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## **“The True North Strong and Choked with Ice”?** **History, Nordicity and Environmental Change in Canada**

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### **Zusammenfassung**

*Die Überschrift verbindet Worte eines Dichters, Al Purdy, mit denen eines Wissenschaftlers, Louis-Edmond Hamelin. Die Kanadier haben sich immer auf sehr unterschiedliche Weise mit dem allernördlichsten Teil ihres Landes auseinandergesetzt. Ob als gefrorenes Bollwerk, als Grenzgebiet, als Lebensraum oder Heimat, als strategischer Raum oder Laboratorium – der Norden hat die Kanadier immer beschäftigt und ihre Erfindungskraft herausgefordert. Besonders in den letzten fünf Jahrzehnten haben sich im Norden tiefe Veränderungen vollzogen. Das Land, das Purdy treffend, wenn auch ungenau als „nördlich vom Sommer“ verortete und das Hamelin durch sorgfältige Berechnungen zu definieren unternahm, steht heute wegen des Klimawandels im Zentrum besorgter Aufmerksamkeit. Die Bewohner des Nordens erleben eine deutliche Veränderung ihres Lebensraums, und zwar mit negativem Vorzeichen. Das ist wohl nicht zu leugnen; indes muss man erkennen, dass Umweltveränderungen eine lange und komplexe Geschichte haben und dass die Einschätzung ihrer Ursachen und Folgen bis zu einem gewissen Grad unvermeidlich subjektiv ist.*

### **Résumé**

*Le titre reprend et combine les mots d'un poète, Al Purdy, et ceux d'un scientifique, Louis-Edmond Hamelin. Depuis toujours, les Canadiens se sont intéressés de différentes façons au point le plus septentrional de leur pays. Que ce soit comme bastion de glace, comme territoire frontalier, comme habitat ou comme patrie, comme espace stratégique ou comme laboratoire, le Nord a toujours fasciné les Canadiens et encouragé leur inventivité. Or, au cours des cinq dernières décennies, le Nord a été le théâtre de graves transformations. Le pays que Purdy situait, de façon pertinente bien qu'imprécise "au nord de l'été" et que Hamelin entreprit de définir à force de calculs soigneux fait aujourd'hui l'objet, en raison des changements climatiques, de préoccupations majeures. Les habitants du Nord voient leur habitat se transformer, ne laissant présager rien de bon. Cela est indéniable. Néanmoins, il faut reconnaître que l'histoire des changements climatiques est longue et complexe et que toute tentative d'en expliquer les causes et les conséquences demeure inévitablement subjective.*

“The North” – whether we think instinctively of the Canadian North, the European North or the Circumpolar North when we hear that phrase – is, for most of us, a place beyond experience. Yet images of this/these territories spring quickly to mind. “The North” is vast, wild, cold, forbidding. Tundra, permafrost, glaciers and icebergs, and perhaps – if we are particularly interested or knowledgeable – pingos and patterned ground are its main geomorphological features. Ptarmigan, Arctic foxes, seals, reindeer, caribou and polar bears, those iconic (and, in the United States at least, officially endangered) polar bears, roam its barren expanse, and swim amid its ice floes, easily visible in a landscape vegetated only for a few short months, and then only by lichens, dwarf willow (*Salix herbacea/ arctica/ polaris*), saxifrage (*Saxifraga spp*), Arctic bell heather (*Cassiope tetragona*), potentilla (*Potentilla chamissonis*), the Lapland buttercup (*Ranunculus lapponicus*), and in parts of Greenland and Norway the beautiful Svalbard poppy (*Papaver dahlianum*).

This is the territory *North of Summer* of which the young Canadian Al Purdy dreamed as a child growing up in Trenton, Ontario, in the 1920s and that he found, much as he expected, in the 1960s, when he described the area around Pangnirtung in quintessential Canadian terms as “The true north strong and choked with ice.” Little wonder, after four decades of anticipation, that he revelled in the opportunity to “drift with the tides on Cumberland Sound and its blue fiord,” and to marvel at the fact that “bergs and growlers” ranging in size “from bucket sized ice cubes too large for a martini,” to hundreds of feet across, “are always in sight, even at the height of summer.” Purdy’s *Poems from Baffin Island*, published in the centenary year of Canadian Confederation, chart a passage from centre to periphery, from Montreal to Cumberland Sound, from cultural familiarity to the edge of the world. This journey places the adventurous poet in a land “north of the treeline south of the pole,” where “Ice castles drift by in the sunlight/ blue and turquoise magic/ moulded and shaped by water”. Purdy was certain that he could never “mistake the place for Toronto or Montreal.” Baffin Island was “a place of empty loneliness, an island born long ago when mountains were coming to birth.” Yet there were people here: “an Eskimo official greeter” and a “noble Eskimo youth” and, surprise among surprises, “Trees at the Arctic Circle.” This was not *Ca nada* (in Portuguese: the place where nobody is), but it was perhaps an echo of Martin Frobisher’s characterization of the Arctic in the sixteenth century as *Meta Incognita*, a place of absolute otherness, beyond the limits of the known and unknown.<sup>1</sup>

Purdy’s Baffin Island – and by extension the “ice-choked true north” – is indeed a land beyond, beyond the physical acquaintance of most the 99.7 percent of Canadians who live south of the 60<sup>th</sup> parallel – although regular winter struggles with markedly sub-zero temperatures, remind even the 75 percent of Canadians who huddle within 160 kilometres of the American border that they live in the shadow of that global refrigerator, the North Pole. The figures tell us that a mere 104,000 peo-

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1 Purdy 1967, 41, 40, 44, 22, 29-30; Dickenson 1998, 137-139. See also Jozic n.d.

ple live in those far northern regions “north of sixty,” and that 40 percent of them live in Whitehorse and Yellowknife, which leaves precious few for the rest of that great expanse constituting 40 percent of the second-largest country on earth. In the lives, travels, and “personal geographic referents,” of most Canadians, claims my UBC colleague Michael Byers, “our vast Arctic spaces simply do not exist. They constitute a collective, national blind spot.”<sup>2</sup> Except, perhaps, in December, when according to Canada Post, letters may be sent to Santa Claus at the postal code H0H 0H0, and many are. But I suspect that Dr. Byers might find ironic delight in this charming deception that has temporary employees of the Crown Corporation sending heart-warming responses to hopeful children from desks in the central post offices of Canada’s southern cities.

Rather like those letters from Santa, however, none of this is quite what it seems. Simply put, Byers is concerned about Canadians’ “collective national blind spot” because the north is no longer as “ice-choked” as it was in Purdy’s day. “Until very recently,” he writes, the spaces between the nineteen thousand islands scattered across Canada’s High Arctic “were choked with thick, hard, multi-year sea ice, fusing the archipelago into a triangular mass that was three thousand kilometres wide at its base and stretched to within nine hundred kilometres of the geographic North Pole.” In circumpolar total there was probably over 5 million square kilometres of sea ice in Purdy’s day. Estimates for the last couple of years place the total at about 4.13 million. Evocative as they are, however, Purdy’s *North of Summer* poems are not, and never were intended as a documentary account of the North, despite the A.Y. Jackson sketches and the prose postscript and explanatory notes that accompanied their publication, and we should not take them as such. Indeed John van Rys of the English department of Redeemer University College in Ontario has argued intriguingly, and I think convincingly, that Purdy’s poetic pilgrimage to Baffin Island offers a vision of “a Bakhtinian carnival world” embracing “both hell and paradise.” In this reading, “the volume is filled with forms and tropes deriving from carnival culture as Bakhtin describes it.” It offers a “serio-comical vision of the world,” in which “truths are played with by comical madness,” and it redefines “the official view of the Canadian Arctic ... from the perspective of its parodic and profane underside.”<sup>3</sup> We need to be cautious and critical in drawing inferences from our sources. By the same token, it is hard to accept that “our vast Arctic spaces” are not on the minds of Canadians when rarely a week goes by without stories in the news media (many of them quoting Dr. Byers himself) about one or another aspect – political, ecological, geographical, legal, sociological, anthropological and so on – of the north. Change is the refrain of these stories as much as it was the mantra of new President Barack Obama’s campaign speeches. And, of course, climate change, or global warming is the common denominator in almost all of them. Global change is one of the “Big

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2 Byers 2007.

3 van Rys 1990.

Stories" of our times. It is redirecting research programs and scholarly interests, and has captured the public imagination. Some would say it has added a sense of urgency and a moral imperative to inquiry. And the Arctic, and more broadly the north, are front and centre in these developments. A Greenpeace news release puts the story most succinctly: "The Arctic ice pack is melting. A large body of recent scientific evidence now verifies what was once science fiction speculation set in an indefinite future."<sup>4</sup> The picture is complex and far from encouraging, because in this Greenpeace version the world faces: "... warming Arctic landmasses; declining sea ice area, extent and thickness; decreasing salinity; and major changes in Arctic and North Atlantic air and ocean circulation." Through intricate feedback mechanisms, modelled in powerful computers, this Arctic warming threatens to become a melt-down that could disrupt the Gulf Stream and the Great Ocean Conveyor, destabilize the entire global climate system and undermine the circumstances of life on earth as we know them.<sup>5</sup> Melting ice will change the world; the Arctic is "the canary in the coalmine"; the North is the centre of our attention and the focus of our anxieties.<sup>6</sup>

There can be no doubt that the situation is serious. Acknowledging this, I want to take this opportunity to reflect a little on the place of the north as a geographical entity and in the popular imagination, in an effort to situate current concerns – the attentions and anxieties I have just alluded to – against a broader canvas. I seek to provoke reflection. My goal is not to provide answers but to outline *some* of the ways in which the north has figured in Canadian scholarship, to wonder whether and how the particular shape of current interest in the north is inflected by the pervasive discourse of global warming, and to ask whether there might be some value in thinking about the north, the Arctic, and climate change in ways somewhat different from those that have tended to dominate our thinking in the past.

Historian W.L. Morton once argued that Canada was understood as north from its earliest European discovery. But he also identified something paradoxical in this. Was it not odd, he reflected, "That the ultimate and the comprehensive meaning of Canadian history is to be found where there has been no Canadian history, in the north"?<sup>7</sup> This seeming absurdity can be brought in hand by recognizing, as my colleague Sherrill Grace demonstrated in her 2001 book, that Canada and Canadians, have had a long and tremendously rich engagement with "the *idea* of North." As she describes the fundamental premise of her study, it is that "no matter who, when, or where we [Canadians] are, we are shaped by, haunted by ideas of North and we are constantly imagining and constructing Canada-as-North."<sup>8</sup> Following Michel Foucault, but drawing other, applied, theorists to her cause as she seeks to chart the

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4 Greenpeace.

5 Weaver 1995, 135-136; Rahmstorf 1995, 145-149.

6 Leahy; Jowit 2009.

7 Morton 1970.

8 Grace 2001, xii. See also Davidson 2005.

discursive formation of North, Professor Grace ranges widely, to consider maps, photographs and paintings of the North, to reflect on representations of North in music, theatre and film and to provide space for indigenous voices raised against the dominant discourse of the north as a place of romance, danger and challenge beyond history. The result is a profligate feast indeed: to range through the pages of *Canada and the Idea of North* is to encounter, among many others, painters William Blair Bruce, Lawren Harris, Jack Shadbolt and Jin-Me Yoon; playwrights Herman Voaden and Tomson Highway; novelists Aritha van Herk and Rudy Wiebe, musicians R. Murray Schafer and Glenn Gould, and even Sergeant Preston and “Nelvana of the Northern Lights”, an immortal female goddess-protector of the North, capable, so the 1940s comic books that recounted her exploits tell us, of travelling at the speed of light on the Aurora borealis. From all of this there emerges a strong sense of what Stephen Leacock described as the “peculiar mental background’ conferred upon Canadians by “the vast unknown country of the North, reaching away to the polar seas.”<sup>9</sup> Sherrill Grace readily acknowledges the influence of Glenn Gould’s *Idea of North* on her own thinking and it is clear that she is quite as intrigued as the pianist was “by that incredible tapestry of taiga and tundra country” that lies hard by the attenuated ribbon of southern Canadian settlement. Yet her focus is understandably and legitimately upon constructions and representations, on ideas of North, those “splendid and indestructible” ideas that R. Murray Schafer saw as constituting a Canadian myth upon which the survival of the country depended, rather than upon the buzzing, howling, freezing, forbidding material reality of northern latitudes. I know, from the experience of co-teaching a graduate course on the North with her, that Dr. Grace would not “say for a moment that there is no actual geographical north” but she is well aware that “even our best geographers have struggled to define it.”

Foremost among those “struggling geographers” – although he had more success than most – was Louis-Edmond Hamelin. He was concerned – in a way that Sherrill Grace, Stephen Leacock, Glenn Gould and many others have not been – that there was a great deal of ignorance and misconception in most Canadians’ views of the north. To them, he said, the region was “a stranger”, an “unknown quantity,” an ill-defined concept and poorly understood place. The idea of north was, if you will, a balloon into which everyone seemed to blow their own meaning. Although Canadians experience the influence of the north, Hamelin wrote, “they do not know what it is, how far it extends, how it may be subdivided, or what its future may be ...” In an effort to remedy this, as Daniel Chartier has shown, he spent a large part of his career attempting to define and demarcate the north, logically and “scientifically,” and his efforts gave the world both the concept of “Nordicity” and the VAPO index. In Hamelin’s design, degrees of northern-ness were calibrated on a hundred-point scale (with the 100 value defined by conditions at the North Pole) for ten indicators:

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9 Leacock 1957, 212-13. See also for another overview, Hulan 2003.

latitude, summer and annual temperatures, ice types, precipitation, vegetation, the availability of air and other transportation services, population and economic activity. Summing these scores then yielded a total – *Valeurs polaires* or VAPO – of 1000 for the Pole. Any place with a score greater than zero exhibited some degree of “Nordicity” and intermediate points on the scale allowed Hamelin to map areas that he designated Extreme North (>800), Far North (501-800), Middle North (200-500) and Near North (>0 to <200). Lines on maps presented neat boundaries between these zones, but Hamelin was ever-conscious that the north was changing and that his analysis needed to accommodate this: “while a compass indicates that North is a fixed point,” he wrote in 1975, “a geographic perspective shows that the North is a living, continually changing entity ... a shifting reality.”<sup>10</sup> In other words, VAPO scores could change over time, not least in response to human activity, say with the rise and demise of economic activity (such as a mine) or the introduction, improvement or withdrawal of transportation linkages. More generally, the spread of settlement, technological development and climate change have decreased the severity of conditions and reduced the effects of cold and inaccessibility, particularly over the past century, producing “denorthification” and a retreat of the north. Still, by Hamelin’s reckoning in the 1960s and 1970s, almost all parts of Canada exhibited some degree of nordicity. In fact, Hamelin’s systematic formulation led him to point out that Quebec is the most northern province in Canada and that (despite its location on the same latitude as Marseilles) Montreal marks the southernmost extension of Arctic influences in the world.<sup>11</sup> Canadians – and particularly Canadiens – were indeed a Northern people.

One might suspect that Hamelin was obsessed by the challenge of quantifying analyses and calibrating measures of nordicity. As Daniel Chartier has pointed out, he developed an extensive glossary of specialized terms in the course of his work; “nordicity” alone spawned over 200 related terms.<sup>12</sup> Yet in the end Hamelin was forced to recognize that “what we think of the North may stem more from the imagination than from measurable reality.”<sup>13</sup> Are we, like travellers across Arctic ice, beginning to see a wide lead opening before us here, an ice-flecked passage of more-or-less open and forbidding water between Grace’s “art” and Hamelin’s “science”? Their different approaches to the concept of North appeal to different sensibilities and give us very different senses of the territory. Although Hamelin insisted that his concept of nordicity embraced the human and cultural as well as the material and scientific aspects of circumstances in the north – “comprehensive nordicity,” he averred, “refers to systems of thought, knowledge, vocabularies, intercultural know-how, arts and humanities sensibilities, expressions of opinion, [and] applica-

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10 Hamelin 2002 ; Hamelin 1975, 121. Quotation in translation (and other observations on Hamelin) from Chartier 2006. On Hamelin and this point more generally, see also Graham 1990.

11 Hamelin 1988, 22; Hamelin 1999.

12 Hamelin, *Discours du Nord*, Québec, Université Laval, GÉTIC, 2002, p. 13, quoted in Chartier 2006.

13 Hamelin 1974, 188-191.

tion in territorial, political and economic fields," – his index numbers and isolines never seem to capture and represent "the state, degree, awareness and representation of cold territoriality in the northern hemisphere" with the vivid, visceral immediacy exhibited in the work of so many artists.<sup>14</sup> I think here, by way of example, of the arresting mask produced by Don Proch and reproduced in *Canada and the Idea of North* and of Elizabeth Hay's brief, understated but immensely effective characterization of Yellowknife in the 1970s in her *Late Nights on Air*. Two-hundred and fifty words and one is transported in time and space into "a rudimentary place of ten thousand people ... [that was] in many ways a white blot on the native landscape ... as far north as most southerners had ever come."<sup>15</sup>

As far north as most southerners had ever come! This deceptively simple phrase (with its echoes of W.L. Morton's paradox) might help us to comprehend this "gap" between science and art, and to understand why it had not been much bridged even in 1970, when Morton lamented that "the North is yet to be integrated into the historiography of Canada."<sup>16</sup> *Social scientists* – anthropologists, archaeologists, ethnographers – *scientists* – botanists, geologists, ornithologists, zoologists – *adventurers, journalists and surveyors, geographers* [who fell into all three of the above categories] and a few *poets and painters* visited and wrote of the north with increasing frequency after the Second World War, when American and Canadian security considerations brought a surge of southern engagement with northern spaces. But a thinly-peopled place, largely out of southern sight before 1940, was also a place out of the minds of most historians writing about the experiences rather than the imaginings, the deeds rather than the ideas of their predecessors as "Canadians". Indeed, one of Canada's leading students of the north, Shelagh Grant, has identified Leslie Neatby's *In Quest of the North West Passage*, published in 1958, as the first Arctic history book written by a Canadian scholar. It was followed, early in the 1960s, by Glyndwr Williams' *The British Search for the Northwest Passage in the Eighteenth Century*, and T.J. Oleson's *Early Voyages and Northern Approaches, 1000-1632* – all three of which are clearly about long ago "foreign" adventurers, and which were written respectively by a retired professor of Classics, an English historian of exploration, and a Manitoba-born medieval historian. Remarkably, as the doyen of Canadian Studies Professor T.H.B. Symons pointed out, less than 2% of the grants awarded by the Social Science and Humanities Research Council (and its predecessor) during the 1970s were for northern research. Anthropologists, archaeologist and linguists took most of those awards; only five went to students of northern history.<sup>17</sup>

Intellectual historian Janice Cavell has argued, recently, that this "ingrained indifference to northern matters" should not be surprising. By her account, most nine-

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14 Hamelin 2002, 4-5.

15 Hay 2007, 6-7.

16 Morton 1970, 40.

17 Symons 1981, 327-8.

teenth-century Canadians “did not see the Arctic as part of Canada at all.”<sup>18</sup> Their conceptions of the emerging country were framed by a commitment to rural settlement and east-west expansion, an agrarian rather than a northern mythology that led them to think of Canada swelling from sea to shining sea, rather than as a country flanked by three oceans, extending, as modern-day politicians have it, from sea to sea to sea. Here we should remember that when George Dawson of the Geological Survey of Canada published a map “Showing the Larger Unexplored Areas” of the country in the 1890s, it identified sixteen extensive territories that encompassed all of the country north of 55 degrees, as well as substantial areas south of this between Winnipeg and the Labrador coast.<sup>19</sup> These were, in the general parlance of the day (far less nuanced than Hamelin’s), simply the “Barren Grounds”. According to American sportsman Caspar Whitney, who trudged 2800 miles on snow shoes through this “most complete and extended desolation on earth” hunting Musk-Oxen and Wood-Bison in the last decade of the nineteenth century, the territory was “a timberless waste where the ice-laden blasts blow with hurricane and ceaseless fury ...; where rock and lichen and moss replace soil and trees and herbage; and where death by starvation or freezing dogs the footsteps of the explorer.”<sup>20</sup> Historians writing of the British North American or Canadian experience found little apart from heroic tales of exploration in these bleak expanses to attract and hold their attention.

In the last two or three decades, however, as the Arctic Ocean has gained new importance as a resource and political frontier as well as a bellwether of global warming, and the north has become more integrated, physically and intellectually with the south, new cohorts of historians (and others) have turned their attentions northward. Their scholarship has done much to sharpen, refine and remake Whitney’s depiction of the north as an austere wasteland. The earliest of these histories were fairly traditional in their focus on exploration, economic development, politics and public policy, but they were soon complemented by work on the northern fur trade and a series of studies exploring the social and other consequences of European contact for indigenous peoples as well as specialized studies of such topics as the building of the Alaska Highway and so on.<sup>21</sup> Yet more recently, a handful of young historians have begun to publish important work exploring the interactions of peoples and environments in the north and it is to a few of their thought-provoking books in environmental history that I would now turn, briefly. Specifically, I notice Greg Gillespie’s *Hunting for Empire*, John Sandlos’s *Hunters at the Margin*,

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18 Cavell 2002, 364-89.

19 See Pike 1892, which includes as an appendix the map by G.M. Dawson, *On some of the larger unexplored regions of Canada*.

20 Whitney 1896, 1.

21 For an assessment in “mid-flight” here see: Hodgins/Grant 1986. Also for comparison: Coates 1994; Coates/Morrison 1985; Senkpiel/Easton 1988.

Hans Carlson's *Home is the Hunter*, and Liza Piper's *The Industrialization of sub-Arctic Canada*, four books published in the last two years by UBC Press.<sup>22</sup>

As their titles indicate, the books by Gillespie, Sandlos and Carlson each have something to do with hunting, but they are very different studies of very different topics. Gillespie's hunters are British, male and upper class and they ranged across the western interior of Rupert's Land (the HBC territory) in search of big game between 1840 and 1870. Sandlos's hunters are Dene and Inuit, indigenous peoples of the sub-Arctic and Arctic, whose traditional reliance upon wood bison, muskox and caribou brought them into conflict with government bureaucrats intent on implementing policies for the conservation of those animals early in the twentieth century. And Carlson's hunters are the James Bay Cree whose complex, shifting relationship to the land and all it contained he traces through the years leading up to the hotly-debated and intensely disruptive development of the James Bay hydroelectric scheme in the 1970s. All of these books offer fresh and compelling insights, to which it is impossible to do full justice here, but let me note the following:

Gillespie's history is deeply inflected by his commitment to the epistemological foundations of cultural analysis and his study is, in the end, a study of texts and what they reveal of their creators rather than an account of the western interior. It is about ideas rather than places, about the world of the imagination rather than "geographic realities", but it provides a powerful reminder that nineteenth-century British hunters, explorers, and agents of empire were (just as those who seek to understand unfamiliar settings more generally are), engaged in "domesticating the exotic" (to borrow a phrase from English historian David Cannadine) – in "comprehending and ... reordering ... the foreign in parallel, analogous, equivalent [and] resemblant terms."<sup>23</sup> This is a complex, contingent, ever-shifting process of reducing the strangeness of the new. *Recognizing this reminds us of the contingent and unsettled qualities of our ideas about things and of our constructions of the world.*

Sandlos demonstrates – as others have for other times and places – that quickening economic development posed a serious threat to wildlife in the Canadian north as hunting pressures increased with an influx of people and new markets for meat and hides encouraged native hunters to larger kills in new territories. He is also mindful that human impacts on northern environments precipitated poorly-understood ecological changes that cascaded through northern ecosystems. This, he shows us, opened the way to radically different interpretations of the causes of crises and the embrace of vastly different strategies to address them. In this context it becomes clear that efforts to protect animals were bound up with broader colonial initiatives and that wildlife conservation strategies were forms of "institutionalized social control over indigenous people" as much as they were a response to declining big game populations. *Recognizing this reminds us that the extension of*

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22 Gillespie 2007; Sandlos 2007; Carlson 2008; Piper 2008.

23 Cannadine 2001.

*influence and authority (ideas) over hinterland territories is often a messier and more variable process (in reality) than homogenized and simplified management schemes make it out to be.*

Carlson presents the historical, cultural and environmental contexts upon which Quebec's "project of the [twentieth] century"; the James Bay hydroelectric scheme, was imposed after 1970. This classic example of brute force technologies employed in the service of modernization at vast environmental and social cost was, in its time, as significant to political and economic discourse in Canada as the tar sands of Alberta are today, for its magnitude, the benefits purported to flow from it and the vigorous opposition it generated. But Carlson takes the long view. He looks back, beyond the story of wires and words that "integrated this distant region into the technical geography of an international electrical grid" in the 1970s to excavate the Cree people's complex stories about, and understanding of, their immemorial and phenomenal world. He seeks to understand how ideas and realities are linked inextricably. This work leads him to conclude that the Cree, for whom the land is a web of relationships, not a piece of real property, are a resilient people who have been remarkably successful in maintaining their narrative of place against the stories (and their consequences) that others have told, through centuries, about their land. "Only by connecting the history of the land with what is happening on the land today," Carlson writes, "can we find a meaning that will help lead to the future." *Recognizing this reminds us that historical perspective is vital if contemporary changes are to be understood as anything other than causes for joyous celebration or dispiriting examples of blind, unstoppable decline for both land and people.*

Piper might be said to write about another sort of hunt, the hunt for resources. She explores the imposition of an industrial order on northwestern, or subarctic, Canada between 1921 and 1960, and the integration of this remote and extreme environment into an expanding global economic order. She details the circumstances that most significantly influenced evolving relationships among subarctic environments, industrial resource operations, and local communities along the axis marked by the large Shield-edge lakes, Winnipeg, Athabasca, Slave and Great Bear. Then she investigates the ecological perspectives and practices of those involved in hard-rock mining and industrial fishing on the lakes, paying particular attention to the ways in people imagined the natural world with which they engaged, to the role of science and technology in shaping these understandings, and to conflicts over appropriate development. What she finds, among other things, is that "humans and nature ... co-adapted, with each changing in response to the actions of the other." *Recognizing this reminds us that even in western societies that have used industry and technology to remake the world for specific capitalist objectives, and counted the costs and benefits in terms that generally discount environmental values, "humans and human culture exist within nature, not outside it."*

How, then, do these four books help us think about our larger questions of environmental change in Canada? It seems to me that each of them helps us to address

the challenge that haunted Louis-Edmond Hamelin – “the problem of the relationship between geographic realities and the world of the imagination”. In grappling with this question they also illustrate both the need for, and the possibilities of, a form of grounded scholarship that offers a more precise understanding of, and a useful platform for intervention in, the challenges posed by northern circumstances. Let me try, in conclusion, to put this a little more categorically, with a view to framing our further debate about Canada, the north and global change.

These studies warn against *the dangers of presentism*. Short-term views, focused on the here-and-now encourage us to see our world as a blank canvas being despoiled by current and future development. An historical perspective is important in allowing us to weigh the significance of current developments by calibrating the consequences of previous actions.

These studies demonstrate that *geography matters*.<sup>24</sup> Each of them is sensitive to local circumstances as well as to temporal contexts. Most obviously, they remind us that there are many “norths”. Canadians use the term to denote a wide range of spaces, from the cottage-country hinterland of Toronto to the farthest Arctic islands, and the “realities” – the physical and material circumstances as well as the connections and contexts of these places – vary enormously. Beyond this, however, they provide a timely reminder that much of the rhetoric about climate change, framed at the *global* scale, is also insensitive to local differences. What exactly does an increase of 2°C or 4°C in global temperature mean? Does this globalized atmosphere exist? Or are we reducing something far more complex to “an ontologically unitary whole”?<sup>25</sup> Climate change, like everything else has its distinctive geographies, and to overlook them is to obscure the differences and inequalities in the world. Moreover, as Stephen Daniels and Georgina Endfield have remarked recently in introducing a set of studies of climate change narratives published in the *Journal of Historical Geography*, “what people make of climate change, and what they do about it, are complex cultural matters, with ... specific meanings emerging in and from particular times and places.”<sup>26</sup>

By focusing attention on the ways in which people imagined their immediate settings and the roles of science, technology and tradition in shaping these conceptions, these studies also invite us to extend critical attention to the ways in which *knowledge is constructed* and conveyed, and how both “the North” and climate change scenarios are represented. Remember the graphic and technological wizardry that Al Gore used to convey the message of *An Inconvenient Truth*, and think of the ways in which scenarios from those black boxes called global climate models are coupled, regularly, with striking images – canonical examples include the melting Greenland ice sheet producing sea-level rise word-wide and pictures and stories

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24 On this point more generally see Hulme 2008.

25 Miller 2004.

26 Daniels/Endfield, in *Journal of Historical Geography* (2009); see also in the same journal: Sverker Sörlin, Richard Hamblyn, Michael T. Bravo, Dianne M. Liverman.

of starving polar bears.<sup>27</sup> Just to drive this point home, let us return to the thermohaline circulation system – the Great Ocean Conveyor – that rests near the centre of many assessments of the global impacts of a shrinking Arctic ice pack. The force of this message about the consequences of Arctic warming often depends upon an arresting depiction of a great ocean current sweeping across the Pacific, Indian, and South and North Atlantic oceans as a warm surface flow and returning whence it came along a slightly different path as a cool subsurface flow. A warming Arctic is considered likely to destabilize this “meridional overturning circulation” and thus produce ramifying effects across the globe. This diagram was prepared for the great oceanographer Wallace S. Broecker to illustrate an article about the Younger Dryas event (a brief intense cold period ca 12000 years BP). It was designed, Broecker noted later, “as a cartoon to help the largely lay readership” of *Natural History* (in which it was published in 1987) “to comprehend one of the elements of the deep-sea’s circulation system.” Had he but known, he lamented, “that it would be widely adopted as a logo,” he would “have tried to ‘improve’ its accuracy” – although such changes “would likely have ruined the diagram both for readers of *Natural History* and for use as a logo.”<sup>28</sup> None of this is to deny the feedback effects of change in the extent of Arctic sea ice. But it does remind us that knowing something of the circumstances and dynamics of knowledge production is essential to understanding the power, both latent and overt, of that knowledge and to evaluating its claims.

These studies show us the importance of *thinking about nature and culture together*. In their shadows, concepts such as “the north,” “climate” and global change are revealed for what they are: hybrids constituted by physical and scientific as well as cultural, economic political and social elements. The “North” is something “real” that can be calibrated and defined, à la Hamelin, by reference to biogeophysical phenomena and the instruments and classifications that substantiate them: thermometers, rain gauges, degrees of latitude and vegetation types. So too, if we think about them in the same way, with “climate,” global change, or air pollution.<sup>29</sup> But all of these things are – as Hamelin recognized for the North when he incorporated population, transportation and economic activity in his VAPO index – also human or cultural objects understood in various embodied and intellectual ways. Taken together, these books suggest the importance of moving beyond the binary between ideas and realities, between “values” and “facts” between what the political ecologist Featherstone describes as “subjectivity as ‘in here’ and nature as ‘out there’” in order to “adopt a hybrid position somewhere between social constructivism and realism.”<sup>30</sup>

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27 Gore 2006; Kolbert 2006; Slocum 2004.

28 Broecker 1991.

29 Of particular pertinence to many of the broader arguments here is Cupples 2009.

30 Featherstone, “Skills for Heterogeneous Associations: the Whiteboys, collective experimentation, and subaltern political ecologies,” *Environment and Planning D: Society and Space* 25 (2007), pp. 284–306, cited by Cupples 2009.

There are difficulties here. As another political ecologist, Arturo Escobar, has noted: "For constructivists, the challenge lies in learning to incorporate into their analyses the biophysical basis of reality; for realists, it is examining their frameworks from the perspective of their historical constitution accepting that the natural sciences are not ahistorical and nonideological."<sup>31</sup> In the end, however, the struggle is surely worth the candle because, as more and more scholars are now coming to recognize, continuing to insist on a rigid distinction between nature and culture exacts a high price, because it limits our understanding of what it means to be human and "compromises our ability to live effectively with risk."<sup>32</sup>

Finally, these studies illustrate *the importance of stories* in framing the ways in which people act on the earth and to our understanding of the world and ourselves. Each of these books offers a rich, empirical account of particular circumstances. By offering insight into the ways in which others have thought and acted across and around the nature/culture boundary they make important contributions to understanding what it means to be human. But in the end their authority derives not from the events they describe, the "facts" they assemble or the insights they offer so much as from the framework of interpretation into which these elements are incorporated to form a coherent and compelling argument. So too with questions of climate change and global warming. Have we paid too little attention to other frameworks of interpretation because the prevailing narrative about greenhouse gases is so compelling? Have our anxieties about the anthropogenic causes of climate change led us to discount (to some degree) the influences of such factors as the Pacific Decadal Oscillation upon the trends we discern in temperature time-series? Similar things have happened before.<sup>33</sup> This is certainly not to say that current concerns about global climate change are wrong-headed. It is, though, to suggest that critical caution has a legitimate place and purpose, and that we would be wise to engage rather than dismiss dissonant points of view on these and other matters.

Perhaps, then, these are points worth thinking about as we reflect upon the place of the north in the current big story of global change, and ask ourselves about the ways in which common narratives enlist, among others, the age-old themes of good vs. evil, impending apocalypse, redemption, and the importance of listening to "sermons in stones" – or in this case the ice.

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31 Escobar 1999.

32 Hinchliffe 2004. See also David Demeritt to the effect that absolute truth claims about nature erase questions of power and create an ontological closure that reduces environmental politics to "a narrowly technical issue of what to do with a pre-given nature, rather than involving wider ontological questions of identity and being." In Demeritt 2002, quote on p. 781.

33 For example Langston 1996.

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