to Siberia, to formally record empirical observations of the north while in the north.[296] Middleton, who had worked as a ship's captain for the Hudson's Bay Company, was intimately familiar with the Hudson Bay region, spending nearly two decades of his life living there. By the time he joined the Hudson's Bay Company as a ship's captain in 1721, he already had a decade of experience sailing on a privateer ship. While his formal education is unknown, Middleton certainly had years of experience sailing around the difficult waters of the Canadian Archipelago. He also wintered over at Hudson's Bay, living at the fort at Churchill during the winter months. This experience exposed him to the variability of

[294] Middleton, "Effects of the Cold," 162.
[295] C.B. Wilde, "Matter and Spirit as Natural Symbols in Eighteenth-Century British Natural Philosophy," *The British Journal for the History of Science* 15 (1982): 99-131, 99-100.
[296] For more on these natural philosophers, see Mary Terrall, *The Man Who Flattened the Earth: Maupertuis and the Sciences in the Enlightenment* (Chicago: Chicago University Press, 2002); Ted Binnema, *Enlightened Zeal*, 79-88.

weather on the Bay, but also allowed him to establish relationships with Hudson's Bay Company agents who had side interests in natural history.[297]

By 1725, Middleton's navigational expertise earned him command of his own ship, eventually becoming one of the most senior captains in the Hudson's Bay Company fleet. In 1726, he published his first record of observations of northern climate in the *Philosophical Transactions*, which earned him the attention of Arthur Dobbs, a member of the Irish House of Commons, who had a particular interest in locating the Northwest Passage. Through Dobbs's encouragement and connections, Middleton left the service of the Hudson's Bay Company in order to work as a captain in the Royal Navy, searching under Dobb's onus for the Passage.

While wintering over at York Fort, at Churchill, in the winter of 1741 Middleton became acquainted with the fur trader-naturalist, James Isham.[298] Isham assisted Middleton in collecting observations about the north, recording astronomical details and aspects of the climate. Middleton, in making his observations, used a number of scientific tools and equipment. Middleton's use of these scientific instruments, in particular his difficulty in using them in extreme cold, shaped his understanding of how cold temperatures influenced objects. Isham testified to Middleton's difficulties using technologies in the extreme weather conditions:

> I was by when the Said C.M. try'd several times to make observations of some Celestial Bodies, perticular [sic] the Emersions of the salitties [sic] of Jupiter, with Reflecting and

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[297] Binnema, *Enlightened Zeal*, 61-63, 68-67; Glyndwr Williams, "Christopher Middleton," *Dictionary of Canadian Biography* 3 (1974): http://www.biographi.ca/en/bio/middleton_christopher_3E.html, September 30, 2017; Houston, Ball and Houston, *Eighteenth-Century Naturalists*, 41.

[298] Barr and Williams, "The Voyage: Introduction," in William Barr and Glyndwr Williams, eds., *Voyages to Hudson Bay in Search of a Northwest Passage, 1741-1747. Volume 1: The Voyage of Christopher Middleton* 1741-1742 (London: Hakluyt Society, 1994), 101.

> Refracting tellescopes,—but the metals and glasses by that time fix'd to the objec't was Cov'd. A 1/4 inch thick of Ice, and therefore the Object Renderd indestinct [sic], so that itt's with much Difficulty that any observation can be take'n.[299]

Through the effects of cold on these instruments, Middleton's interpretation of the mechanism by which cold interacts with objects is markedly material: "The Air is filled with innumerable Particles of Ice, very sharp and angular, and plainly perceptible to the Naked Eye."[300] While cold itself was not a physical entity, the cold caused an effect that could be interpreted and understood best through the language of matter theory. These particles of ice, which he described above, attached to objects and formed plaques that decreased the efficiency of scientific equipment. Cold temperatures altered the air such that its effects on objects and living beings was caused by the particles that would form in the air under very cold conditions.

In a similar instance, Middleton discussed the influence of cold on a compass. Published in the *Philosophical Transactions* in 1737, it shows Middleton's early attempts to understand the mechanism of cold's effects. He is left uncertain: "Whether the Cold of the Climate hath a Power to deprive the Needle of its Virtue for a Time, or that the Friction is increas'd thereby to such a Degree, as it cannot be overcome by the Magnetism, I am not able to say."[301] Here there is something of a tension between the mechanical position and perhaps early hints at vitalism. On the one hand, Middleton sees friction, increased by the cold, as potentially prohibiting the motion of the compass.

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[299] Isham, *Isham's Observations*, 71.
[300] Middleton, "Effects of the Cold," 159.
[301] Christopher Middleton, "An Observation of the Magnetic Needle being so affected by great Cold, that it would not Traverse, by Capt. Christopher Middleton, F.R.S.," *Philosophical Transactions* 1737-1738 (40), 310-311: 311.

However, Middleton also suggests a potentially animistic power of cold which removes the needle's ability to react to magnetism, almost akin to the vital powers that eighteenth-century natural philosophers conferred upon nature. While Middleton does not arrive at a conclusion, it is clear that he transported his understanding of European natural philosophy to the Far North and attempted to make his experiences with cold intelligible via those concepts.[302]

We can see in Middleton's solution to the problem of the stiffened compass needle potential visions for how the cold worked to alter the compass itself. Middleton devised, to avoid the compass freezing, a system of alternating compasses every thirty minutes.[303] He found that by leaving one compass in his warmer cabins near a flame, the compass would not get too cold to function.[304] Potentially, Middleton envisioned that the particles of ice in the air lodged in the space where the compass needle touched the face of the compass, creating a stiffening which locked up the compass needle. In a warmer place, the air would not fractionate in this way.

Middleton's argument that frozen particles of water in the air affected objects also explained other phenomena of northern climates that had puzzled and intrigued explorers and visitors to the north since the classical period. These particles, Middleton argued, caused many of the meteorological and astronomical events that occurred frequently in the Far North. Hudson's Bay Company records indicated every such event, with daily

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[302] In particular, I refer to Peter Hans Reill, *Vitalizing Nature in the Enlightenment,* (Berkeley: University of California Press, 2005) and where Reill discusses the tension between mechanistic and vitalist workings in nature in his chapter on organization and order in nature in the eighteenth century.
[303] Middleton "An Observation of the Magnetic Needle," 311.
[304] Middleton, "An Observation of the Magnetic Needle," 311.

meteorological records marking the presence of parhelias, coronas, and auroras. Middleton claims that "the frequent Appearance of these Phaenomena [parhelias, coronas] in this frozen Clime seems to confirm Descartes's Hypothesis, who supposes them to proceed from Ice suspended in the Air."[305]

In "Effects of the Cold," Middleton applied his observations about the ice particles in the air to the influence of cold temperatures on the human body. According to Middleton, "fogs and mists," which he believed came from above the Arctic Circle, were visible "in Icicles innumerable, as small as fine Hairs or Threads, and pointed as sharp as Needles."[306] The sharpness of these particles of ice could penetrate clothing and skin, raising blisters. In order to treat these blisters, Middleton described that "we make the best of our Way to a Fire, and get warm Water, wherewith we bathe it, and thereby dissipate the Humours raised by the frozen Air."[307]

This is the first suggestion that Middleton's conception of the material quality of cold weather and the body was a blend of mechanical philosophy and humoral medicine. Middleton was situated at a time when traditional Hippocratic medical philosophy ran aground of a strengthening appreciation for iatromechanics. Middleton's description suggests that the particles of ice, which were considered to be very sharp, would somehow irritate the skin in such a way that it would raise humors to the surface of the skin, forming a blister. This humoral material needs to be returned to where it came from,

[305] Modern readers made be more familiar with the terms "mock sun" or "sun dog." Eighteenth-century naturalists used the term "parhelia." Middleton, "Effects of the Cold," 162
[306] Middleton, "Effects of the Cold," 163.
[307] Middleton, "Effects of the Cold," 163.

or to be removed from the body. When "dissipating" the humor failed, Middleton describes the excretion from the blister to be "hot, ferrous, watry Matter coming from under [the skin]."[308] Middleton claimed that this dangerous quality to cold weather persisted for five to six months of the year in the Bay region.

Medical theory, even in ancient times, had been very much rooted in ideas of materiality and matter.[309] Even humoral medicine, although without a notion of corpuscles, particles, or atoms, certainly possessed a material characteristic in regards to the influxes and excretion of physical substances. In this regard, iatromechanics, matter theory, and humoral medicine did not have to be at odds, but could be conceptualized to consider those substances as having smaller components which would comprise the whole. Middleton's conception of the relationship between frozen air and the humors of the body, thus, is not far-fetched or even new. Rather, it made perfect sense in the context of eighteenth-century matter theory and medical philosophy. The interest here, in Middleton's case, is his focus on and experience with cold and the endogenous emergence of his ideas from a cold region.

Unlike later eighteenth-century scholars and climatic theoreticians, like Montesquieu and Falconer, who applied their theories to climatic zones often without having been exposed to those climates, Middleton's ideas about cold were directly correlated to his ability to witness and see these particles and alterations first-hand. For Middleton, his epistemology of cold was rooted in what could be seen by the "Naked

[308] Middleton, "Effects of the Cold," 163.
[309] For instance, Hippocratic medicine has a strong material component with the four humors.

eye."[310] He believed to have seen these particles in the air, freezing to equipment, and influencing the humors of the body.

The influence of the cold on instruments also suggests to us how the scientific gaze operated in the north. Bodies were seen in many ways as instruments themselves; if an inanimate instrument was affected so detrimentally, inhibited in its functionality by cold particles, then a human body, too, would have been altered negatively in its function. This offers a contrast to the medico-geographical theories which were broadly ascribed to climate zones; in the case of Middleton's understanding of life in the north, the influence of the environment was contingent on one particular attribute, which in this case was cold. Cold could influence a body in other regions; this was not particularly dependent on latitudinal location in the world.

But what became of his ideas about cold, and did they have a lasting influence on operations in the North? In actuality, it seems that little of lasting significance became of Middleton's ideas about the cold. In the natural historical literature on the north, Middleton is largely invisible, which may be in part due to the ruin of his career and character after the dispute with Arthur Dobbs, as discussed in chapter 2. James Isham can be credited with at least knowing about Middleton's ideas and witnessing the empirical process by which Middleton came to make his observations, but it is unclear in Isham's writings that he internalized much of Middleton's concepts with any serious intellectual rigor. Additionally, more influential writers on cold climates do not mention Middleton either beyond acknowledging perhaps his descriptions of northern living, including

[310] Middleton, "Effects of the Cold," 159.

Thomas Pennant, the subject of the last chapter, who consumed nearly everything he could get his hands on in writing his natural history, *Arctic Zoology*.

Middleton's failure to publicly defend himself successfully against Arthur Dobbs's claims of obfuscation and allegiance to his former employer, the HBC, certainly did not help to bolster Middleton's natural philosophical reputation. Moreover, there is an indication that Middleton received the Copley Medal for his utilization of new technology in his northern research; that the use of his technology was more influential than his ideas about cold might suggest that the lasting impact of his brief scientific success quickly was overwhelmed.[311] It did not help that thirty years later, other scientific inquests staged in the north, like the Transit of Venus as documented by Joseph Dymond and William Wales, would have easily overshadowed Middleton's forgotten northern studies of cold.

But his legacy is less important here than the formulation of a first-hand, endogenous theory of what could happen to bodies, both animate and inanimate, in the cold of the north. It offers a different perspective, although not mutually exclusive, to that of the medical-geographical theories of the eighteenth century, which were carried into the north with European travelers. It suggests a finer-toothed comb, a more nuanced interpretation of the effect of bitter cold, as opposed to the nativism and adaptation that is required of human bodies in medical climatology. There was no escaping the material effect of cold on bodies, regardless of the body and where it came from. And in this way, human bodies were equalized under Middleton's theory, wrought by the same forces of

[311] Binnema, *Enlightened Zeal*, 62.

extreme cold. Bodily constitutions were less significant; latitude was irrelevant, except in that it could coincide with cold harsh enough to have detrimental effects on bodies. In this regard, Middleton's theory of cold tells us something about what life in the North was actually like, as opposed to geographical theories that assisted in rationalizing colonial claims to the Arctic overlaid on northern environments.

Inhabiting and Laboring in the Frigid Zone: Indigenous Peoples and Britons Survive the North

Despite the reality that cold affected human bodies equally, Britons overlaid an underlying intellectual framework onto northern landscapes, which tells us how they *perceived*, if not actualized, survival in the north. The success of British imperial projects on Hudson Bay, as informed by the medical-geographical understandings that I discussed earlier in this chapter, had bearing on how the HBC approached making changes to the colonial landscapes they encountered. In exploring imperial strategies that the HBC used to try to alter the north and themselves, we can see how Britons in the north internalized medical understandings of climate and deployed them in their operations to legitimize their presence and their claims of sovereignty. The concept and strategy of "improvement" of a colonial landscape—such as planting European crops—was only one way in which Hudson's Bay Company employees rationalized their experiences in the Far North. The deployment of other strategies, like "degeneration and the adoption of indigenous practices, exposed a link between Hudson's Bay Company's operations and

social infrastructure with intellectual frameworks of health of both human bodies and of the land itself.

Britons in the Far North attempted to "improve" their local landscapes by traditional means of "improvement," such as those outlined by Richard Drayton in *Nature's Government*.[312] One attempt to overcome the challenge of northern living was to develop agriculture in the north. At the very least, attempts at agriculture provided food for the fur trading factories without having to rely upon the infrequent shipments of goods from Great Britain. Andrew Graham, chief factor of Severn, York and Churchill forts over his twenty-five-year career, remarked that gardens around the forts "by care and manuring turn out very well."[313] On the southern shores of the Bay, forts like Albany and Moose "produce excellent lettuce, cresses, radishes, onions, spinach, coleworts, turnits [sic], pease [sic], beans."[314] Fresh vegetables would have been an essential addition to the diets of Company employees, where one of the most precarious ailments of northern living was scurvy.

However, despite these successes, Graham and others report more frequently on the failed attempts of agricultural development. These "trials" at growing European vegetables in the northern climates were attempted yearly, but the short growing season led to unfruitful yields more often than not, especially of essential grain staples. Graham reports: "Barley and oats have been sown several times in the gardens at Albany and

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[312] Richard Drayton, *Nature's Government: Science, Imperial Britain and the 'Improvement' of the World* (New Haven: Yale University Press, 2000).
[313] Graham, *Observations on Hudson's Bay*, 134.
[314] Graham, *Observations on Hudson's Bay*, 134.

Moose Forts, which growed fine and high, but never advanced so far as to fill, because the frosty nights begins so soon in August." Meanwhile, a "trial was made to grow barley on the south side of the garden at Severn Settlement; it came up pretty well, grew to a proper length and the ear filled a little before the frost came on, which put an end to a farther increase." Graham noted only one year in which he was able to grow barley to seed, 1768, which he claims was "favourable beyond common years." Attempts at growing potatoes were more successful; Humphrey Marten, Factor at Albany Fort, reported his success to Graham, who in turn "made a trial of that useful root at Prince of Wale's Fort in Churchill River, and brought them to the bigness of a hen's egg."[315]

Despite frequent failures at gardening, Graham commented: "Parsley, purslane, celery, carrots, parsnips, and several other kinds of seeds are *sown annually but with very little success*."[316] The continued attempts to grow plants that yearly defied even those skilled in husbandry brought to the Bay by the Company suggests something else at work than simply provisioning. As part of Company policy to make the factories self-sufficient, the London Committee, which issued orders to Company employees on the Bay, frequently posted "a variety of seeds and garden implements (and, on at least one occasion, a book of instructions)."[317] Successful agriculture meant that the Company had to spend less money on provisioning English goods to Company men. But developing agriculture and animal husbandry had another significance as well.

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[315] Graham, *Observations on Hudson's Bay,* 135.
[316] Graham, *Observations on Hudson's Bay,* 134. Italics mine.
[317] Graham, *Observations on Hudson's Bay,* 134.

Although the Company had little interest in colonial settlement, they would certainly have been interested in securing the success and health of their employees on the Bay. Agricultural development provided nourishment and cut costs of shipment and supplies, but it also was theorized to ameliorate difficult climates.[318] Beyond that agriculture served as a symbol of man's effort to "perfect the fallen world with his skill and labour."[319] Bringing agriculture to an otherwise barren and seemingly infertile landscape could have endowed it with some of the temperate qualities that were so advantageous for British bodies in England and other parts of the British Empire. However, these efforts were primarily futile. The environment was little improved by the importation of English agriculture; even local indigenous peoples did little farming and cultivation, so there were few native traditions to incorporate, as Europeans had learned to do in the Caribbean and New England from their often reluctant native neighbors.[320]

Animal husbandry was in much the same state, although certainly these efforts were moderately more successful. Most of the HBC forts had horses and cattle or oxen, and these beasts of burden were used likewise for labor and for food, as discussed in chapter 2. Nonetheless, maintaining successful herds was difficult and unlikely, in part because there was not enough fodder to supply animals, and transporting them across the Atlantic was expensive and impractical. There is also little discussion of animal husbandry in HBC documents, although enough to know that attempts were made at

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[318] Richard Drayton, *Nature's Government: Science, Imperial Britain, and the 'Improvement' of the World* (New Haven: Yale University Press, 2000), 92.
[319] Richard Drayton, *Nature's Government*, 50.
[320] John F. Richards, "The Columbian Exchange: West Indies," in *The Unending Frontier, An Environment History of the Early Modern World* (Berkeley: University of California Press, 2003): 309-333.

raising domesticated livestock. In 1762, Ferdinand Jacobs wrote to Moses Norton that he had sent a young bull "to renew your Breed of Cattle."[321] Other difficulties included losing breeding pairs, which prompted Jacobs to send the bull in the first place.[322]

Because traditional efforts towards improving the environment around Hudson Bay with the introduction of European agriculture and animal husbandry largely were unsuccessful throughout the eighteenth century, and did little else but modestly augment the food stores of individual factories, those Europeans living on Hudson Bay had to develop different imperial strategies for survival and success in the northern climates. Rather than improving the environment, Company employees modified themselves, in a way that I argue is more significant and less superficial than simply donning a warmer set of clothes; in fact, the Company men were somewhat aggrieved by the adaptations required of them, and what it implied for human bodies.

James Isham, writing his official report to the Governing Committee of the fur trading company, explained abandoning his dignity and adopting more comfortable dress for the extreme subarctic winter cold. Specifically, he says that "Necessity obliges us to appear in another fashion not unbecoming us in this part of the world."[323] He elaborated that Englishmen, once adorned with a long beaver coat, a double-lined waistcoat, flannel shirt, leather mittens, a beaver cape, and multiple layers of stockings under breeches, just to name a few of these articles, appeared "more like beasts than men."[324] There was little

[321] Ferdinand Jacobs, "Ferdinand Jacobs to Moses Norton, September 15, 1762," M 104 HBCA.
[322] Moses Norton, "Moses Norton to Ferdinand Jacobs, January 4, 1763," M 104 HBCA.
[323] Isham, *Observations*, 117.
[324] Isham, *Observations*, 117.

climate amelioration that the Britons could do in the Far North; they had to change themselves, as opposed to the environment, the latter of which was a practice that had been part of the British imperial strategy since the sixteenth century.[325] Adopting indigenous customs, clothing, etc. may also have precipitated the ultimate success of Samuel Hearne's third overland expedition to the Arctic Ocean in the 1770s. Hearne had attempted the voyage two times prior, outfitted in European style and with European companions; both expeditions had to return to the forts before going very far inland. Hearne's third voyage, outfitted in the style of local native peoples and led by Matonabbee, a Chipewyan guide, reached the Arctic Ocean and returned safely.[326] In other words, Britons could or had to deliberately "degenerate" to cope with the extremity of northern climates or to succeed in Arctic travel.[327]

Underneath this sentiment of degeneration existed a hierarchical structure which defined the relationships between indigenous peoples, hired hands from the Orkney Islands, Scotland and Scandinavia, mixed race employees, and English officers and high ranking officials in the Company. These relationships fell across a spectrum populated by indigenous peoples/animal to Briton/human. This spectrum was paired with ideas about acclimatization to northern climates, and justified both the treatment of and the hiring of certain employees. The British utilized the physiological understanding of bodies and

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[325] Drayton, *Nature's Government*, 108.

[326] Samuel Hearne, *A Journey from Prince of Wale's fort in Hudson's Bay to the Northern Ocean: undertaken by order of the Hudson's Bay Company for the discovery of copper mines, a North West Passage, &c., in the years 1769, 1770, 1771, & 1772* (Dublin: Printed for P. Byrne, and J. Rice, 1796).

[327] The French were more effective at this type of assimilation in part because of a decentralized trade structure in which *voyageurs* had greater independence; because of that, French fur traders posed a massive threat to the English fur trade, especially as they built stronger relationships with the indigenous locals they relied upon for the success of their trade.

climates to reinforce these differences and these relationships. In their view, most suited to the climate were the indigenous Inuit and First Nations peoples who were native to northern locales. Following the logic of climate uniformity, the British considered Orcadian, Scots and Scandinavians to be really desirable employees of the Company; they would have been immune to many of the challenges of northern climates that the British were susceptible to.[328] When Hudson Bay Company ships left England, ships resupplied in the Orkney Islands and HBC personnel hired many men from these locations. With few opportunities for Orcadian men in the Orkney Islands themselves, these Nordic descendants were seen as prime employees for the Company, as they were both northern and European, if not English.[329] Mixed race individuals, those borne to indigenous women by European fathers, were the natural inheritors of on-the-ground Hudson Bay Company operations; they had their white fathers' business acumen and refined qualities, but were also able to translocate easily between indigenous culture and the European world, or at least so the British expected.[330]

Meanwhile, the English residents of the Far North had to adapt to northern life by sliding down the spectrum from the desirable refinedness of their upbringing in temperate Great Britain and adopt the animal qualities of the indigenous peoples. However, these were adopted primarily superficially, unlike in the case of French fur traders, who were

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[328] It is important to note that the British are not particularly clear about what the dangers of living in such a cold climate are; yes, it's cold and the body was at risk for exposure. However, they certainly emphasize the sense of healthfulness of northern climates more than the dangers of it. At the same time, there is that persistent apprehension about living in such an extremely cold climate.

[329] Edith I. Burley. *Servants of the Honourable Company: Work, Discipline, and Conflict in the Hudson's Bay Company, 1770-1870*. (Oxford: Oxford University Press, 1997), 2-3; Houston, Ball and Houston, *Eighteenth-Century Naturalists*, 6-7.

[330] Houston, Ball, and Houston, *Eighteenth-Century Naturalists*, 9-11.

perceived to assimilate to native culture.[331] It was understood that the English would be unlikely to acclimatize as much as the indigenous people who were native to the Far North, in a physiological sense. The physical alterations incurred by cold could be applied to both indigenous persons and to foreigners, but ultimately, bodies were aligned most closely with the place in which they were born. For this reason, even after having lived in the north for many years, non-native Arctic residents did not possess the same strength and hardiness that was attributed to northern people.[332] These physical changes were also associated with white Scandinavians and Russian Europeans.

In part, we can explain this by the difference between northern peoples in the Old World versus northern peoples in the New World. Residents of the New World were seen by many intellectuals in Europe to have degenerated; famously, this predicated the dispute between the Comte du Buffon and Thomas Jefferson.[333] This understanding that Europeans were the "original" form of humanity was upheld by Pierre Louis de Maupertuis; other races, including Amerindians, were degenerated forms.[334] This was partially connected to theories of migration from Asia over Beringia; overtime, the harshness of the climate of the New World made animals smaller and humans more

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[331] Christopher Middleton, "Captain Middleton to Arthur Dobbs, 18 January 1742 (OS)" in William Barr and Glyndwr Williams, eds., *Voyages to Hudson Bay in Search of a Northwest Passage, 1741-1747. Volume 1: The Voyage of Christopher Middleton* 1741-1742 (London: Hakluyt Society, 1994), 262; Carlos and Lewis, "Natives Americans and exchange," 476, 479, 485.

[332] This is why we often see people like Olof Rudbeck and the Comte du Buffon describe northern Europeans races as superior, while non-European northerners from the same latitudes may not have the same superior qualities.

[333] Dugatkin, *Mr. Jefferson and The Giant Moose: Natural History in Early America*; Sainson, "Revolutions in Time: Chateaubriand on the Antiquity of the Earth," *French Forum* 30 (2005), 47-63; Paul B. Wood, "The science of man," in N. Jardine, J.A. Secord, and E.C. Spary, eds., *Cultures of Natural History* (Cambridge: Cambridge University Press, 1996): 197-210, 204-205.

[334] Peter J. Bowler, *Evolution: The History of an Idea, 25th Anniversary Edition* (Berkeley: University of California Press, 2009), 52.

savage, regardless of latitude.[335] This perception existed simultaneously with and overshadowed theories about climate uniformity, which were increasingly seen with skepticism as Europeans encountered more of the New World.[336] However, these ideas did not dissipate completely.

British notions of northern physiology aligned to British assumptions of the behavior of indigenous persons. Because of the decreased sensation caused by adapting to cold, northern climates, not only were northern peoples rendered more peaceable, only stirred to conflict in the direst of circumstances (because they remain largely unaffected by the passions), but they were also less family-oriented, building relationships based upon "esteem" and "respect" as opposed to "love" and compassion.[337] There were negative qualities regarding the changes to the body caused by the cold. A penchant for alcohol and gambling was readily thrust upon northern denizens. Particularly interesting was the belief that northerners drank alcohol not to warm them, but because it provoked in them sensation and sensibility.[338] So while they were better able to hold their liquor so to speak, they were also more likely to drink it and more likely to drink more of it. This association between cold climate residents and alcohol would most definitely come into play regarding northern native peoples with whom the British traded and cohabited,

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[335] Dugatkin, *Mr. Jefferson and The Giant Moose: Natural History in Early America*; Sainson, "Revolutions in Time: Chateaubriand on the Antiquity of the Earth," *French Forum* 30 (2005), 47-63; Hunter, *The Place of Stone,* places Thomas Pennant's work in this context as well, which has bearing here.
[336] Bowler, *Evolution*, 53.
[337] Falconer, *Remarks on the Influence of Climate*, 15
[338] Falconer, *Remarks on the Influence of Climate*, 16.

especially as alcohol could provoke the senses to something close to savagery without the tempering force of civility.

Indigenous peoples, in particular, were incriminated by British associations between the physical alterations caused by cold and British assumptions about indigenous peoples' behaviors and attitudes. Gambling, alcoholism, and what were believed to be stout constitutions could be explained in two ways. The first was through living in a cold climate, and the second, and closely related, was the relationship between coldness and savagery as a way of life. Both of these ideas are strongly present in Hudson's Bay Company letters, and when contrasted with eighteenth-century medical commentaries on northern climates, illustrate a more comprehensive image of the links between climate and British policies and attitudes towards Native American and Inuit peoples living in Prince Rupert's Land.

British residents believed that indigenous peoples in the north were far hardier and better suited to living in northern conditions. This hardiness equipped indigenous peoples with the know-how to survive in the north in the worst conditions, which was, on the one hand, ideal for Britons who could benefit from their experience and expertise in northern living, but on the other, allowed Britons to dismiss the many needs of indigenous peoples when they were dependent on Britons, who had disrupted traditional subsistence practices. James Isham wrote in his *Observations on the Hudson's Bay* that "[Indians] are Very cold Living in the winter…itt's unknown what hardship's, men must Endure in these parts, to see Isceles of Ice & frozt, hanging over mens heads as they Lye in bed,—from the mouth to the top of the tent will hang Ice in a great Quantity, in one

nights time, occation'd by their breath, and their Blanketts are so thick of frozt itt takes them one hour Every morning to thaw and Dry Such."[339] These observations did little to raise the concern and consideration of Britons beyond wonder and even amusement.

British apathy towards indigenous peoples can be explained by beliefs, supported by medical theories, that indigenous bodies were more durable than European bodies, especially in Arctic conditions. Isham wrote that "The Natives in these parts are of an incrediable [sic] strong constitution both men and women,—I have Known some that has had Legs mortified when gone away from the fort, to go in Land, when the Surgeon has been of that opinion that he has been past Recovery, and Next year has come Downe perfectly well."[340] Isham remarks that "Their Robust nature and Strong Constitution is Very surprising;" I argue, however, that Isham was not so much surprised that they possessed such strong constitutions, but the degree of their robustness was to be remarked upon as impressive.[341] He writes of self-surgery and the cure-all remedies that Native peoples produced from water and turpentine, sometimes mixing in bear grease or other animal fats. When they fall ill, Isham explains, they require no other remedy but "Sweeting [sic] itt off."[342] This conviction about the durability of indigenous bodies in the far north was commonly held belief. Isham perpetuated these notions and later Hudson's Bay officials, like Andrew Graham and Samuel Hearne, continued to accept these basic ideas.

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[339] Isham, *Observations*, 90
[340] Isham, *Observations*, 96
[341] Isham, *Observations*, 105.
[342] Isham, *Observations*, 96.

These descriptions, however, did not mean that European observers believed indigenous peoples to be immune to disease or immortal. They did profess that indigenous peoples' fair health could be attributed to their animalistic qualities, but their animalistic qualities also led to them to respond to disease, illness, and injury differently from Europeans, whose sensitivity to non-temperate climates and theoretical greater capacity for intelligence made them react more passionately. It was believed that both cold climates, which had a numbing quality, and indigenous peoples' closeness to animal nature made a First Nations or Inuk person uninterested in their own well-being. For instance, Isham described the behavior of an ailing Amerindian man: "he hangs down his head, says little, and appears in a state of stupid insensibility, fully manifesting, to a European, a kind of indifferency whether he recovers or not."[343] This was attributed by Europeans to their perception of indigenous peoples' lack of religious faith—they were "unenlightened Americans" who had no "uneasiness" at the prospect of death, which Christians would die more virtuously "after a life well spent."[344] In other words, the heathenism of indigenous peoples, paired with their animality and the effects of the cold, led indigenous peoples not to care whether they lived or died when ill. This would be a convenient background belief for Europeans, whose attitudes and actions certainly contributed to the death of many indigenous peoples, in the north and elsewhere.

The primary assumptions behind these beliefs was that indigenous peoples were closer to nature, not just in the North, but all over the British Empire. Isham explained of

[343] Graham, *Observations*, 180.
[344] Graham, *Observations*, 180.

the Amerindians he encountered that "Nature is Very favourable to them."[345] When compared with similar rhetoric by other authors, it becomes clear that part of the perception of indigenous peoples as durable in extreme climates came from what the British saw as their animalistic nature. We can see this perception of indigenous peoples' closeness to nature being rationalized throughout the eighteenth century, as early notions of anthropology developed at the sites of colonial encounters. Races of people became stratified on a scale similar to the Great Chain of Being. Northern races of indigenous peoples, like Native Americans and Africans, were seen as being part of digression away from the superiority of Europeans, more animal like, and therefore better able to withstand "intolerable" conditions.[346]

Conclusion

The British experience of life in the North was shaped by understandings of the physiology of the body and the influence of climate and of cold upon it. We see both medico-geographical understandings of the body encompassed in ideas about climate uniformity, like those perpetuated by the Baron de Montesquieu and English physician, William Falconer, but also eclectic interpretations of the cold that were applicable to bodies regardless of latitude, like that of Christopher Middleton. These different understandings influenced the way that the British approached not only activities like agriculture, farming, and dress, but also their treatment and relationships with indigenous

[345] Isham, 96.
[346] Bowler*, Evolution*, 52.

peoples and non-Britons with whom they shared space and resources. Imperial operations in the north, along with justifications for those imperial operations, were bound up in intellectual rationalizations of climate and physiology.

In context, we see how these ideas were influenced by contemporaneous trends in natural philosophy and natural history, including the rise of biogeography, climatic determinism, and the origins of race, but also of matter and fiber theory, demonstrating how the Far North was rationalized and examined as critically as other spaces in the British Empire, like the tropics. We can see attestations of healthfulness that run counter to the reality of life in the North, and making sense of these seemingly contradictory attitudes shows us how life in the north was defined strongly by imperial politics and mentalities. Ultimately, Britons co-opted these ideas to justify and explain their existence in the Far North, not only making this colonial landscape intelligible through European science and medicine, but by using these ideas to put themselves in positions of power in otherwise unfamiliar and challenging climates.

Chapter 4: Thomas Pennant, *Arctic Zoology* and Writing English Natural Histories of the North

Introduction: The Arctic from Setting to Subject

Reflecting on his "literary life" in 1791, the Welsh gentleman-naturalist, Thomas Pennant, residing at his estate in Flintshire in northern Wales, described his earlier travels to Scotland, in which he compared certain characteristics of northern Britain with the much farther north. Pennant wrote, in a much remarked upon comment by other scholars, "I had the hardiness to venture on a journey to the remotest part of North Britain, a country almost as little known to its southern brethren as Kamtschatka."[347] Pennant's comment was a loaded one. Not only was it predicated on the political and cultural divisions embedded in Scottish-English history, it also revealed that English natural historians knew little about what they considered to be a barbaric Scottish climate. Despite never having traveled farther than France, Pennant had resolved to embark on a natural historical quest as powerful—as exotic—as those global ventures accomplished by his friends Joseph Banks, Daniel Solander, and Johann Reinhold Forster; and the "North" required the most "hardiness" of all. Finally, Pennant equated northern Scottish landscapes with that of the far northern Kamtschatkan Peninsula in eastern Russia, revealing his assumptions about the synonymous characteristics between northern landscapes. These characteristics were certainly amplified by Thomas Pennant in his work, which when considered altogether, walked a fine but troubled line about the

[347] Thomas Pennant, *The Literary Life of the Late Thomas Pennant* (London, Sold by Benjamin and John White, Fleet-Street, and Robert Faulder, New Bond Street, 1793). Several authors discuss this comment in the edited volume, Mary-Ann Constantine and Nigel Leask, eds., *Enlightenment Travel and British Identities: Thomas Pennant's Tours of Scotland and Wales* (London: Anthem Press, 2017).

distinction between local and global understandings of nature and citizenship both in the British Empire and in God's natural kingdom.

Although not as celebrated in his own time as naturalist Joseph Banks, Pennant's work did hold a place of importance in British intellectual spheres. Several of his works were reprinted. His first success, *British Zoology*, published first in 1766, saw four editions by 1776. *Arctic Zoology*, first published in 1784, and considered by his friend and collaborator, John Aiken to be "his favorite piece" of Pennant's, was given a supplement in 1787 and a second edition in 1792. [348] Not only did Pennant contribute significant and highly praised works to English natural historical scholarship, but Pennant's characterization of the northlands would shape British imperial aspirations and policies in Arctic North America. Of all English natural historians, Pennant uniquely made "the Arctic" British.

Pennant had previously written more locally focused natural histories, but *Arctic Zoology*, which read like a natural historical travelogue, presented his global vision of what he called the "Arctic World." For Pennant, the "Arctic World" was a contiguous zone both above and below the Arctic Circle. Generally, Pennant, explored the regions of the world around 60 degrees' latitude. Beginning with northern Great Britain, particularly the Shetland and Orkney Islands, interesting because of their Scandinavian heritage and reputation for providing the Hudson's Bay Company with its most stalwart agents,

[348] John Aiken, "Letter from J. Aiken to T. Pennant, Aug. 10th 1788," National Maritime Museum, London. P/16/11/20. The popularity and success of Thomas Pennant's *Arctic Zoology* is discussed in Douglas Hunter's *The Place of Stone: Dighton Rock and the Erasure of America's Indigenous Past* (Chapel Hill: University of North Carolina Press, 2017), 73-75.

Pennant's "imaginary tour" around the Arctic proceeded through Northern Europe and Siberia, across the most northern reaches of North America and the Hudson Bay region before returning to Great Britain via Greenland and Iceland.[349] Unlike the twenty-first century definition of the Arctic Circle as a line beyond which trees do not grow and which is characterized by a permanent layer of frozen ice in the soil, Pennant's comprehension of both *what* and *where* were the Arctic extended into sub-Arctic regions and even the British Isles (not strictly Arctic by today's standard).[350] But for Pennant and his contemporaries, "the Arctic" was an undefined space, ripe for characterization. It is this process of characterizing "the Arctic" as a properly *British* space that was Pennant's natural historical project.

Benefitting from a wide and carefully cultivated network of naturalists, intellectuals, and employees of the Hudson's Bay Company, Pennant was able to, for the first time, depict the Arctic as not just a *place* for the study of natural philosophical ideas or the extraction of material resources, but as a place that was specifically the *subject* of natural historical study and integrated geographically with the rest of the British Empire. As a subject, the Arctic came to represent the imbrication of imperial attitudes and natural theology with natural history in the British conceptualization of nature in the eighteenth century. The confluence of ideas about empire, natural theology, and natural history in Pennant's description of the Arctic help to explain the seemingly contradictory

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[349] Pennant, *The Literary Life of the Late Thomas Pennant,* 40.

[350] The Arctic today characterizes the earth north of the Arctic Circle at 68 degrees north. It is characterized by vegetation, soil conditions/permafrost, the length of daylight and nighttime hours in the summer and winter, and other ecological qualities. For further comments on how I am describing the north and the "Arctic" please see the introduction to this dissertation.

depictions of the Far North present in early modern British understandings, such as the puzzling descriptions of the Arctic as simultaneously "uninhabitable" and yet "inhabited." Pennant's epistemological methodology towards shaping northern nature along these lines reveals his piecemeal assembly of the natural world.

Pennant's methods raise questions about eighteenth-century natural historians' *epistemic cultures* – how they created and warranted authoritative knowledge.[351] Pennant conceptualized nature in far flung places via a combination of both real exploration and exploration via "imagination." Having travelled in only a limited fashion in his lifetime, Pennant proves to be an interesting counterpoint to itinerant naturalists like Joseph Banks, who have led historians to characterize eighteenth-century English natural history by its connection with large-scale exploration and the Age of Discovery (especially in the global South).[352] Pennant's grand voyages often took him no farther than his own study.[353] On the contrary, Pennant employed imagination to envisage far-away nature, relying on first-hand accounts of faraway places and "imaginary tours" to those locations. Pennant's epistemic method, as outlined in *Arctic Zoology*, aimed to take its readers on a "philosophical circuit of the globe" by synthesizing the natural histories of other naturalists and explorers into a single volume of authoritative knowledge.[354] Imagination

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[351] Karin Knorr-Cetina, "Culture in Global Knowledge Societies: Knowledge Cultures and Epistemic Cultures," *Interdisciplinary Science Reviews* 32, 4 (2007): 361-375.

[352] For instance, the literature on James Cook's expeditions, the inquiries into Linnaeus students, etc. have been positioned as precursor episodes important to the history of, say, Charles Darwin.

[353] Constantine and Leask, "Introduction: Thomas Pennant, Curious Traveller," in Mary-Ann Constantine and Nigel Leask eds., *Enlightenment Travel and British Identities: Thomas Pennant's Tours of Scotland and Wales* (London: Anthem Press, 2017): 1-14, 5-6. Constantine and Leask emphasize the way that Pennant linked exotic voyages like Banks' and travel to less-visited parts of Britain.

[354] Thomas Pennant, *Supplement to Arctic Zoology*, 2.

was a key element to Pennant's interpretation of both the Arctic and other faraway places in the British Empire, and he was not unique in using it to explore the world. Historical geographer Paul Richards describes Immanuel Kant's approach to physical geography as invoking "spatial imagination."[355] Importantly, vitalist natural historians like Georges-Louis Leclerc, the comte du Buffon, also relied upon imagination to forge links between places and species.[356] In so doing, Pennant positioned these distant places as part of the British imperial world.[357]

Arctic Zoology was the testing ground for Pennant's natural historical method of imagining northern lands, and from it grew a much larger, globally-scaled project for Pennant. Compounded by Pennant's increasing age and the success of *Arctic Zoology*, Pennant drafted what some of his friends considered to be his "Opus Magnum:" a 23-volume set of natural histories spanning the entirety of British imperial holdings around the globe.[358] This included discussion of every continent, with the exception of Australia, only recently claimed by the British in 1770, and South America. Called *Outlines of the Globe*, these volumes encompassed Pennant's intellectual network and expanded on his vision of British imperial natural history. In the context of the creation and publication of

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[355] Paul Richards, "Kant's Geography and Mental Maps*," Transactions of the Royal Institute of British Geographers* 61 (1974): 1-16, 6; David N. Livingstone, *The Geographical Tradition: Episodes in the History of a Contested Enterprise* (Blackwell: New York, 1992), 113-117.

[356] Peter Hans Reill, *Vitalizing Nature in the Enlightenment* (Berkeley: University of California Press, 2005).

[357] Ryan Tucker Jones, *Empire of Extinction: Russians and the North Pacific's Strange Beasts of the Sea, 1741-1867* (Oxford: Oxford University Press, 2014).

[358] John Aiken, "Letter from J. Aiken to T. Pennant, Aug. 10th 1788," National Maritime Museum, London. P/16/11/20. The popularity and success of Thomas Pennant's *Arctic Zoology* is discussed in Douglas Hunter's *The Place of Stone: Dighton Rock and the Erasure of America's Indigenous Past* (Chapel Hill: University of North Carolina Press, 2017), 73-75.

Outlines of the Globe, *Arctic Zoology* represents the refinement of Pennant's intellectual ideas linking natural history and empire, an intellectual link he would further explore in *Outlines*. Pennant's use of imagination as a legitimate mode for conceptualizing the Arctic, when situated in the context of early modern ideas about what constituted "imagination," contributes another layer to what historians have characterized as the largely observational and comparative methodology of eighteenth-century British natural history.[359]

This chapter will first trace the development of Pennant's approach to natural history, which entangled citizenship and nature and also required imagination to constitute faraway lands, beginning with *British Zoology* and *Indian Zoology*. With *Arctic Zoology* and then *Outlines of the Globe*, Pennant's natural historical approach had crystallized. In examining Pennant's natural historical approach, we can outline the ways that Pennant's Arctic was constructed, via natural historical study, into a sovereign British space. Pennant's work, symbolizing a shift in the way that Arctic was now a *subject* for study, rather than just a *setting* for study, aimed to benefit the British Empire by laying claim to northern spaces through natural historical categorization and linkages. This chapter will work to establish the Far North as a crucial place to understand both the politics of and epistemology of natural history for Thomas Pennant and his contemporaries, in particular blurring the distinction between local and global natural

[359] For more on the observational practices and comparative methodologies of eighteenth-century naturalists, please see David Elliston Allen, "Natural history in Britain in the eighteenth century," *Archives of Natural History* 20 (1993): 333-347; James L. Larson, *Interpreting Nature: The Science of Living Form from Linnaeus to Kant* (Baltimore: Johns Hopkins University Press, 1994); Susan Scott Parrish, *American Curiosity: Cultures of Natural History in the Colonial British Atlantic World* (Chapel Hill: University of North Carolina Press, 2006).

histories and their relationship to the British Empire. Through Pennant, we can see that ideas about the Arctic were by necessity heavily constructed, a braided composition of British imaginaries of the Arctic, first-hand descriptions of the North, and an imperial natural theology that would reveal all "changes in the face of the globe."[360]

The Path to the Arctic, 1769-1784

To understand the significance of Thomas Pennant to the eighteenth-century understanding of the Far North, we must situate both the Arctic in Pennant's personal intellectual landscape and also Pennant within the intellectual context of the period. Thus, Pennant's path to the Arctic, *Arctic Zoology*, and his approach to natural history requires an analysis of his major works. By the end of his life, Pennant's epistemology of natural history had been fully developed over a thirty-year career. Pennant's focus on natural history migrated from natural histories of British counties that bore resemblance to travel literature to what can almost be thought of as 'a globe in a book:' the comprehensive account of nearly the entire British Empire, the posthumously published *Outlines of the Globe*.[361] By the end of his intellectual career, Pennant's use of imagination to understand the natural history of a place allowed the mind to be itinerant while the body was anchored in place; it required one to mentally picture the geographical linkages between places and interpret the analogous nature between them.

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[360] Thomas Pennant, *Arctic Zoology* (London: Printed by H. Hughs, 1784), I.
[361] Constantine and Leask, "Introduction: Thomas Pennant, Curious Traveller," 2.

Thomas Pennant was a member of the landed gentry, born in Northern Wales in 1726.[362] He inherited his father's holdings at Downing Hall in Flintshire and was professed to be a good landlord by his tenants.[363] This hospitality and generosity extended to his friends: his estate often served as something of a hostel for other naturalists, such as Johann Reinhold Forster and Joseph Banks, who both visited Pennant in the 1760s and 1770s, often for extended trips. [364] Self-proclaimed to have had an interest in natural history from a young age, Pennant idealized the model of John Ray, England's foremost naturalist of the seventeenth century. Having read Francis Willughby's *Ornithology* as a young boy, Pennant envisioned himself as contributing a particularly English form of natural history in the vein of Ray and Willughby.[365] Pennant, though friendly with both Linnaeus and Buffon, saw himself as producing a natural historical classification system that was more akin to Ray's system than to that of Linnaeus or Buffon.[366] Pennant made his intentions known with the 1766 publication of *British Zoology*, which made him famous in the natural history community.[367]

British Zoology emblematizes a characteristic aspect of Pennant's motives for studying natural history: the integral nature of citizenship to one's nation, or in the case

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[362] Constantine and Leask, "Introduction," 1.
[363] Constnatine and Leask, "Introduction," 1.
[364] R. Paul Evans,'A Round Jump from Ornithology to Antiquity': The Development of Thomas Pennant's Tours," in Mary-Ann Constantine and Nigel Leask, eds., *Enlightenment Travel and British Identities Thomas Pennant's Tours of Scotland and Wales* (London: Anthem Press, 2017): 19.
[365] Pennant, *Literary Life*, 1; Pennant, *Arctic Zoology*, i.
[366] Pennant, *Arctic Zoology*, i. I would argue when pressed that Pennant's philosophical underpinnings are more in line with Buffon's vitalism than with Linnaeus's more mechanistic view of nature.
[367] Elizabeth Edwards, "'A Galaxy of the Blended Lights': The Reception of Thomas Pennant" in Mary-Ann Constantine and Nigel Leask, eds., *Enlightenment Travel and British Identities: Thomas Pennant's Tours of Scotland and Wales* (London: Anthem Press, 2017): 140-159, 142.

of Great Britain, one's empire, and the production of natural historical knowledge. For Pennant, this was a primary function of natural historical writing. Natural history illustrated, and in some ways, bounded empire. Natural historical investigation identified utilitarian natural resources, and natural historical specimens, whether materially functional or not, were also resources for aesthetic or scientific reasons and simply for being part of British nature. For Pennant, as for other natural historians, this was a process of inventorying "sources of national pride."[368] Pennant's goal in *British Zoology,* for example*,* was to create an urgency and provide a rationale for the study of domestic nature:

> The pens of several illustrious foreigners have been employed in enumerating the productions of their respective countries, we are unwilling that our own island should remain insensible to its particular advantages; we are desirous of diverting the astonishment of our countrymen at the gifts of nature bestowed on other kingdoms, to a contemplation of those with which…she has enriched our own.[369]

Pennant believed that natural history should produce the most useful knowledge, which was that "of those objects with which we are most intimately connected."[370]

Compared to his later natural historical method, Pennant's early perspective on the proximity of connection to regional nature provides an interesting tension for the historian seeking to understand how he conceptualized "local" and "global" knowledge. Pennant's natural historical ambitions took him farther and farther from Great Britain in the later years of his life (explorations that were purely in the mental realm, as Pennant

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[368] Ryan Tucker Jones, *Empire of Extinction: Russians and the North Pacific's Strange Beasts of the Sea, 1741-1867* (Oxford: Oxford University Press, 2014), 174.
[369] Thomas Pennant, *British Zoology* (London: Printed for Benjamin White, at Horace's Head, Fleet-Street. MDCCLXVIII [1768]), i.
[370] Pennant, *British Zoology*, ii.

himself had never visited these places). This later epistemic method would seem to be a departure from his reliance on local material culture for *British Zoology*. However, as I argue, this was not the case; Pennant linked local material knowledge with more imaginative knowledge farther afield. Pennant's natural historical work eventually encompassed not just the British Isles, the heart of the empire, but eventually the entire empire itself, allowing for Pennant to consider British natural history to span far flung places—and claim them as important subjects for its scrutiny.

British Zoology, in its "local" scope, can be compared to Pennant's *Tours in Scotland* and *Tours in Wales* which were largely read as travel literature.[371] On the coattails of his friends', Daniel Solander and Joseph Banks, global travels, Pennant planned what were actually considered, at the time, almost equally exotic travels to the remote corners of the British Isles. According to R. Paul Evans, in the recently published *Enlightenment Travel and British Identities* (2017), Pennant provided a more positive portrayal of Scotland, which had been, in part due to the Jacobite Rebellions, seen largely as a "wild, inhospitable region."[372] Scotland was certainly not the last place to be treated by Pennant in a more generous fashion than previous authors, as the Far North would receive the same gentle attention. Pennant, it seemed, could examine both the desirable and undesirable qualities of place without being overwhelmed by one or the other. Certainly, he viewed the Far North as quite miserable in the sense of bodily comfort, but

[371] Evans, 'A Round Jump from Ornithology to Antiquity,' 15-37, 19. This is the only secondary scholarship, heretofore, that has been published which is wholly devoted to Thomas Pennant. While Pennant has been the focus of chapters in other texts, his life and works, while important to the history of science, have been largely overlooked.

[372] Evans, 'A Round Jump from Ornithology to Antiquity,' 15-37, 19.

he also noted its pleasanter attributes. Helen McCormack describes Pennant's ability to ameliorate the harshness of nature with a certain humble perspective: "the author combines zoology with topography to describe a curious landscape of wild but 'innocent' creatures."[373] Pennant's strategy rendered the North a polyvalent place that could both challenge and reify the masculine "hardiness" of British visitors, while its characteristics could provide a truly 'natural' vision of God's creation.

Pennant's natural historical and antiquarian works were directly linked to his personal identity as a citizen of the British Empire. Borrowing the term from Ryan Tucker Jones in his *Empire of Extinction*, which focused largely on Russian experiences in northern North America, Thomas Pennant was an "imperial naturalist." Imperial natural history, according to Jones, emerged in the latter half of the eighteenth century, as the gaze of natural history shifted to examine nature within political boundaries, a practice that was meant to have particular utility for the sponsoring government.[374] Pennant sought both to expand those imperial boundaries after Britain's loss during the American Revolution, and also to assuage British malcontent over its loss by focusing on a new imperial space.

In regard to being an imperial naturalist, Pennant's explicitly stated linkages between natural history and "national" identity were not unique to continental or English natural history. Pennant's network of correspondents, including Carolus Linnaeus,

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[373] Helen McCormack, "Pennant, Hunter, Stubbs and the Pursuit of Nature," in Mary-Ann Constantine and Nigel Leask, eds, *Enlightenment Travel and British Identities: Thomas Pennant's Tours of Scotland and Wales* (London: Anthem Press, 2017): 203-222, 215.
[374] Jones, *Empire of Extinction,* 173, 174.

Buffon, and Gilbert White, also had views of nature that were tied to their national identities.[375] Pennant was particularly close to Linnaeus and White, whose local connections to their homelands largely influenced their natural historical work. White's influential studies of nature carried him no further than his local village, Selborne; Linnaeus's taxonomic system was used to carry out not only his, but his students' commitment to cameralism. Pennant's work as an imperial naturalist took him, intellectually, much farther away. While Pennant was not apparently a cameralist, he did, in his writings, espouse the importance of natural history to imperial claims.

A strong unionist, Pennant's politics inclined him towards the unification of Wales, Scotland, and Ireland into a unified Great Britain, guided by English politicians and English priorities.[376] This political identity positioned him to embrace a certain Englishness, while also revealing his attitude of superiority towards his Welsh tenants. However, Pennant's unionist political values certainly supported his natural historical agenda, which was, arguably, a grand scheme to classify all plants and animals in British-held territory.[377] Pennant was eager to study and classify as much of British nature as he possibly could. Additionally, his study of plants and animals in the British Isles clarified for Pennant the quintessential similarity between species living there and in other parts of the northern hemisphere, a perspective that contributed a certain British quality to

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[375] For discussion on Linnaeus's connection to his nationhood, see Lisbet Koerner, *Linnaeus: Nature and Nation* (Cambridge, Harvard University Press, 2001). Ryan Tucker Jones also examines this briefly in *Empire of Extinction*, chapter 5: "Ordering Arctic Nature, Peter Simon Pallas, Thomas Pennant, and Imperial Nature History."

[376] Mary-Ann Constantine, "Heart of Darkness: Thomas Pennant and Roman Britain" in Constantine Mary-Ann Constantine and Nigel Leask, eds*., Enlightenment Travel and British Identities: Thomas Pennant's Tours of Scotland and Wales* (London: Anthem Press, 2017): 65-83, 66.

[377] Jones, *Empire of Extinction*, 174.

'nature' in the northlands. Because of his desire to see British natural history flourish, he was one of the first naturalists to consider Great Britain worthy of the same kind of devoted natural history exploration as those mounted by Joseph Banks, for instance, in far off parts of the globe. This motivated Pennant's journeys to Scotland and Wales, part of his combined political and scientific agenda of unification, and the publication of his travel journals, not just as travel literature, but as natural histories as well.[378]

When examining the development of Pennant's *Outlines*, the first explicit effort towards this project that Pennant put forth was his *Indian Zoology*, begun in 1769 and not published until 1781 by Johann Reinhold Forster in Halle, Germany. *Indian Zoology,* as its title suggests, listed the species of Britain's new colony in south Asia. However, for whatever reason, *Indian Zoology* did not seem to hold Pennant's attention for long. After a first edition, Pennant dispatched the majority of the project to his friends, who added to it significantly. The second edition, published in 1791, while printed with Pennant's permission, was largely supervised by Dr. John Aikin (who translated the first edition from Latin into English) and Johann Reinhold Forster (who had assembled the first edition and written the "Essay on India"), and by the publishers themselves.

Pennant did, however, write the advertisement for the second edition. He indicated in his reflection that *Indian Zoology* was a "fragment."[379] While not specifying what *Indian Zoology* was a fragment of, it is not hard to guess, as the content of *Indian*

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[378] Mary-Ann Constantine and Nigel Leask, "Introduction: Thomas Pennant, Curious Traveller," in *Enlightenment Travel and British Identities: Thomas Pennant's Tours of Scotland and Wales* (London: Anthem Press, 2017), 1-14: 2.

[379]Thomas Pennant, *Indian Zoology* (London: Printed by Henry Hughs, for Robert Faulder, 1791), i.

Zoology would be replicated, as would be *Arctic Zoology*, in his *Outlines of the Globe*. From this comment, and in its being the first of his more far-flung descriptions of zoology, this was likely the first piece written with the eventual *magnum opus*, *Outlines,* in mind. Despite this assumption, however, there is little to indicate within the body of the work itself that *Indian Zoology* was to be anything more than a standalone piece. The work was an index of animals from Southeast Asia and where descriptions could be found in other books. Pennant did describe a number of new species, and situated those species within a classification system for other naturalists. *Indian Zoology* did not possess the global scale of Pennant's *Arctic Zoology*, nor did it include any indication of Pennant's approach to natural historical exploration and "imaginary touring."

The penultimate step in Pennant's trajectory to *Arctic Zoology* is a book that was never published—in fact, never completed, nor do any pieces of its original form exist. Pennant was frustrated in his attempts for his next publication by the American Revolution, "the most deplorable event in all the annals of Great Britain."[380] The loss of the American colonies required Pennant to reevaluate the publication of a book he would have entitled *The Zoology of North America*. As a naturalist for whom nature and citizenship corresponded to one another, the British loss during the American Revolution disqualified him from writing a natural history of much of the North American continent. It no longer fit with his imperial project, or with his principle that natural historical work was a duty of citizenship. He wrote, "I thought I had a right to the attempt, at a time I had the honor of calling myself a fellow-subject…I could no longer support my clame [*sic*] of

[380] Thomas Pennant, *Arctic Zoology*, xi.

entitling myself its humble Zoologist."[381] He had lost "his little share in the boast of ruling over half of the New World."[382] In losing much of North America as a legitimate subject for natural historical study, Pennant looked to other territories to satisfy his imperial vision of natural history.

In shifting his gaze to the Arctic while feeling intellectually rebuked by American independence, it is interesting that he would find the Arctic to be a suitable alternative for his attentions. While Ryan Tucker Jones considers Pennant's work to be a product of the frustrations of the dissolution of empire, I propose that Pennant cast his gaze more northwards as a way to *extend* the boundaries of the British Empire.[383] Pennant's choice in the Arctic as the locus of his new natural history suggests he considered Great Britain to have a claim on the Arctic, or at least parts of it, which is supported by the long-standing historical relationship between the Far North and Great Britain from the 1500s onwards, a relationship with which Pennant was by no means unfamiliar. Focusing on the Arctic instead of North America was not simply a way of salvaging the work he had thus far accomplished towards his goal, though he does admit he was "unwilling to fling away all [his] labors."[384] Though no longer a "fellow-subject" of British North America, Pennant had forged links with northern European naturalists predating the loss of the American Revolution by at least two decades. This suggested that he was already an intellectual citizen of the north through correspondences with Scandinavian and Russian-

[381] Pennant, *Arctic Zoology*, 3-4.
[382] Pennant, *Arctic Zoology*, 4.
[383] Jones, *Empire of Extinction*, 170.
[384] Pennant, *Arctic Zoology,* 4.

based naturalists and as a member of their philosophical organizations. Pennant, having "enlarged the work by the addition of the animals and history of the northern parts of Europe and Asia," could rationalize his lost claim on much of North America and still position North America as a central feature of *Arctic Zoology.*[385]

From the "Arctic World" to 'Outlines of the Globe,' 1784-1796

With his 1784 published work, *Arctic Zoology*, Pennant earnestly began his exploration into a comprehensive, geographical approach to natural history, which he called "philosophical circuit[s] of the globe."[386] This approach to natural history was a methodology that intertwined Aristotelian precedents for the study of physical geography, eighteenth-century travel literature, and notions of "imagination" contemporary with Pennant.[387] The Arctic, while not Pennant's first choice of subjects, was by necessity a place readers had to explore "philosophically," or through their imaginations, as the Far North was highly inaccessible to the average Briton or European, priming it for a natural historical exploration such as Pennant's.

The "Arctic World" was really as foreign to Pennant as it was to his readers; Pennant had never been to most of these places. In order to know the "Arctic World," he synthesized the observations and descriptions of other naturalists, British subjects in the New World, and even incorporated into his natural history ancient stories about northern

[385] Pennant, *Arctic Zoology,* 4.
[386] Pennant, *Supplement to Arctic Zoology*, 24.
[387] These notions of imagination are also a part of the emerging vitalist tradition of viewing nature. For more on this, see Peter Hans Reill's *Vitalizing the Enlightenment,* and particular his chapter on Buffon.

lands. This was a reflection of Pennant's antiquarian interests, but also of the all-encompassing scope of natural history in the eighteenth century. In this regard, readers approached Pennant's work as they approached travel literature, including his previously written natural histories of Scotland and Wales: they read the natural historical details, but packaged in such a way as to seem as though they were taking a journey.

Arctic Zoology was meant to be both informative and amusing for his audience; but when we evaluate the philosophy that undergirded his scholarship, we can see that *Arctic Zoology* worked to connect otherwise disparate, particular landscapes into a uniform, biogeographical circuit of the earth that allowed Pennant to make more generalized comments about the "Arctic World." Beginning in the far northern parts of Great Britain, the reader of Pennant's *Arctic Zoology* travels across the North Sea to Scandinavia, across the rugged Siberian tundra to Kamchatka, past the Bering Strait to the Aleutian Islands, to New Albion, or the western coast of North America as far south as California, then journeys northward through the boreal forests and tundra of the Canadian Archipelago to the Arctic Ocean, to Greenland, Iceland, and back to Britain. He describes, through this "imaginary tour," the geography and geology, plants and animals, peoples and cultures of each of these locations, weaving together a narrative of connectedness and building his cohesive "Arctic World" such that individual places became part of a larger, global, geographical space and reflected almost in its entirety the intellectual network from which Thomas Pennant benefitted and actively curated. From the perspective of a natural historian, Pennant considered these "philosophical circuits" to be advantageous for understanding the distribution of plants and animal species in any

geographical region, as a comprehensive examination revealed "the demands of the inhabitants of the respective climates."[388]

In examining *Arctic Zoology* and Pennant's epistemological approach to it, we can view how Pennant constructed the "Arctic World." The "Arctic World" can be thought of as constructed in three ways. The first is that Pennant pieced together a closed circuit by geographically linking disparate locations that he included in his "Arctic World." Pennant, like other naturalists, used comparative analysis to justify these linkages, pointing out the analogous natures from place to place. As mentioned prior, he correlated Scotland with eastern Russia. He also connected Scotland with Scandinavia, pointing out, "There is a great analogy between the plants of these northern Alps, and those of the Scottish Highlands."[389] His criteria for this "great analogy" was the shared "two hundred and ninety-one [plants]" between Scotland and Northern Scandinavia out "of the three hundred and seventy-nine perfect plants which grow in Lapland."[390]

The second of the ways Pennant constructed the "Arctic World" is the chimeric way in which he pieced together the natural history of the north by using the accounts and descriptions of correspondences in his wide circle of intellectual acquaintances.[391] Pennant ranked his epistemology of natural history a step below first-hand experience examining specimens *in situ*. He described his approach as "less perfect" in comparison to "an actual inspection in the native country of the several subjects under

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[388] Pennant, *Supplement to Arctic Zoology*, 24. This evokes a natural theological popular at the time, as seen in other natural historical works, like Linnaeus's "Police of Nature," which was translated into English in 1781.
[389] Pennant, *Arctic Zoology*, LXXIV.
[390] Pennant*, Arctic Zoology*, LXXIV.
[391] Jones*, Empire of Extinction,* 170.

consideration."[392] The content of *Arctic Zoology* is primarily mined from other works and pulled from letters from his many acquaintances rather than personal observations. Pennant, who had an intricate intellectual network who provided him with a large number of specimens for observation, compounded these examinations using "imagination," which compensated, to some degree, for not travelling in person to locations that would have offered him a more direct, first-hand experience with specimens themselves.

The content of the book is a mosaic, a piecing together of information that coalesced as a whole. The introductory portion of the book is divided into many subheadings that identify the region of interest, more closely resembling a travel guide than a natural history—and this was indeed Pennant's intention. In fact, with *Outlines*, this travel guide concept had fully evolved into a table of contents that Pennant referred to as an "Itinerary."[393] The goal was to guide the reader through these lands in what Pennant called an "imaginary tour." But the manifestation of this layout also represents Pennant's thought process, as he had to imagine the natural historical connections between these places as well, bolstered though they were by trusted accounts and descriptions. The "Arctic World" was a piecemeal aggregation of Pennant's correspondents' experiences of northern lands.

This approach, in particular, was not unprecedented. Pennant's "circuits" evokes an Aristotelian approach to the study of physical geography that was "defined by its all-encompassing scope rather than its medium of representation;" called *periodos ges*, this

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[392] Pennant, *Arctic Zoology*, iii.
[393] Thomas Pennant, "Arctic Regions," *Outlines of the Globe*, undated. P/16/25, National Maritime Museum, Greenwich, London, United Kingdom.

way of describing geographic regions or even creating maps referred to a depiction of "the earth's perimeter."[394] Strabo, in his geographies, refers directly to "circuits of the earth."[395] We can see this classical way of thinking embedded into Pennant's approach when he writes, "The outline of the terrestrial globe should be traced; the several approximations between part and part should be attended to."[396] Creating these circuits required assembling a mosaic, taking snapshots of disparate nature and piecing them together, until you could see the picture entirely as a whole. It was not particularly new for Pennant to be doing this, but it certainly evoked a scale of nature that was edging on Humboldtian and which his contemporaries, like Peter Simon Pallas, were also actively doing.[397]

In order to make these circuits work, there was a requirement for imagination to fill gaps in discretely rendered anecdotes and natural histories. This comprised the third way in which Pennant constructed the Arctic. Experiencing the Arctic, prohibitive as northern travel was, required cobbling together anecdotes and facts in one's imagination—creating linkages, yes, but also assuming similarities in nature where there may not be first-hand experience. Pennant depended on the link between sense—the data collection—and the work of imagining the pieces coalescing into an entire "Arctic World."

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[394] James S. Romm, *The Edges of the Earth*, 28.
[395] Romm, *Edges of the Earth*, 28.
[396] Pennant, *Arctic Zoology*, ii.
[397] This is not my idea. Ryan Tucker Jones described Peter Simon Pallas, Thomas Pennant's correspondent and friend, as "preferring projects of Humboldtian scope" (*Empire of Extinction*, 174). I support this argument, and I think other eighteenth-centuryists, like Anya Zilberstein, see inclinations towards globally scaled natural histories in this period as well. This was also the same scale of nature that Buffon was examining in his *Histoire Naturelle*.

Imagination, which for sixteenth and seventeenth century intellectuals was considered to hold an ontological position between reason and sense, possessed epistemological significance in its ability to connect sense to reason. The seventeenth-century alchemist, Robert Fludd, positioned "imagination" between sense and what he considered to be intellect, which constituted the "divine" aspect of human rationality.[398] Francis Bacon's framework for scientific exploration also allotted epistemological space for "imagination."[399] In the eighteenth century, "imagination" still held a privileged position in intellectual explorations. The 1737 Nathan Bailey dictionary, *Universal Etymological English Dictionary*, described "imagination" as, in part, "a power or faculty of the soul, by which it conceives and forms ideas of things, by means of certain traces and impressions that had been before made on the brain by sensation."[400] Immanuel Kant, like Pennant, even ascribed the epistemological significance of "imagination" to geography and mental mapping.[401] In Diderot's *Encyclopédie*, "imagination" can be found in the segment on "Senses," in which imagination is an internal sense, along with memory and attention.[402]

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[398] Robert Fludd, *Tomus Secundus de Supernaturali, Naturali, Praeternaturali et Contranaturali Microcosmi historia, in Tractatus tres distributa* (Oppenheim: Johann Theodore de Bry, 1619). See especially Liber X, entitled *De triplici animae in corpore visione*, and pp. 218-9

[399] Karl R. Wallace, *Francis Bacon on the Nature of Man: The Faculties of Man's Soul* (Urbana: University of Illinois Press, 1967), 69-71.

[400] Nathan Bailey, *Universal Etymological English Dictionary* (Edinburgh: Printed for the Proprietors, 1764). The other part of the definition, which I think applies less directly to Pennant's epistemology of natural history is that imagination was "an application of the mind to the phantasm or image of some corporeal thing impressed in the brain." Livingstone, *The Geographical Tradition*, 115.

[401] Paul Richards, "Kant's Geography and Mental Maps*," Transactions of the Royal Institute of British Geographers,* 61 (1974): 1-16.

[402] "Senses," *The Encyclopedia of Diderot & d'Alembert Collaborative Translation Project,* translated by Nelly S. Hoyt and Thomas Cassirer (Ann Arbor: Michigan Publishing, University of Michigan Library, 2003), http://hdl.handle.net/2027/spo.did2222.0000.167 (accessed 18 April 2019). Originally published

Pennant's natural historical epistemology relied upon sense—perception through observation—and imagination. However, because Pennant's "relative duties forbade" him from extensive travel—not to mention his relative self-patronage—Pennant relied upon the "sense" of others to provide foundational data for his natural historical observations and analysis.[403] Imagination, and an explicit focus on "imagination" in his description of his methodology, allowed Pennant to draw partial connections from sense to reason, portraying a reasonable and reliable vision of northern nature. Other areas of natural knowledge production in the eighteenth century required this, too. For instance, mineralogists in the eighteenth-century were dependent on imagination for understanding the internal workings of the earth.[404]

"The Arctic World" was the perfect place for Pennant to formulate and experiment with his natural historical epistemology. The extremity of the Arctic climate and the difficultly in reaching it certainly influenced, if not required Pennant's employment of imagination and "imaginary tours" in his natural historical approach. By its nature, the Far North was largely unreachable, and very few British citizens ever made it north of the Arctic Circle by the eighteenth century. There were fewer accounts of northern nature than there were of temperate and tropical nature. The Arctic was more easily reached via "imagination" than it was reached in person. With the exception of the

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as "Sens," *Encyclopédie ou Dictionnaire raisonné des sciences, des arts et des métiers,* 15:24–27 (Paris, 1765).

[403] Pennant, *Arctic Zoology*, iii.

[404] Anna Graber, "'A Place for Human Inquiry': Mikhail Lomonosov's Enlightened Mineral Science" (working paper, Program in the History of Science, Technology, and Medicine, University of Minnesota).

few who traveled to or lived there, like Hudson's Bay Company employees, imagining the North was the means by which most Britons could conceptualize it. In this regard, Pennant benefitted from the few accounts of northern voyages, like the vastly popular *Journey to the Northern Ocean* by fur-trader naturalist Samuel Hearne, but also his correspondence with chief factor Andrew Graham.

Towards establishing his and Britain's geopolitical claim over the Far North, Pennant included parts of Great Britain in his survey of the Arctic. In addition to British-claimed territories in the northern part of North America, Pennant included the Orkney Islands, north of Scotland, in his survey. This, he seemed to suggest, was the link between British geography and the Arctic World. There are a couple of ways in which he justified this linkage. In some instances, he made direct comparisons between the landscapes of northern Britain and the most rugged terrain of far northern lands, including the Kamchatka Peninsula in Russia. For example, he wrote, "I had the hardiness to venture on a journey to the remotest part of North Britain, a country almost as little known to its southern brethren as Kamtschatka."[405] In his mind, the farther parts of Britain were as foreign to Britons as much farther away landscapes. However, not only its otherness likened these faraway lands to Britain; physically they were equally described as "rugged" and "barren."

Importantly, the Arctic that Pennant fashioned was not the exact same Arctic as those earlier explorers and British Arctic residents. In part, the theoretical understandings of Arctic nature and Arctic geography were distilled by the first-hand experiences of

[405] Pennant, *Supplement to Arctic Zoology*, 11.

Arctic travelers. By the time that Pennant gathered his accounts and evidence about the Far North, his understanding of Arctic had gained both intellectual and physical space from the Arctic of the sixteenth and seventeenth centuries. Although "imagination" was an important component to Pennant's understanding of the "Arctic World," it was the combination of "imagination" with those experiential accounts that culminated in an imperialized understanding of the Far North. Importantly, Pennant's natural historical approach was deemed completely valid by his contemporaries. Via Pennant, we can see how "imagination" worked with observation and comparative analysis to constitute a legitimate epistemology of natural history. Here I harken back to the "epistemic culture" I mentioned earlier. Examining Pennant enriches our understanding of eighteenth-century natural historians' "epistemic cultures" by demonstrating how complexly natural spaces were constituted.

Despite Pennant's adherence to a group of naturalists who explored globe by mobilizing observers and synthesizing accounts, Pennant did not possess an interest in more tropical locales in the global South, which differentiated him from some of his colleagues. We can perhaps see this in his lack of concerted effort in improving *Indian Zoology*. This seeming indifference towards the global south strikes the historian as slightly odd, as many of his countrymen in this period were especially fascinated with more equatorial regions of the British Empire, where incredible biodiversity and "exotic" cultures provided ample research material for the natural historically inclined. We could speculate that Pennant looked elsewhere for his objects of study because tropical natural history was already a crowded field. However, Pennant, who was also intrigued by

antiquities—specifically related to England's Anglo-Saxon, Danish, and Norman past, and made a dedicated study of them—was fascinated by the north and with drawing connections between England and its northern heritage.[406] He certainly would not have been the first Englishman to do this (consider, for instance, John Dee).

In investigating Pennant's approach to natural history and its connection to his "national" identity, we can see that Pennant understood that he was contributing to a larger project of British natural history. In his reflection on *Indian Zoology* in his 1791 advertisement, Pennant remarked on the distance that science had traveled in the half century he had been writing natural histories. He remarked upon the "richness of the harvest" from "Science" having "found its way into our most distant possessions."[407] The portability of natural history as a scientific discipline, requiring as it did few tools and instruments in order to practice it, but also that it could be done to a certain degree remotely, made it the perfect investigative science for the far reaches of the Empire. By the eighteenth-century, the scale at which natural history was deployed had dramatically increased with the growth of commerce, which gave more access to naturalists to previously inaccessible parts of the globe, as maritime technologies had improved and made it easier and faster for people, specimens, and ideas to travel around the British Empire.[408] The Empire's very scale, as well, facilitated the widespread deployment of

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[406]Jane Hawkes, "Constructing Identities in the Eighteenth Century: Thomas Pennant and the Early Medieval Sculpture of Scotland and England" in Constantine Mary-Ann Constantine and Nigel Leask, eds., *Enlightenment Travel and British Identities: Thomas Pennant's Tours of Scotland and Wales* (London: Anthem Press, 2017): 86-104.

[407] Thomas Pennant, *Indian Zoology* (London: Printed by Henry Hughs, for Robert Faulder, 1791).

[408] Harold J. Cook, *Matters of Exchange: Commerce, Medicine and Science in the Dutch Golden Age* (New Haven: Yale University Press, 2007).

natural history. Pennant's work, though with its local flavor, benefitted greatly and was made possible by the slow encroach of British imperialists, tradesmen, and naturalists to the farthest reaches of the Empire.

Pennant was himself a part of this rich harvest, and he devised a scheme for natural history that was suited to such a large empire. Pennant's approach to natural history, relying as it did on synthesis and cultivation of colleagues around the world, made it such that physical travel was not required in order for it to be done both well and in a comprehensive fashion. *Indian Zoology* was as Pennant characterized it a "fragment" of something much larger, both in the sense that it was merely a (large) corner of the British Empire, a sliver of the British Empire's natural history, and only a single volume of Pennant's 23-volume magnum opus. Even beyond the scale of the British Empire, we can begin to see how the fragment, *Indian Zoology,* and Pennant's invocation of imagination was a part of the eighteenth-century development of global natural histories.

Pennant's Correspondents and Northern Natural Theology

In addition to envisioning the North as a British space, Pennant's imaginings of the North were tied to his personal identity, not only as a Briton, but as a sort of "northern" intellectual who benefited from a supportive network of correspondents. Importantly, Pennant's network of correspondents reflects some of his intellectual philosophies about nature. Though Pennant has not secured the same kind of attention from scholars as his contemporaries like Linnaeus or Buffon, in studying Pennant's circle of acquaintances, it is obvious that Pennant was situated at a node of ideas which reveals

Pennant's northern inclinations and provides crucial context to the very synthetic nature of his natural historical publications and in particular his construction of the "Arctic World." In some ways, it was the only way that Pennant was able to produce such geographically expansive natural histories, given that his travels were primarily local or on the continent to visit his renowned intellectual friends. This, however, was not unique to Pennant, and is rather a testament to one type of natural historical study that was in practice at this time.

Pennant, like other Enlightenment thinkers, spent time cultivating his correspondences with other intellectual elites.[409] In addition to maintaining his correspondences with Linnaeus and Buffon, Pennant also had friends flung more broadly across the globe, in North America, Scandinavia, St. Petersburg, Germany, and elsewhere. Through this vast network of rather impressive contacts, Pennant had something of a literary entourage, making him an active member of the Republic of Letters. Whereas Linnaeus had inculcated in his students his methods and theories about nature, whereupon they ventured out in the world, Pennant's exposure to far away nature was much more possible through his intellectual contacts. Through these individuals, he gathered natural historical observations and commentary on faraway places, ideas which he included in his works. Throughout his active "literary years," Pennant's travels and many correspondences aided him in the publication of a number of important natural

[409] For more on naturalists' correspondent networks in the seventeenth and eighteenth centuries, see Chapter 2: "Putting Texts, Things and People in Motion: Learned Correspondence in Action" and Chapter 5: "Publics of Letters: Printing for (and Through Correspondence)" in Elizabeth Yale, *Sociable Knowledge: Natural History and the Nation in Early Modern Britain* (Philadelphia: University of Pennsylvania Press, 2016): 55-88, 168-204.

history texts. Among these were his *British Zoology*, *History of Quadrupeds*, and several accounts of Wales and other parts of Britain.

Staying connected to these far flung intellectual colleagues could be something of a challenge. Pennant and his correspondents often had to rely on friends and acquaintances to insure the delivery of not only letters, but parcels containing specimens of geological, faunal, and vegetable importance. Correspondents had to overcome and endure the high cost of postage, the slowness of ship travel, and sometimes the lack of follow-through, particularly from the aristocracy, in exchange for specimens or information. For instance, Pallas confided and complained to Thomas Pennant that:

> "I am much afraid to deal with these great folks. Lord Hope never has send a single specimen for all I gave him, & all the services I lent him during his stay in Petersburgh. Mr. Greville has not so much as answered to a Parcell of more than 100 Sibirian specimens I transmitted to him last Spring…let me tell you, that in matter of Curiosities I am growing as selfish as a Miser is of money."[410] (106)

These challenges are particularly well documented in Pallas' surviving letters to Thomas Pennant. Pallas and Pennant relied upon a number of sources to ensure the delivery of documents, artifacts and specimens. They employed the Porter & Co. shipping company; Pennant mailed letters to Pallas' sister in Berlin, who mailed them on to Pallas.[411] A mutual friend, Edward Darrell, served as a reliable address to which Pennant and Pallas would mail letters.[412] All of the surviving Pallas letters to Pennant, in fact, were addressed to Edward Darrell in London. Pallas also relied upon English

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[410] Peter Simon Pallas, "Letter IX," in Carol Urness, ed., *A Naturalist in Russia: Letters from Peter Simon Pallas to Thomas Pennant* (University of Minnesota Press: Minneapolis, 1967).
[411] Peter Simon Pallas, "Letter II," in Carol Urness, ed., *A Naturalist in Russia: Letters from Peter Simon Pallas to Thomas Pennant* (Minneapolis: University of Minnesota Press, 1967).
[412] Carol Urness, *A Naturalist in Russia*, 25.

visitors in St. Petersburg to deliver both mail and packages to Pennant and their other British colleagues. Both the English ambassador to the Imperial Court and a British consul at the English embassy carried letters for Pallas and Pennant over the years.[413]

Through some of Pennant's letters, we know he had an active intellectual relationship with some of the most renowned eighteenth century naturalists. He maintained correspondence with Carolus Linnaeus until Linnaeus's death. Linnaeus became interested in Pennant early in Pennant's career. By 1757, Pennant had gained the notice of Linnaeus through his work on earthquakes and was invited to become a member of the Royal Society of Uppsala. Pennant struck up a correspondence with Linnaeus that lasted until the Swede's death in 1778. It was this contact, perhaps more than almost any other, that showcases Pennant's proclivity for examining northern nature.

In 1765, Pennant took a tour of continental Europe, spending several weeks in the company of Buffon, both at the Jardin du Roi in Paris and at Buffon's seat in the French countryside. Pennant's engagement with Buffon's ideas culminated, on the surface, in the 1786 rebuttal of Buffon's *Natural History of Birds*. However, Pennant's relationship with Buffon may also provide insight into some of Pennant's philosophies of nature. Pennant's work converges on Buffon's point of view about natural history that forefronted "histories of nature," which emphasized the interrelationships between species and leaned heavily on analogical thinking to draw connections. As described earlier in this chapter, Pennant's employment of analogical thinking and the global interrelationships between

[413] Peter Simon Pallas, "Letter II," "Letter VII," in Carol Urness, *A Naturalist in Russia*.

species reflects Buffon's vision of nature. Pennant seemed to flirt with eighteenth-century vitalism in his natural historical works.

Pennant was also an on-again-off-again friend of Joseph Banks, though it is unclear from Pennant's published writings what the nature of their disputes were. Pennant had reservations about his friendship with the father-son Forsters, although he also patronized Johann Reinhold Forster when the latter fell on hard times. From his letters with Pallas, it is apparent that there was some mutual dislike for the Forsters, seeing them as both bloated by ego, unimpressive systematists, and having poor manners and character. Their letters suggest that the Forsters were ill-received almost anywhere on the Continent, although their reception in Great Britain was much warmer. These conversations undermine Pennant's outward attitude of civility towards the Forsters, and Pennant often made work for Johann Reinhold to help him support his family of ten children.

Although friends with the Forsters, Daniel Solander and Joseph Banks, Pennant's foci anchored him to British ground – even if it was far away. Unlike Solander and Banks, Pennant preferred a more local approach to natural history, like his friend Gilbert White. White's *Antiquities and Natural History of Selborne* were written originally as a series of letters dictated to Daines Barrington, but also to Thomas Pennant. While Pennant and White shared their more localized scope to natural history, Pennant was influenced to travel more broadly across Great Britain by his acquaintances with Solander and Banks, whose grand global adventures overlooked the very important work of local

understandings of British nature. Pennant took this on himself, akin to Gilbert White's micro natural history of Selborne.

Pennant also corresponded with less renowned naturalists, including Anna Blackburn, who may have been the most important female British collector in the mid- to late eighteenth century, despite a distinct lack of aristocratic status.[414] Blackburn was known by and acquainted with Linnaeus, Pennant, Pallas, and others, in part because she was actively involved in the trade of specimens and letters from her brother in North America to Pallas in St. Petersburg. For instance, in one letter from Pallas to Pennant, Pallas writes, "If by that time Mrs. Blakburne will have the Cornwall and Derbyshire ores, she has been so kind to promise, she may send them by her Brother's Ship, & be sure of a very acceptable return."[415] In exchange for ores for Pallas, Blackburn received specimens from the Russia-based naturalist; the subtext here is that Pennant would orchestrate this exchange. This global exchange of specimens and knowledge that were inaccessible to many Europeans made Blackburn part of a crucial web of exchange of natural historical information.

As immersed as Pennant was in the intellectual back and forth of the eighteenth century, perhaps the most interesting aspect of Pennant's network was a certain inclination for northernness. In addition to Linnaeus, Pennant's most important intellectual friendship pivoted around discussions of northern nature. Pennant's greatest

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[414] V.P. Wystrach, "Anna Blackburne (1726-1793) – a neglected patroness of natural history," *Journal for the Society of Bibliographic Natural History* 8, 2 (1977): 158-168.

[415] Peter Simon Pallas, "Letter V," in Carol Urness, ed., *A Naturalist in Russia: Letters from Peter Simon Pallas to Thomas Pennant* (Minneapolis: University of Minnesota Press, 1967), 29.

intellectual friendship, though somewhat short-lived, was with the younger German naturalist, Peter Simon Pallas. Pennant and Pallas corresponded and commented on each other's work throughout their adult lives until Pallas's work in Russia slowed the course of their interactions.[416] Pallas, whose patroness was Catherine the Great, had access to the vast Asiatic continent, and his work did take him to Siberia. His experience in Siberia influenced and informed Pennant's description of the Arctic World greatly, as Pallas was a trusted friend who Pennant perceived to be of like mind.

Pallas reviewed and expanded upon Pennant's work, and supplied him with material for his work, but in particular *Arctic Zoology*. Pallas's work focused primarily on Siberia and the Russian North. These naturalists supplied him with experiential observations from the ground, so to speak, and sent him specimens for study, as well. Not only were his most important contacts and valued correspondents living in the north, but Pennant thought that Great Britain had both a political and geographical claim on parts of the Far North. In the end, this political and geographical stake on the Arctic explains, in some sense, the importance of the Far North to Pennant's natural historical ruminations.

Supporting his northern inclinations, Pennant became a member of the Royal Society of Uppsala a decade before he was elected to the Royal Society of London. His professional memberships in Scandinavian scientific organizations extended to the Royal Society of Trondheim in Norway, and he was a member of several, smaller and less prestigious fellowships as well.[417] Although Pennant does not explicitly discuss the

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[416] Carol Urness, ed, *A Naturalist in Russia: Letters from Peter Simon Pallas to Thomas Pennant,* (Minneapolis: University of Minnesota Press, 1967).
[417] Pennant, *Literary Life*, 13.

northernness inherent in his intellectual network, a potential explanation for this northern inclination can be derived from *Arctic Zoology*. Pennant wrote *Arctic Zoology* as a second choice when he was no longer eligible to be a naturalist of North American in total. For him, natural history required a patriotic connection to those domains being surveyed. Because Britain could be included in an Arctic Zoology, it is safe to assume that Pennant saw the far north as within the grasp of English expansion and imperial conquest, which means that Britain was northern. This British northernness could have been tied to the antiquarian history of Britain and its relationship to Scandinavia, but it could also simply be geographical. If we can assume Pennant saw Britain as northern, then presumably he saw himself as also northern, and so this northern nativism positioned him well to have alliances with northern scientific societies.

European northernness was certainly important to the production of *Arctic Zoology.* Pennant, though, was even more thorough in his data collection and had North American correspondents who supplemented much of his knowledge about northern North America, the Hudson Bay region, and the Arctic. Pennant corresponded with and knew Samuel Hearne. Hearne's overland expeditions to the Arctic Ocean in the 1770s comprised the first overland expedition to the Arctic Ocean by a European. Hearne's widely read publication, *Journey to the Northern Ocean*, represented a highly embellished, semi-fictionalized account of such an overland journey, but Pennant and Hearne wrote to one another as well, which likely provided a different accounting of the north to Pennant. Pennant's relationship with Hearne fleshed out much of the descriptions of northern North America represented in *Arctic Zoology*:

> To M. SAMUEL HEARN, the great exporer by land of the Icy Sea, I cannot but send my most particular thanks, for his liberal communication of many zoological remarks, made by him on the bold and fatiguing adventure, he undertook from Hudson's Bay to the ne plus ultra of the north on that side.
>
> To Mr. ANDREW GRAHAM, long a resident in Hudson's Bay, obliged me with numbers of observations on the country, and the use of multitudes of specimens of animals transmitted by him to the late museum of the Royal Society, at the instance of that liberal patron of science, my respected friend the Honorable DAINES BARRINGTON.[418]

Pennant's relationship with Arctic residents and fur traders, when couched in the on-the-ground experiences of Graham and Hearne require an analysis of the continuity of descriptions and information. Importantly, Pennant's portrayal of the Far North appears stripped of many of the racialized, colonial interactions that shaped the understanding of the Arctic of the fur-trader naturalists who worked there. However, what Pennant contributes to the description of the Arctic is a higher-level imperial understanding of the Far North that is heavily dosed with the appearance, if not the genuine belief, in natural theology as a justification for British ownership of the Far North. For instance, Pennant invokes natural theology to explain the distribution of plants and animals in the very far north, referencing, also, the utility of his philosophical circuit methodology:

> "In a philosophical circuit of the globe, it is easy to observe the exact proportion of necessaries, animal or vegetable, which are allotted by the all-wise Providence to the demands of the inhabitants of the respective climates. To such part of the Europeans who were destined to active and exploring life; to the subjection and civilization of distant people, nearly unreclaimed from a state of nature; the means of conveyance, for attaining so desirable an end, were supplied and pointed out. In distant ages, most part of the world was on an equality"[419] (24)

Thus, Pennant brings together two arenas of natural historical descriptions of the Arctic. Earlier descriptions of the Arctic, including those presented by fur-trader

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[418] Pennant, *Arctic Zoology*, A3.
[419] Thomas Pennant, *Supplement to Arctic Zoology*, 24.

naturalists, suggested a more imperial description of the Far North. Fur trader-naturalists invoked imperial and natural historical claims to justify their interactions, treatment, and relationships to indigenous peoples and the cold climate. However, there is another tradition for description of Arctic climates in European natural history, which consisted of natural theological representations of the North. These descriptions may have been in part dressing to appeal to their pious audiences; nonetheless the north was explained through the providence of God. Specifically, natural theology helped to explain confounding realities that people could live comfortably in the Arctic.

For instance, the Danish bishop, Erich Pontopiddan's 1755 *Natural History of Norway* interpreted the north through the lens of natural theology, and thus offered a very different conception of northern living and northern nature than what was on offer by many of the British descriptions of North America. Pontopiddan acknowledged the intensity of cold in Norway, particularly in mountainous regions, but then goes on to explain that "this is of such importance to the welfare of the country, that, in a mild winter, the peasants, who live among the mountains, are considerable sufferers; for, without this severe frost and snow, they can neither convey the timber they have felled, to the river, nor carry their corn…in their sledges, to market towns…"[420] Pontopiddan attributes this to the "divine economy;" Linnaeus, too upheld the divine economy for describing all of nature's interactions. For Pontopiddan, God provided for the north as

[420] Erich Pontopiddan, *Natural History of Norway: containing a particular and accurate account of the temperature of the air, the different soils, waters, vegetables, metals, minerals, stones, beasts, birds, and fishes; together with the dispositions, customs, and manner of living of the inhabitants: interspersed with physiological notes from eminent writers, and transactions of academies,* (London: A. Linde, 1755), 13.

equally as he did for more temperate locations, even if to natives of more southerly climates it seemed impossible to survive in northern lands. The frigid zone was not absent of God, and thus all places were livable.

A similar description is seen in Uno von Troil's 1772 *Letters on Iceland*. Von Troil, a Swede, travelled with Joseph Banks and Daniel Solander on their journey, and perhaps because of his ecclesiastical background, like Pontopiddan, interpreted Iceland with a similar natural theological lens. His descriptions of the quality of the climate, and the consequential constitutions of Icelanders resemble the attitudes of British residents in the Hudson Bay region. Von Troil described that although the island was miserably cold and barren, it maintained 60,000 residents. Despite this, "the climate of the country, and the purity of the air, contribute very much to make the Icelanders strong and healthy, though their food and way of life frequently produce the contrary effect."[421] In other words, although a seemingly unbearable place to live, there were attributes of Iceland which made it liveable, attributes that certainly had to do with God's design in nature.

Pennant read and incorporated these published works about the European Arctic in *Arctic Zoology*, though he finds plenty of reason to disregard the credibility of the authors, especially critiquing their scientific data while he himself invoked natural theology in his descriptions of the Arctic both for people and for animals. It is quite clear from Pennant's descriptions of the north as a "haven for birds" or an "asylum for water-

[421] Uno Von Troil, *Letters on Iceland, containing observations made in 1772 by Joseph Banks, assisted by Dr. Solander, J. Lind, Uno von Troil: To which are added the letters of Dr. Ihre and Dr. Bach concerning the Edda and elephantiasis of Iceland; also Professor Bergman's observations and chemical examination of the lava and other substances produced on the island* (London: Printed by and for W. Richardson, etc., 1780), 119-1.

fowl," that his perspective is also natural theological.[422] For Pennant, the north, with its limited species and rocky outcrops, was an ideal location for birds to migrate to in the summer because there were few predators and excellent breeding grounds. This convenience was only made possible by the providence of a merciful and thoughtful Creator. In general, the Far North, unable to sustain agriculture and limited in its animal species, was blessed instead by individual species in great abundance. For instance, Pennant described fish species in the Baltic and North Seas around Scandinavia in the following terms: "the species of fish in these seas are few; but the multitudes, under several of the most useful kinds, are amazing."[423]

Pennant's natural theology and its entanglements with imperial thinking are particularly noticeable in the context of "use." For the British Empire to want to possess northern lands, the north had to be rendered in an empirical fashion that demonstrated the worth of the northern lands; they had to have some use that was beyond the aesthetic, the sublime, or the wonderful. They had to be economically advantageous, and Pennant's descriptions of the north, while naturalized and empirical, were also reflective of imperial attitudes about value in nature and the implications of natural theology. These far northern places, though susceptible to "cold of incredible violence," inhabited by "subjects condemned to such a dreadful abode," and "untrodden wastes," were not

[422] Pennant, *Arctic Zoology*, LI. There has been some suggestion to me that Pennant was using natural theology as a "dressing" for his work and that his invocation of natural theology was not genuine or authentic. This distinction is tangential to the goal of this project, which is to understand how the rhetoric itself about the Arctic can appear contradictory and yet not be so. If natural theology is superficial, this in itself explains how descriptions of the Arctic could come to be contradictory in the descriptive presentations of northern places.

[423] Pennant, *Arctic Zoology*, LIV.

completely abandoned by the providence and grace of the Creator.[424] The "author of nature" had inscribed value into northern places, as well, which Pennant carefully showcased. He wrote, "Providence hath, in these parts, bestowed with munificence the species which contribute to the support of mankind."[425] This type of articulation of natural history, natural theology, and empire was not uncommon in the eighteenth century, nor was it uncommon among Pennant's pen pals. Linnaean natural history had long upheld the promise of cameralism—that a nation was self-sufficient, but in order to benefit from all that God had provided for the nation, one had to know the nature endemic to that place. This natural theological and imperial perspective of the Far North upheld by Thomas Pennant neatly fits within his concept of natural history for a northern nation.

Conclusion: Pennant and the Global

Thomas Pennant intertwined Aristotelian physical geography (*periodos ges*), travel literature, and the tool of "imagination" in developing a natural historical method that integrated the "Arctic World" into the British Empire and made the North "British." He took advantage of his wide network of northern correspondents and interwove a narrative of the Far North that explained its challenging environment via natural theology, as did other naturalists of the Far North. In the British world, Pennant uniquely took on the Arctic as a historical subject in this period, but his reasons for doing so

[424] Pennant, *Arctic Zoology*, LII, LIV, LI.
[425] Pennant, *Arctic Zoology*, LXXVI.

aligned with his imperial agenda and his identity as a participant in northern knowledge making.

In another way, however, Pennant's importance supersedes his scholarship on the Far North or as an imperial naturalist. His approach to natural history was such that Pennant was able to comprehend nature on a huge scale; he comprehended it on a global scale. Pennant's development of this approach with *Arctic Zoology* and his implementation of it with *Outlines of the Globe* offered a global vantage for the British imperial naturalists to examine their holdings. With this approach to natural history, Pennant worked to accomplish his duties as a *British* naturalist, those tasks being to categorize, inventory, and trace *British* nature and *British* lands, even when it took one far from the British Isles.

In this way, Pennant's global natural history of the "Arctic World" is also, paradoxically, a local natural history: we can see it as a British natural history, and a natural history of Britain writ large. This depiction of the North as a large part of the British Empire, while also contiguously connected by its nature to other northern lands, depicted not only Britain as northern, but depicted parts of the north as British. There is no distinction here between the local and global—there was no tension. The global was the local in the context of the British Empire, and for Thomas Pennant it was no great leap to move from Gilbert White-ian natural historical localism to a comprehensive, imperial natural history of the "Arctic World."

In this context, we can point to Pennant's natural historical work of the Arctic as an example of the "rise of the global," which has been argued by Anya Zilberstein in

several of her articles on New England natural history in the eighteenth-century.[426] Pennant was an influential Enlightenment figure in conceptualizing places around the Earth as part of a global system in which certain types of environments and conditions determined the types of people, plants, and animals that could live in these places. And it's not nearly so simple as assuming that latitude predetermined all—Pennant quite clearly mentioned that Arctic flowers could grow in British gardens, that white pines would grow at the same latitude in Lapland but not Siberia, which was much colder, and that peoples throughout the Arctic defied assumptions about their barbarism and laziness.

Pennant demonstrates to the historian that the emergence of a global vision of the world relied not only on physical travel and experience, but importantly the relationship between imagination and constructing integrated, comprehensive environments that captured the experience of life for plants, animals, people, and the resources around them. Pennant utilized all the resources available him to craft a British Arctic, a synthetic vision of the "Arctic World" which was both global and imagined.

[426] Anya Zilberstein, "Objects of Distance Exchange: The Northwest Coast, Early America, and the Global Imagination," *The William and Mary Quarterly* 64 (2007): 591-620.

Conclusion: An Early (and) Modern Arctic

The historical Arctic can be seen, in a number of respects, as a place on the edge. The Arctic exists at the very perimeter of what we imagine the habitable, comfortable world to be, even as human notions of habitability have changed and expanded since the time of the Greeks.[427] Despite continual reminders of environmental challenges that face the Arctic and bring it closer to us, it still feels remote and far away, easily forgotten.[428] Historians of northern science and empire, especially those concerned about indigenous inhabitants in the circumpolar north, have worked, recently, to remind us in the present that the North has always been habitable or inhabited—for those who experience life in the North, it is not peripheral.[429] But our perception of the north's inability to sustain life and peripheral geography resists change, in part due to the sway of old portrayals of the Arctic that imperialists, especially those supported by the backing of the British Empire, using their political power to control narratives of northern nature, generated and enforced beginning in the sixteenth century.

Querying the historical Arctic also troubles the temporal distinctions we as historians have made about the modern and the premodern. The Arctic, as it was seen by European visitors and commentators on the North in history, possessed a certain premodern primitivism, a Borealism (if we extend the language of Edward Said's

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[427] Romm, *The Edges of the Earth in Ancient Thought.*

[428] Some scholars have even argued that it is the environmental challenges that have made the Arctic feel closer to us. However, one could also argue that the seeming remoteness of the Far North explains our poor stewardship over its vulnerable environment.

[429] Two historians of the North who have been adamant in this regard are Sverker Sörlin and Andrew Stuhl. Sörlin, who gave the History of Science Society Keynote lecture in 2017, about what he calls the "Northern Turn," cited Stuhl's *Unfreezing the Arctic* as a model for progress towards more compassionate and responsible northern scholarship.

Orientalism).[430] The North has "wilded" and "emptied" in European historical understandings of it, conferring to it a certain savagery and remoteness from the "modern" world. In his foreword to Karen Oslund's *Iceland Imagined*, the environmental historian William Cronon writes that historical travelers heading to Iceland—Arctic-like by early modern standards—"saw themselves moving back in time into [a] mythic space…"[431] Historical actors thinking about the Arctic, like Thomas Pennant, saw the people who lived there as "nearly unreclaimed from a state of nature."[432]

Despite theories of human races that were informed by Olof Rudbeck's Gothicism (that northern Europeans were the superior race), a perception of primitivism and indigeneity emerged in the eighteenth century in which north Asian migrants crept across Beringia and populated North America, becoming Native Americans; in this, the Arctic was populated by people who were perceived by Europeans to be rude and savage.[433] Similar to the backwards-slipping sense of degeneration implied in the adoption of native practices by British fur trader-naturalists in the eighteenth century Hudson Bay region, this time slippage that occurred in the historical imagination of those who visited the Far North has been subtly reinforced in the present day. Arctic historians have largely taken the north as it is portrayed in the nineteenth century: modernity came to the North and the North came into the rest of the world with John Franklin and his would-be rescuers,

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[430] Edward W. Said, *Orientalism* (Vintage Books, 1979).
[431] William Cronon, "Foreword: Amid the Mists of Northern Waters and Words," in Karen Oslund, *Iceland Imagined*, XI.
[432] Pennant, *Supplement to Arctic Zoology*, 24.
[433] Douglas Hunter, *The Place of Stone: Dighton Rock and the Erasure of America's Indigenous Past* (Chapel Hill: University of North Carolina Press, 2017), 47*; Sainson, Revolutions in Time: Chateaubriand on the Antiquity of the Earth*, 49.

Robert Peary and Frederick Cook's highly publicized race to the Pole, and the other adventurers who sought a primordial, premodern, *preindustrial* salvation in conquering the North or letting the North conquer them.[434]

By examining the Arctic and how it was understood by the British in the early modern period, it comes to be a more central place, both geographically, politically, and in terms of the epistemologies that helped to shape this landscape. Not only do we gain a fuller view of its integral place in the history of the British Empire, in particular, but in examining the Arctic and the people who constituted it historically, we write a narrative in which the early modern Arctic takes on historical meaning. Investigating how intellectual frameworks were deployed to constitute particularly useful visions of the Arctic by early modern Britons living in the north or thinking about the north brings the historical Arctic into a being. We recognize it as a place that was conceptualized critically by historical actors. In so doing, our creation of the early modern Arctic calls into question what it means to be modern in a place perceived as preindustrial, primitive, and peripheral as the Far North.

Gerard Mercator and John Dee put the Far North at the center of their charts at a time when cartographic standards were shifting. For them, this served a practical purpose: a clearer vision of the North's arrangement, but it hints to us that the North was a *centerpiece* in Dee's imperial ambitions. It was a significant place, real enough to be claimed, and the consequences of its settlement would be transformational for the British Empire. Supporting his claims with geographical evidence and historical genealogies that

[434] Robinson, *Coldest Crucible*, 108.

could confer Arctic inheritance, Dee positioned the North as a properly British place. Richard Hakluyt agreed and believed that with successive trials—experiments that should be carried forth even with failure—the North and other parts of the New World would coalesce and amount in a Baconian sense to a comprehensive British realm. The North was not mythologized by the British in the sixteenth century, despite that their geographical understandings of it turned out to be inaccurate. Dee and Hakluyt envisioned the north rationally, critically, and empirically. We must simply take the knowledge they possessed more seriously than we have heretofore.

In the following centuries, the Hudson's Bay Company worked to distance Britain from the Arctic. Although the Company was a proxy for British power in the North, which was upheld by British Parliament in the 1749 parliamentary inquest against the Company, it had its own imperial propositions and goals. Though its headquarters were in London, it depended upon the Far North for its commercial success. Hudson's Bay Company employees coped with northern life by employing different strategies—adopting indigenous practices, reevaluating strategies of improvement, rationalizing the northern world with medical climatology—but those strategies supported certain visions that aligned with their understandings of northern nature, both its climate and how its climate affected human health. British knowledge of the north did imperial work for the Company. It allowed them to frame their operations in a way that justified their relationship with indigenous peoples, conceptions that were embedded in their understandings of their relationships with one another, like the "myth of mutual dependence," and their theories of bodies and health.

Pennant's synthesis captured the multitude of visions that were created before him, from the narrative of Britain's rightful ownership over northern places, to the insight and observations of fur trader-naturalists about northern landscapes. On top of that, Pennant's patriotism was connected to natural history with natural theological dressings to explain complicated realities about the north which defied earlier traditions. In so doing, he presented a unified vision of northern nature, one that spanned continents, but which was still British.

British imperialists with interests in the Arctic invented a past, a present, and a future vision of the North in which it belonged to Britain. British intellectual frameworks were used to flesh out these visions. When the British Navy, "bored" and useless after the Napoleonic Wars, looked to the north for occupation in 1818, it already belonged to them, for they'd written its history and shaped its landscapes. True competition for the north from other nations would not emerge for another half-century and more, when Americans like Robert Peary and Frederick Cook, Scandinavians like Roald Amundsen, and Canadians like Vilhjalmur Stefansson, envisioned new futures for the North. Despite this interest in the Arctic in what we have called the modern period, studying the early modern Arctic shows that it had already become "modern"—that it was subjected to critical analysis, shaped by colonial power, and measured in a global scale—when the British took a renewed interest in it in the 1800s.

Bibliography

Archival Sources

National Maritime Museum, Greenwich, England

Aiken, John. "Letter from J. Aiken to T. Pennant, Aug. 10th 1788." National Maritime Museum, London. P/16/11/20.

Pennant, Thomas. "Arctic Regions." *Outlines of the Globe*. Undated. National Maritime Museum, Greenwich, London, United Kingdom. P/16/24-25.

Hudson's Bay Company Archives, Winnipeg, Manitoba

Graham, Andrew. "Andrew Graham to Ferdinand Jacobs, 1 February 1773, Severn House." HBCA 4M101.

Hearne, Samuel. "Samuel Hearne to Humphrey Marten, 19 January 1776, Prince of Wales Fort." HBCA 4M101.

Hearne, Samuel. "Samuel Hearne to Humphrey Marten, 19 January 1776, Prince of Wale's Fort," HBCA 4M101.

Hearne, Samuel. "Samuel Hearne to Humphrey Marten, 20 March 1777, Prince of Wale's Fort." HBCA 4M101.

Hearne, Samuel. "Samuel Hearne to Humphrey Marten, 20 March 1777." HBCA 4M101.

Hopkins, Thomas. "Thomas Hopkins to Ferdinand Jacobs, 21 June 1769, Albany Fort." HBCA 4M101.

Hopkins, Thomas. "Thomas Hopkins to Ferdinand Jacobs, 21 June 1769, Albany Fort." HBCA 4M101.

Isham, James. "James Isham to Humphrey Marten, 5 March 1760, York Fort." HBCA 4M101.

Jacobs, Ferdinand. "Ferdinand Jacobs to John Fowler, 26 April 1769, York Fort." HBCA 4M101.

Jacobs, Ferdinand. "Ferdinand Jacobs to Moses Norton, 21 July 1770, York Fort." HBCA 4M101.

Jacobs, Ferdinand. "Ferdinand Jacobs to Moses Norton, September 15, 1762," HBCA 4M101.

Norton, Moses. “Moses Norton to Ferdinand Jacobs, 4 January 1763, Prince of Wales Fort.” HBCA 4M101.

Norton, Moses. “Moses Norton to Ferdinand Jacobs. Prince of Wales Fort, Jan 9 1765.” HBCA 4M101.

Norton, Moses. “Moses Norton to Ferdinand Jacobs. 10 August 1771. Prince of Wales Fort.” HBCA 4M101.

Marten, Humphrey. “Humphrey Marten to James Isham, 18 February 1760, James Fort.” HBCA 4M101.

Newberry Library, Chicago, Illinois

Jode, Gerard de. *Speculum Orbis Terrarum*. VAULT oversize Ayer 135 .J9 1593 Newberry Library.

Munster, Sebastian. *Typus Orbis Universalis*. Baskes Folio G1005 1540 (Plate 30), Newberry Library.

Ortelius, Abraham. Theatrum Orbis Terrarum, Antwerp, 1570. B VAULT Case oversize G 1007 .64, [plate 6] (PrCt, Newberry Library.

James Ford Bell Library, Minneapolis, Minnesota

Mercator, Gerardus. *Septentrionalium terrarum descriptio*, 1595. James Ford Bell Library, [1595 mMe]

Primary Sources

[Otho E. viii. Fol. 216 (225) Colonial, 23] as included in Richard Collinson, *The Three Voyages of Martin Frobisher, in Search of a Passage to Cathaia and India by the North-west, AD 1576-8*. (London: Printed for the Hakluyt Society, 1867), 12.

Bacon, Francis. *Novum Organum*. London, 1620.

Bailey, Nathan. *Universal Etymological English Dictionary.* Edinburgh: Printed for the Proprietors, 1764.

Beale, Anthony. “Letter 2: Anthony Beale, Albany Fort, 23 July 1706” in K.G. Davids and A.M. Johnson, eds. *Letters from Hudson’s Bay, 1703-1740*. London: Hudson’s Bay Record Society, 1965.

Best, George. as quoted in Robert McGhee and James A. Tuck, “An Archaeological Assessment of Qallunaaq Island” in Alsford, Stephen, ed. *The Meta Incognita*

Project: Contributions to Field Studies. Hull, Quebec: Canadian Museum of Civilization, 1993: 7-27.

Brown, Thomas. *The Works Of the Learned Sr. Thomas Brown*. London: Printed for Tho. Basset, Ric. Chiswell, Tho. Sawbridge, Charles Mearn, and Charles Brome, 1686.

Collinson, Richard. *The Three Voyages of Martin Frobisher, in Search of a Passage to Cathaia and India by the North-west, AD 1576-8*. London: Printed for the Hakluyt Society, 1867.

D'Auteroche, M. L'Abbé Chappe. *A Journey into Siberia, Made by the Order of the King of France*. London: Printed for T. Jefferys, Geographer to the King, 1770.

Dee, John. *The Limits of the British Empire*. In Ken MacMillan and Jennifer Abeles, eds. *The Limits of the British Empire*. Praeger: Westport, Connective, 2004. Orig. 1577-1578.

Dobbs, Arthur. "Arthur Dobbs to Captain Middleton 22 January 1742 (OS)." in William Barr and Glyndwr Williams, eds. *Voyages to Hudson Bay in Search of a Northwest Passage, 1741-1747. Volume 1: The Voyage of Christopher Middleton* 1741-1742. London: Hakluyt Society, 1994.

Dobbs, Arthur. "Arthur Dobbs to Captain Middleton, 14 December 1742," in William Barr and Glyndwr Williams, eds. *Voyages to Hudson Bay in Search of a Northwest Passage, 1741-1747. Volume 1: The Voyage of Christopher Middleton* 1741-1742. London: Hakluyt Society, 1994.

Dobbs, Arthur. "Arthur Dobbs to Captain Middleton, 20 October 1742." In William Barr and Glyndwr Williams, eds. *Voyages to Hudson Bay in Search of a Northwest Passage, 1741-1747. Volume 1: The Voyage of Christopher Middleton* 1741-1742. London: Hakluyt Society, 1994.

Dobbs, Arthur. "Arthur Dobbs to Sir Bibye Lake. [January, 1738]." in William Barr and Glydwr Williams, eds. *Voyages to Hudson Bay in Search of a Northwest Passage, 1741-1747. Volume 1: The Voyage of Christopher Middleton 1741-1742*. London: Hakluyt Society, 1994.

Dobbs, Arthur. "Memorial on the Northwest Passage 1731," in William Barr and Glydwr Williams, eds. *Voyages to Hudson Bay in Search of a Northwest Passage, 1741-1747. Volume 1: The Voyage of Christopher Middleton 1741-1742*. London: Hakluyt Society, 1994.

Falconer, William. *Remarks on the influence of climate, situation, nature of country, population, nature of food, and way of life, on the disposition and temper, manners and behaviour, intellects, laws and customs, form of government, and religion, of mankind.* London: Printed for C. Dilly, 1781.

Graham, Andrew. "Observations on Hudson's Bay by Andrew Graham; Twenty-Five Years in the Company's Service, Fifteen Years Chief Factor at Severn York and Churchill Settlements" in Williams, Glyndwr, ed. *Andrew Graham's Observations on Hudson's Bay, 1767-1791*. London: Hudson's Bay Record Society, 1969.

Hakluyt, Richard. *Divers voyages touching the discoverie of America, and theIlands adjacent unto the same, made first of all by our Englishmen, and afterward by the Frenchmen and Britons: And certaine notes of advertisements for observatioons, necessarie for such as shall hereafter make the like attempt, With two mappes annexed hereunto for the plainer understanding of the whole matter*. London: Thomas Woodcocke, 1582.

Hakluyt, Richard. *The Discovery of Muscovy*. London: Cassel and Company Limited, 1904.

Hakluyt, Richard. *Voyages and Discoveries: The Principal Navigations Voyages, Traffiques and Discoveries of the English Nation*. Edited, abridged, and introduced by Jack Beeching. New York: Penguin Books, 1972.

Hamel, J. John Studdy Leigh, trans. *England and Russia: Comprising the Voyages of John Tradescant the Elder, Sir Hugh Willoughby, Richard Chancellor, Nelson, and others to the White Sea*. London: Frank Cass and Company Limited, 1854.

Hippocrates, "Air, Waters, Places," in *Hippocratic Writings*, ed. G.E.R. Lloyd. London: Penguin Books, 1978.

Hudson Bay Company Charter, 1670. http://www.hbcheritage.ca/things/artifacts/the-charter-and-text. Accessed 10/4/2018.

Isham, James. *Isham's Observations and Notes, 1743-1749*. E.E. Rich, ed. Toronto: The Champlain Society, 1949.

Isidore of Seville, *Etymologiae sive originum libri XX* Oxford: Oxford University Press, 1911.

Lake, Bibye. "Sir Bibye Lake to Arthur Dobbs, 16 December 1737," in William Barr and Glyndwr Williams, eds. *Voyages to Hudson Bay in Search of a Northwest Passage, 1741-1747. Volume 1: The Voyage of Christopher Middleton* 1741-1742. London: Hakluyt Society, 1994.

Mercator, Gerard. "A Letter Dated 1577 from Mercator to John Dee," in E.G.R. Taylor. "A Letter Dated 1577 from Mercator to John Dee." *Imago Mundi* 13 (1956): 56-68.

Middleton, Christopher. "A Journal of the Proceedings on board his Majesty's Ship Furnace Under my Command in a voyage for the Discovery of a Passage thro' Hudsons Bay to the South Sea (1741-1742)," in William Barr and Glyndwr

Williams, eds. *Voyages to Hudson Bay in Search of a Northwest Passage, 1741-1747*. Volume 1: The Voyage of Christopher Middleton 1741-1742. Hakluyt Society: London, 1994.

Middleton, Christopher. "An Observation of the Magnetic Needle being so affected by great Cold, that it would not Traverse, by Capt. Christopher Middleton, F.R.S." *Philosophical Transactions* 1737-1738 (40), 310-311.

Middleton, Christopher. "Captain Middleton to Admiralty Board, July 1743," in William Barr and Glyndwr Williams, eds. *Voyages to Hudson Bay in Search of a Northwest Passage, 1741-1747. Volume 1: The Voyage of Christopher Middleton* 1741-1742. London: Hakluyt Society, 1994.

Middleton, Christopher. "Captain Middleton to Arthur Dobbs, 18 January 1742 (OS)" in William Barr and Glyndwr Williams, eds. *Voyages to Hudson Bay in Search of a Northwest Passage, 1741-1747. Volume 1: The Voyage of Christopher Middleton* 1741-1742. London: Hakluyt Society, 1994.

Middleton, Christopher. "Captain Middleton to Arthur Dobbs, 21 January 1737." In William Barr and Glyndwr Williams, eds. *Voyages to Hudson Bay in Search of a Northwest Passage, 1741-1747. Volume 1: The Voyage of Christopher Middleton* 1741-1742. London: Hakluyt Society, 1994.

Middleton, Christopher. "Captain Middleton to Arthur Dobbs. 27 November 1742." In William Barr and Glyndwr Williams, eds. *Voyages to Hudson Bay in Search of a Northwest Passage, 1741-1747. Volume 1: The Voyage of Christopher Middleton* 1741-1742. London: Hakluyt Society, 1994.

Middleton, Christopher. "Captain Middleton to Arthur Dobbs. 5 November 1737." In William Barr and Glyndwr Williams, eds. *Voyages to Hudson Bay in Search of a Northwest Passage, 1741-1747. Volume 1: The Voyage of Christopher Middleton* 1741-1742. London: Hakluyt Society, 1994.

Middleton, Christopher. "Effects of the Cold; Together with Observations of the Longitude, Latitude, and Declination of the Magnetic Needle, a Prince of Wales's Fort, upon Churchill-River in Hudson's Bay, North America; By Capt. Christopher Middleton, F.R.S. Comander of his Majesty's Ship Furnace, 1741-2." *Philosophical Transactions* 42 (1742-1743): 157-171.

Moll, Herman. *A System of Geography: Or, A New and Accurate Description of the Earth In All its Empires, Kingdoms, and States.* London, 1701.

Montesquieu, Charles de Secondant, Baron de. *The spirit of laws. Translated from the French of M. de Secondant, Baron de Montesquieu*. Edinburgh, 1768.

Montesquieu, Charles de Secondat, Baron de. *De l'esprit des loix.* Paris, 1748.

Pallas, Peter Simon. *Travels Through the Southern Provinces of the Russian Empire, in the Years 1793 to 1794*. London: Printed for John Stockdale, Piccadilly, 1812.

Pennant, Thomas. *Arctic Zoology*. London: Printed by H. Hughs, 1784.

Pennant, Thomas. *British Zoology*. London: Printed for Benjamin White, at Horace's Head, Fleet-Street, 1768.

Pennant, Thomas. *Indian Zoology*. London: Printed by Henry Hughs, for Robert Faulder, 1791.

Pennant, Thomas. *Supplement to the Arctic Zoology.* London: Printed by Henry Hughs, 1787.

Pennant, Thomas. *The Literary Life of the Late Thomas Pennant.* London: Sold by Benjamin and John White, Fleet-Street, and Robert Faulder, New Bond Street, 1793.

Pontopiddan, Erich. *Natural History of Norway: containing a particular and accurate account of the temperature of the air, the different soils, waters, vegetables, metals, minerals, stones, beasts, birds, and fishes; together with the dispositions, customs, and manner of living of the inhabitants: interspersed with physiological notes from eminent writers, and transactions of academies.* London: A. Linde, 1755.

Robson, Joseph. *An Account of Six Years Residence in Hudson's-Bay, From 1733 to 1736, and 1744 to 1747.* London: Printed for J. Payne and J. Bouquet in Pater-Noster-Row; Mr. Kincaid, at Edinburgh; Mr. Barry, at Glasgow; and Mr. J Smith, at Dublin, 1752.

Scheffer, Johannes. *History of Lapland: containing Geographical Description, and a Natural History of the Country*. London: Printed for Tho Newborough, at the Golden-Ball in St. Paul's Church-Yard: And R. Parker under the Royal-Exchange, 1704.

Unknown. "Anonymous Letters to Arthur Dobbs, 2 January 1742 (OS) and n.d.," In William Barr and Glyndwr Williams, eds. *Voyages to Hudson Bay in Search of a Northwest Passage, 1741-1747. Volume 1: The Voyage of Christopher Middleton* 1741-1742. London: Hakluyt Society, 1994.

Von Troil, Uno. *Letters on Iceland, containing observations made in 1772 by Joseph Banks, assisted by Dr. Solander, J. Lind, Uno von Troil: To which are added the letters of Dr. Ihre and Dr. Bach concerning the Edda and elephantiasis of Iceland; also Professor Bergman's observations and chemical examination of the lava and other substances produced on the island*. London: Printed by and for W. Richardson, etc., 1780.

White, Gilbert. *Natural History and Antiquities of Selborne: with observations on various parts of nature and the naturalist's calendar*. London: G. Routledge and Sons, 1880

Worm, Ole. *Museum Wormianum, seu Historia Rerum Rariorum*. Lugduni Batauorum, Ex Officina Elseviriorum, Acad. Typograph., 1655.

Secondary Sources

Allen, David Elliston. "Natural history in Britain in the eighteenth century." *Archives of Natural History* 20 (1993): 333-347.

Alsford, Stephen, ed. *The Meta Incognita Project: Contributions to Field Studies*. Hull, Quebec: Canadian Museum of Civilization, 1993.

Arnold, David. *Science, Technology and Medicine in Colonial India*. Cambridge: Cambridge University Press, 2000.

Arnold, David. *The Tropics and the Traveling Gaze: India, Landscape, and Science, 1800-1856*. Seattle: University of Washington Press, 2006.

Babock, William H. *Legendary Islands of the Atlantic: A Study in Medieval Geography.* New York: American Geographical Society, 1922.

Barr, William and Glyndwr Williams, eds. *Voyages to Hudson Bay in Search of a Northwest Passage, 1741-1747. Volume 1: The Voyage of Christopher Middleton 1741-1742*. London: Hakluyt Society, 1994.

Berggren, J. Lennart and Alexander Jones. *Ptolemy's Geography: An Annotated Translation of the Theoretical Chapters*. Princeton University Press, Princeton, 2000.

Binnema, Ted. *Enlightened Zeal: The Hudson's Bay Company and Scientific Networks, 1670-1870*. Toronto: University of Toronto Press, 2014.

Bleichmar, Daniela. "Visible Empire: Scientific Expeditions and Visual Culture in the Hispanic Enlightenment." *Postcolonial Studies* 12 (2009): 441-466.

Bleichmar, Daniela. *Visible Empire: Botanical Expeditions and Visual Culture in the Hispanic Enlightenment*. Chicago: University of Chicago Press, 2012.

Bockstoce, John R. *Furs and Frontiers in the Far North: The Contest Among Native and Foreign Nations for the Bering Strait Fur Trade*. New Haven: Yale University Press, 2009.

Bowler, Peter. *Evolution: The History of an Idea, 25th Anniversary Edition*. Berkeley: University of California Press, 2009.

Burley, Edith I. *Servants of the Honourable Company: Work, Discipline, and Conflict in the Hudson's Bay Company, 1770-1870*. Oxford: Oxford University Press, 1997.

Campbell, Robert. *In Darkest Alaska: Travel and Empire Along the Inside Passage*. Philadelphia: University of Pennsylvania Press, 2007.

Carlos, Ann M. and Frank D. Lewis, "Native Americans and exchange: strategies and interactions before 1800." In *The Cambridge History of Capitalism, Volume 1: The Rise of Capitalism: From Ancient Origins to 1848.* (Cambridge: Cambridge University Press, 2012). pp.455-490.

Chakrabarti, Pratik. *Materials and Medicine: Trade, Conquest, and Therapeutics in the Eighteenth Century*. Manchester: Manchester University Press, 2010.

Clark, William, Jan Golinski, and Simon Schaffer, eds. *The Sciences in Enlightened Europe.* Chicago: University of Chicago Press, 1999.

Coleman, Jon T. *Vicious: Wolves and Men in America*. New Haven: Yale University Press, 2004.

Constantine, Mary-Ann and Nigel Leask, eds. *Enlightenment Travel and British Identities: Thomas Pennant's Tours in Scotland and Wales*. London: Anthem Press, 2017.

Constantine, Mary-Ann and Nigel Leask. "Introduction: Thomas Pennant, Curious Traveller," in *Enlightenment Travel and British Identities: Thomas Pennant's Tours of Scotland and Wales*, London: Anthem Press, 2017, 1-14/

Cook, Harold J. *Matters of Exchange: Commerce, Medicine and Science in the Dutch Golden Age.* New Haven: Yale University Press, 2007.

Cormack, Lesley B. *Charting an Empire: Geography at the English Universities, 1580-1620*. Chicago: University of Chicago Press, 1997.

Crouse, Nellis Maynard. *The Search for the Northwest Passage*. New York: Columbia University Press, 1934.

Davis, Mike. *Late Victorian Holocausts: El Niños, Famines, and the Making of the Third World*. New York: Verso, 2001.

Day, Alan Edwin. *Historical Dictionary of the Discovery and Exploration of the Northwest Passage.* Lanham: Scarecrow Press, 2006.

Day, Matthew. "Imagining Empire: Richard Hakluyt's *The Principal Navigations* (1598-1600) and the Idea of a British Empire," *Journeys* 3 (2002), 1-28: 17.

De Madariaga, Isabel. *Ivan the Terrible: First Tsar of Russia.* New Haven: Yale University Press, 2005.

De Vos, Paula. "Natural History and the Pursuit of Empire in Eighteenth-Century Spain," *Eighteenth-Century Studies* 40 (2007): 209-239.

Dear, Peter. "The Meanings of Experience," in Katharine Park and Lorraine Daston, eds. *The Cambridge History of Science: Volume 3, Early Modern Science*. Cambridge: Cambridge University Press, 2006: 106-131.

Dear, Peter. *Discipline and Experience: The Mathematical Way in the Scientific Revolution*. Chicago: Chicago University Press, 1995.

Diller, Aubrey. "The Parallels on Ptolemaic Maps," *Isis* 30 (1941): 4-7.

Drayton, Richard. *Nature's Government: Science, Imperial Britain, and the 'Improvement' of the World*. New Haven: Yale University Press, 2000.

Dugatkin, Lee Alan. *Mr. Jefferson and The Giant Moose: Natural History in Early America*. Chicago: University of Chicago Press, 2009.

Eco, Umberto. *The Book of Legendary Lands*, trans. Alastair McEwen. Rizzoli Ex Libris: New York, 2013.

Edwards, Elizabeth. "'A Galaxy of the Blended Lights': The Reception of Thomas Pennant." In Mary-Ann Constantine and Nigel Leask, eds. *Enlightenment Travel and British Identities: Thomas Pennant's Tours of Scotland and Wales*. London: Anthem Press, 2017: 140-159.

Evans, R. Paul. 'A Round Jump from Ornithology to Antiquity': The Development of Thomas Pennant's Tours," in *Enlightenment Travel and British Identities: Thomas Pennant's Tours of Scotland and Wales*, ed. Mary-Ann Constantine and Nigel Leask, (London: Anthem Press, 2017): 15-37.

Few, Martha. *For All of Humanity: Mesoamerican and Colonial Medicine in Enlightenment Guatemala.* Phoenix: University of Arizona Press, 2015.

Fuller, Mary. "Arctics of Empire" in Frederic Régard, ed. *The Quest for the Northwest Passage: Knowledge, Nation, and Empire, 1576-1806* (London: Pickering and Chatto, 2013), 15-29.

Golinski, Jan. *British Weather and the Climate of Enlightenment*. Chicago: University of Chicago Press, 2007.

Gordon, Eleanora C. "The Fate of Sir Hugh Willoughby and his Companions: A New Conjecture." *The Geographical Journal* 152 (1986): 243-247, 243;

Griffiths, Franklyn. *Politics of the Northwest Passage* Toronto: McGill-Queen's University Press, 1987.

Griffiths, Tom and Libby Robbin. *Ecology and Empire: Environmental History of Settler Societies.* Seattle: University of Washington Press, 1997.

Grove, Richard H. *Ecology, Climate and Empire: Colonialism and Global Environmental History, 1400-1940*. London: White Horse Press, 1997.

Grove, Richard H. *Green Imperialism: Colonial Expansion, Tropical Island Edens and the Origins of Environmentalism, 1800-1860*. Cambridge: Cambridge University Press, 1995.

Hamilton, Clayton M. "Sir Thomas Browne," *The Sewanee Review*, 11 (1903): 64-86.

Hawkes, Jane. 'Constructing Identities in the Eighteenth Century: Thomas Pennant and the Early Medieval Sculpture of Scotland and England'." In Mary-Ann Constantine and Nigel Leask, eds. *Enlightenment Travel and British Identities: Thomas Pennant's Tours of Scotland and Wales*. London: Anthem Press, 2017: 86-104.

Houston, Stuart, Tim Ball, and Mary Houston. *Eighteenth Century Naturalists of Hudson Bay*. Montreal: McGill-Queen's University Press, 2003.

Howell, Almonte C. "Sir Thomas Browne and Seventeenth-Century Thought." *Studies in Philology* 22 (1925): 61-80.

Howkins, Adrian. *The Polar Regions: An Environmental History*. London: Polity Press, 2016.

Hughes, Lotte and William Beinart. *Environment and Empire*. Oxford: Oxford University Press, 2007.

Hunter, Douglas. *The Place of Stone: Dighton Rock and the Erasure of America's Indigenous Past*. Chapel Hill: University of North Carolina Press, 2017.

Ishizuka, Hisao. "'Fibre Body': The Concept of Fibre in Eighteenth-century Medicine, c. 1700-41." Medical History 56 (2012): 562-584.

Ishizuka, Hisao. "The Elasticity of the Animal Fibre: Movement and Life in Enlightenment Medicine." History of Science 56 (2006): 435-468.

Jones, Ryan Tucker. A 'Havock Made among Them': Animals, Empire, and Extinction in the Russian North Pacific, 1741-1810. *Environmental History*, Vol. 16, No. 4 (October 2011), pp 585-609.

Jones, Ryan Tucker. *Empire of Extinction: Russians and the North Pacific's Strange Beasts of the Sea, 1741-1867*. Oxford: Oxford University Press, 2014.

Jørgensen, Dolly and Sverker Sörlin, eds. *Northscapes: History, Technology, and the Making of Northern Environments*. Vancouver: University of British Columbia Press, 2013.

Keating, Bern and Dan Guravich. *The Northwest Passage: from the Mathew to the Manhattan, 1497-1969.* Chicago: Rand McNally, 1970.

Ketchum, Robert Glenn. *Northwest Passage.* New York: Aperture, 1996.

Kimble, George H.T. *Geography in the Middle Ages*. New York: Russell & Russell, 1938.

King, M.D, Lester S. *The Philosophy of Medicine: the Early Eighteenth Century*. Cambridge: Harvard University Press, 1978.

Kirwan, L.P. *A History of Polar Exploration.* Harmondsworth, 1962.

Knoepflmacher, U.C. and G.B. Tennyson. *Nature and the Victorian Imagination*. Berkeley: University of California Press, 1977.

Knorr-Cetina, Karin. "Culture in Global Knowledge Societies: Knowledge Cultures and Epistemic Cultures," *Interdisciplinary Science Reviews* 32, 4 (2007): 361-375.

Koerner, Lisbet. *Linnaeus: Nature and Nation*. Cambridge: Harvard University Press, 2001.

Kupperman, Karen O. “Fear of Hot Climates in the Anglo-American Colonial Experience.” *William and Mary Quarterly* 41 (1984): 213-240.

Larson, James L. *Interpreting Nature: The Science of Living Form from Linnaeus to Kant.* Baltimore: Johns Hopkins University Press, 1994.

Lemercier-Goddard, Sophie and Frederic Regard, “Introduction: The Northwest Passage and the Imperial Project: History, Ideology, Myth” in Regard, Frederic, ed. *The Quest for the Northwest Passage: Knowledge, Nation, and Empire, 1576-1806*. London: Pickering and Chatto, 2013.

Levere, Trevor H. *Science and the Canadian Arctic: A Century of Exploration, 1818-1918*. Cambridge: Cambridge University Press, 1993.

Livingstone, David. N. *The Geographical Tradition: Episodes in the History of a Contested Enterprise*. Oxford: Blackwell, 1992.

Loomis, Chauncey C. “The Arctic Sublime,” in U.C. Knoepflmacher and G.B. Tennyson, eds. *Nature and the Victorian Imagination*. Berkeley: University of California Press, 1977: 95-112.

Lopez, Barry. *Arctic Dreams: Imagination and Desire in a Northern Landscape.* Vintage Books: New York, 1986.

MacMillan, Ken, and Jennifer Abeles, eds. *The Limits of the British Empire.* Praeger: Westport, Connecticut, 2004.

MacMillan, Ken. *Sovereignty and Possession in the English New World: The Legal Foundations of Empire, 1576-1640*. Cambridge: Cambridge University Press, 2006.

Mancall, Peter C. “The Raw and the Cold: Five English Sailors in Sixteenth-Century Nunavut.” *The William and Mary Quarterly*, Vol. 70, No. 1 (January 2013): 3-40.

Mancall, Peter C. *Fatal Journey: The Final Expedition of Henry Hudson*. Basic Books: New York, 2010.

Mancall, Peter C. *Hakluyt’s Promise: An Elizabethan’s Obsession for an English America*. New Haven: Yale University Press, 2007.

Martin, Calvin. *Keepers of the Game: Indian-Animal Relationships and the Fur Trade*. Berkeley: University of California, 1978.

Mazzoco, Angelo. *Interpretations of Renaissance Humanism.* Leiden: Brill, 2006.

McCook, Stuart. *States of Nature: Science, Agriculture, and Environment in the Spanish Caribbean, 1760-1940*. Austin: University of Texas Press, 2002.

Moodie, D.W. "Science and Reality: Arthur Dobbs and the eighteenth-century geography of Rupert's Land." *Journal of Historical Geography* 2 (1976): 293-309.

Officer, Charles and Jake Page. *A Fabulous Kingdom: The Exploration of the Arctic*. Oxford: Oxford University Press, 2001.

Oslund, Karen. *Iceland Imagined: Nature, Culture, and Story-Telling in the North Atlantic*. Seattle: University of Washington Press, 2011.

Parrish, Susan Scott. *American Curiosity: Cultures of Natural History in the Colonial British Atlantic World*. Chapel Hill: University of North Carolina Press, 2006.

Pyne, Stephen J. *The Ice: A Journey to Antarctica*. Seattle: University of Washington Press, 1986.

Ragland, Evan. *Experimental Life: Science, Medicine and Philosophy in Seventeenth-Century Leiden*. Forthcoming 2019.

Randles, W.G.L. *The Unmaking of the Medieval Christian Cosmos, 1500-1760: From Solid Heavens to Boundless Aether*. Ashgate: Aldershot, 1999.

Ray, Arthur J. *Indians in the Fur Trade: their role as trappers, hunters, and middlemen in the lands southwest of Hudson Bay, 1660-1870*. Toronto: University of Toronto Press, 1974.

Regard, Frederic, ed. *The Quest for the Northwest Passage: Knowledge, Nation, and Empire, 1576-1806*. London: Pickering and Chatto, 2013.

Reill, Peter Hans. *Vitalizing Nature in the Enlightenment.* Berkeley: University of California Press, 2005.

Rich, E.E. *History of Hudson's Bay Company, 1670-1870.* London: The Hudson's Bay Record Society, 1959.

Richards, John F. "The Columbian Exchange: West Indies," in *The Unending Frontier, An Environment History of the Early Modern World.* Berkeley: University of California Press, 2003: 309-333.

Richards, John F. “The Hunt for Furs in Siberia” in *The Unending Frontier: An Environmental History of the Early Modern World*. Berkeley: University of California Press, 2003: 517-546.

Richards, John F. “Whales and Walruses in the Northern Oceans.” *The Unending Frontier: An Environmental History of the Early Modern World*. Berkeley: University of California Press, 2003.

Richards, Paul. “Kant’s Geography and Mental Maps*.” Transactions of the Royal Institute of British Geographers* 61 (1974): 1-16.

Robinson, Michael F. *The Coldest Crucible: Arctic Exploration and American Culture.* Chicago: University of Chicago Press, 2006.

Romm, James S. *The Edges of the Earth in Ancient Thought: Geography, Exploration, and Fiction*. Princeton: Princeton University Press, 1992.

Sainson, Katia. “Revolutions in Time: Chateaubriand on the Antiquity of the Earth.” *French Forum* 30 (2005), 47-63.

Sarson, Steven. *British America, 1500-1800: Creating Colonies, Imagining An Empire*. London: Hodder Arnold, 2005.

Schiebinger, Londa. *Plants and Empire: Colonial Bioprospecting in the Atlantic World*. Cambridge, MA: Harvard University Press, 2004.

Schmitt, Charles B. “Experience and Experiment: A Comparison of Zabarella’s View with Galileo’s in *De Motu*,” *Studies in the Renaissance* 16 (1969): 86–87.

Seth, Suman. *Difference and Disease: Medicine, Race, and Locality in the Eighteenth-Century British Empire. Cambridge: Cambridge University Press*, forthcoming 2019-2020.

Shapin, Steven. *The Scientific Revolution*. Chicago: University of Chicago, 1998.

Slezkine, Yuri. “Naturalists Versus Nations: Eighteenth-Century Russian Scholars Confront Ethnic Diversity.” *Representations* 47 (1994): pp. 170-195.

Soluri, John. “Seals and Seal Hunters along the Patagonian Littoral, 1780-1960.” In Martha Few and Zeb Tortorici, eds. *Centering Animals: Writing Animals in Latin American History*. (Durham: Duke University Press, 2013).

Sörlin, Sverker. “Greening the Great White: Encounters of Knowledge and Environment – and the Northern Turn in the History of Science,” Distinguished Lecture. History of Science Society Meeting. Toronto. November 9, 2017.

Speck, Gordon. *Samuel Hearne and the Northwest Passage*. Caldwell, Idaho: Caxton Printers, Ltd, 1963.

Sponsel, Alistair. “An Amphibious Being: How Maritime Surveying Reshaped Darwin’s Approach to Natural History.” *Isis* 107 (2016): 254-281.

Spufford, Francis. *‘I may be some time:’ Ice and the English Imagination*. London: Faber and Faber, 1996.

Stout, Felicity Jane. ‘The countrey is too colde, the people beastly be’: Elizabethan Representations of Russia.” *Literature Compass* 10/6 (2013): 483-495.

Stout, Felicity Jane. *Exploring Russia in the Elizabeth Commonwealth: The Muscovy Company and Giles Fletcher, the elder (1546-1611*). Manchester: Manchester University Press, 2015.

Stuhl, Andrew. *Unfreezing the Arctic: Science, Colonialism, and The Transformation of Inuit Lands*. Chicago: University of Chicago Press, 2016.

Taylor, E.G.R. “A Letter Dated 1577 from Mercator to John Dee.” *Imago Mundi* 13 (1956): 56-68.

Terrall, Mary. *The Man Who Flattened the Earth: Maupertuis and the Sciences in the Enlightenment*. Chicago: Chicago University Press, 2002.

Tilley, Helen. *Africa as a Living Laboratory: Empire, Development, and the Problem of Scientific Knowledge, 1870-1950*. Chicago: Chicago University Press, 2011.

Tombs, Robert. *The English and their History*. New York: Alfred A. Knopf, 2014.

Urness, Carol, ed. *A Naturalist in Russia: Letters from Peter Simon Pallas to Thomas Pennant.* Minneapolis: University of Minnesota Press, 1967.

Vaughan, Richard. “The Arctic in the middle ages,” *Journal of Medieval History* 8 (1982), 313-342.

Wallace, Karl R. *Francis Bacon on the Nature of Man: The Faculties of Man’s Soul*. Urbana: University of Illinois Press, 1967.

Warkentin, Germaine and Carolyn Podruchny. *Decentring the Renaissance: Canada and Europe in Multidisciplinary Perspective, 1500-1700*. Toronto: University of Toronto Press, 1996.

Weeks, Sophie. "The Role of Mechanics in Francis Bacon's Great Instauration," in Claus Zittel, Gisela Engel, Romano Nanni, and Nicole C. Karafyllis, eds. *Philosophies of Technology: Francis Bacon and His Contemporaries*, (Leiden: Brill, 2008), 135.

West, Elliot. *The Contested Plains: Indians, Goldseekers, and the Rush to Colorado.* Lawrence: University of Kansas Press, 1998.

White, Richard. *The Middle Ground: Indians, Empires, and Republics in the Great Lakes Region, 1650-1814*. Cambridge: Cambridge University Press, 1991.

Wilde, C.B. "Matter and Spirit as Natural Symbols in Eighteenth-Century British Natural Philosophy," *The British Journal for the History of Science* 15 (1982): 99-131.

Williams, Glydnwr. "Arthur Dobbs and Joseph Robson: New Light on the Relationship between Two Early Critics of the Hudson's Bay Company." *The Canadian Historical Review* (1959) 40: 132-136.

Williams, Glyndwr. *The British Search for the Northwest Passage in the Eighteenth Century*. London: Royal Commonwealth Society by Longmans, 1962.

Wilson, Eric. *The Spiritual History of Ice: Romanticism, Science, and the Imagination*. New York: Palgrave-MacMillan, 2003.

Wolfe, Patrick. "Settler Colonialism and the Elimination of the Native," *Journal for Genocide Research* (2006) 8: 387-409.

Wolfe, Patrick. *Settler Colonialism and the Transformation of Anthropology: The Politics and Poetics of an Ethnographic Event*. Cassell: London, 1999.

Wood, Paul B. "The science of man," in N. Jardine, J.A. Secord, and E.C. Spary, eds., *Cultures of Natural History*. Cambridge: Cambridge University Press, 1996. 197-210.

Wystrach, V.P. Anna Blackburne (1726-1793) – a neglected patroness of natural history," *Journal for the Society of Bibliographic Natural History* 8, 2 (1977): 158-168.

Yale, Elizabeth. *Sociable Knowledge: Natural History and the Nation in Early Modern Britain*. Philadelphia: University of Pennsylvania Press, 2016.

Yerbury, J.C. *The Subarctic Indians and the Fur Trade, 1680-1860*. Vancouver: University of British Columbia Press, 1986.

Zilberstein, Anya. "Objects of Distance Exchange: The Northwest Coast, Early America, and the Global Imagination." *The William and Mary Quarterly* 64 (2007): 591-620.

Zilberstein, Anya. *Temperate Empire: Making Climate Change in Early America*. Oxford: Oxford University Press, 2016.