A SPATIAL HISTORY OF CANADA:

ARCHIVES, KNOWLEDGE, AND GEOGRAPHY

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Abstract

This dissertation asks how environmental information about the Canadian northwest was gathered, transmitted, and stored in the post-Confederation period (1867-present). It pays particular attention to the way objects such as photographs, maps, images, documents, and other material objects were employed to overcome the disparate geography of settlement. My key argument is that producing a unified model of Canada depended on employing both objects able to convey landscapes and subjects able to decode them geographically. To demonstrate this claim, the dissertation provides an interpretive method for studying the historical geography of Canada called spatial history, which I employ in two ways. The first argues that various actors and institutions worked to tie European newcomers to the land by entwining historical and geographical knowledge of Canada. I emphasize the cooperation between archives, government bureaus, and schools and universities in fashioning 'spatial histories' of modern Canada. The second focuses on how objects were used to transmit knowledge between different these different scales and sites. Here I show how the 'spatial histories' told by objects required users to adopt new means of seeing and interpreting landscapes, and in turn adopt new understandings of self, citizenship, and belonging. The case studies that make up the dissertation are joined by a set of themes that resonate in the spatial history of Canada: archives, visualization, environmental knowledge, state formation, the history of Canadian geography, historical commemoration, public memory, and regionalism.

Preface

This dissertation was entirely designed, researched, and written solely by the author with financial assistance from The University of British Columbia, a Doctoral CGS from the Social Science and Humanities Research Council of Canada, the J. Lewis Robinson Scholarship, and support from the Network in Canadian History and Environment. Versions of Chapter 3 and Chapter 6 have been published. Chapter 3 is reproduced courtesy of the *Journal of Historical Geography* from Matt Dyce (2013) Canada Between the Photograph and the Map: Aerial Photography, Geographical Vision, and the State. *JHG* 39: 69-84 (DOI: 10.1016/j.jhg.2012.07.002). Chapter 6 is reproduced courtesy of the *Canadian Historical Review* from Matt Dyce (2013) 'The Gateway to the Last Great West': Spatial Histories of the Athabasca Landing Trail. *CHR* 94: 117-206 (DOI: 0.3138/chr.1208). Images have been reproduced with the permission of the American Society for Photogrammetry, Bethesda, Maryland (Fig. 12, Fig. 13), McGill-Queen's University Press (Fig. 1), Wesley Mattie (Fig. 47, Fig. 48), Library and Archives Canada (Fig. 10, Fig. 40), the Crown Printer, Government of Canada (Fig. 7), the Canadian Association of University Teachers (Fig. 53), the Athabasca Archives (Fig. 46, Fig. 49, Fig. 50, Fig. 51), and the Provincial Archives of Alberta (Fig. 34, Fig. 35, Fig. 36, Fig. 37, Fig. 38, Fig. 39, Fig. 41, Fig. 42, Fig. 43, Fig. 44, Fig. 45). Certain images have been reproduced from now defunct educational publishers, including W.J. Gage (Fig. 14, Fig. 33) and Holt, Reinhart, and Winston of Canada Ltd (Fig. 32), for which copyright information no longer exists. The remaining images in this dissertation have sufficiently aged enough to pass out of copyright protection and are now in the public domain. However, the author wishes to thank W.J. Gage and Holt, Reinhart, and Winston of Canada Ltd. along with the

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List of Abbreviations

Hudson's Bay Company (HBC)

Department of the Interior (DOI)

Library and Archives Canada (LAC)

Public Archives of Canada (PAC)

Geographical Branch (GB)

Acknowledgements

As the reader of this dissertation will surely recognize, there are a number of regions of Canada that mean a great deal to me. If I were to take them and draw a personal map of the project, its geography would neatly fit into my own past, present, and future. The landscape of my past, and certainly the most special, is the heartland of Ontario and the wooded hills of Dufferin County. These I associate with my family, who have stayed with me on this journey and lent their unyielding support, assistance, and patience. Thanks to my mom, dad, brother, and the rest of the Dyce and Parsons families for always being there, and to all my friends back home, especially Luke and Alissa who shared their tiny house with me more times than I can count. In Ontario, it was at Trent University on the banks of the Otanabee River I first learned to listen to stories from the land in a Canadian Studies class with John Wadland that I will never forget. And it was near another river, the Ottawa, at Carleton where I was able to work with John Walsh and Jim Opp, great friends and colleagues whose influences loom large in this dissertation. While my time in Ontario was formative, it is the landscape I associate with the present that truly produced these pages. In Vancouver the University of British Columbia sits in a world of blue and green, where the ocean and the mountains meet, their contrast reflecting the great intellectual dynamism to be found in and around the Department of Geography. There, Trevor Barnes, Derek Gregory, Cole Harris, Mona Gleason, Tina Loo, Bob McDonald, and most especially Matthew Evenden helped to broaden my horizons and make this project what it is. The academic vibrancy surrounding that place was sustained as much by scholarship as it was by friendship, and I am happy count as great scholars and friends people like Joanna Reid, Jess Dempsey, Mike Bodnar, Oliver Belcher, Rosemary Collard, Max Ritts, Jon Luedee, Emilia Kennedy, John Thistle, and of course Jono Peyton, my close friend, colleague and companion

through so many adventures and mishaps – thanks to all my fellow grad students who made school so much fun. Where Vancouver overlooks the ebb and flow of the tides, the same waters also wash far off shores, and when I think of distant places I am happy to have known the humble kindness of such inspiring scholars as Libby Robin and Tom Griffiths in Australia and Felix Driver in the United Kingdom. But in the local landscape there is a feature like no other that dominates the scene: my supervisor, Graeme Wynn. Like the mountains themselves, from the moment I arrived at UBC he has stood watch over this project, sheltered it from storms, and offered clear skies to explore, yet has done his part by bringing wind and hail down hard upon it to see what it can withstand, and has released great landslides of erudition that swallow and vanish chapters in the blink of an eye. I thank him, and respect him most of all, for demonstrating a model of scholarship I will spend my life attempting to honour: for always daring me to challenge his resolute positions, Graeme reminds that even those things that seem most solid are always in motion. The final landscape is the vast interior plains, where I finished writing this dissertation after joining the Department of Geography at the University of Winnipeg. No one who moves to the Prairies can go for long without reconsidering how they exist in Canadian history and geography, and I have been helped greatly along the way by many warm and welcoming students and new colleagues, along with the support of my chair, Marc Vachon, and through the wisdom of Jock Lehr and Bob Stock. For all those who have assisted in this project, the faults here are entirely my own. I am lucky to have someone willing to put up with these and many more. Past, present, future, finally, and above all, my thanks and love go to Amy Nicoll, who has travelled through these landscapes with me.

Chapter 1: Introduction

1.1 Spatial History and Ontology

A 1997 article by Leonard Susskind in *Scientific American* details an encounter between a pair of university physicists, Professor Windbag and Dr. Goulash, two men equally driven to explore the frontiers of time, space and the nature of the universe. Each is at the peak of his career, and the scientists are also deeply jealous of one another. Through a series of underhanded maneuvers each conspires to destroy the other's work. The culmination of their dispute is devastating: Windbag has created a functional time machine, which Goulash destroys by bombing it to smithereens. All work is lost. Not to be outdone, Windbag breaks into Goulash's office and steals his computer. Driven by resentment, he pitches the unit and all the data it contains into a black hole. The two men then stare hopelessly as the computer sails through space heading toward the event horizon, the point where, they both know, gravity becomes so strong that nothing will ever escape it. During the ensuing court case both physicists are defiant. According to Goulash, the destruction of Windbag's time machine was immaterial: "Information can never be destroyed," he protested, "All you have to do is go and find each particle in the debris and reverse its motion." The laws of the universe make this possible through a set of principles called microphysics: if all the positions, trajectories, and material constituents of the time machine were known at the time of its destruction, piecing it back together would only require modeling the explosion in reverse. Windbag also insisted he was innocent of any crime: a similar principle would befall the black hole itself. Over time its mass

would eventually dissipate, releasing the information on the computer back into the universe where it awaited reconstruction.[1]

The claim that 'information can never be destroyed' was probably the furthest thought from Hugh Dempsey's mind in 1960, as he sifted through ashes that were once the records of the Sarcee Indian Agency in the Province of Alberta. The agency was created (as were others like it) to administer treaty agreements between the government of Canada and Aboriginal people, who had agreed to settle on reserve lands set aside for them in return for provisions from the state. The Sarcee Agency was one of a group of offices located on these reserves, established with the intent of overseeing the populace and administering the policy of 'gradual civilization' on behalf of the Department of Indian Affairs (DIA). Through the offices, Indian Agents supervised band activities, managed the distribution of food, and monitored the progress of Native people: they were the portals through which the federal Indian policy was expanded and applied. The record-keeping practices of the DIA had fit the model of Victorian efficiency, and the department prided itself on possessing "the almost continuous record of our Indian ward's progress."[2] However, when it was announced in 1956 that the Public Archives of Canada (PAC) had secured a commitment from the government to store all state documents in a records centre in Ottawa, many of the Indian Agents began eliminating their documentary files at a rapid pace. On the eve of the major transfer, the DIA sent out representatives to sort through remaining agency files and decide what should be kept out of public view.[3] When Dempsey, a historian and archivist acting as representative of the Public Archives, arrived at the Sarcee Reserve to

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[1] L. Susskind, Black holes and the information paradox, *Scientific American* 276 (1997) 52-57.
[2] A.E. St. Louis (1937) quoted in B. Russell, The white man's paper burden: aspects of record keeping in the Department of Indian Affairs, 1860-1914, *Archivaria* 19 (1984) 50-72, 52. Also see: S. Darcy, The evolution of the Department of Indian Affairs' Central Registry record-keeping systems: 1872-1984, *Archivaria* 58 (2004) 161-172.
[3] J. Atherton, The origins of the Public Archives Records Centre, 1897-1956, *Archivaria* 8 (1979) 35-59, 35.

collect what another branch of government, the DIA, did not want, he discovered that the agents had retained only a handful of recordbooks and torched the remaining documents. For Dempsey, the fire at the Sarcee office marked the beginning of a race across Alberta to reach the agencies before the DIA officials arrived to eliminate the records. Over time his quest turned into a tour of Western Canada's reserve geography, as Dempsey followed the network of administrative sites where the surveillance and assimilation of Indigenous people of the region was carried out. At the Blood, Cardson, Hobemma, Piegan, Saddle Lake, and Blackfoot agencies, the archivist arrived to find truckloads of files "piled on the ground and burned."[4] For Dempsey, the destruction of the information was devastating: "My worst fears were realized."[5] Assurances that microphysics could reconstruct the information lost in the burning documents would have been laughed at.

The juxtaposition of Dempsey's experience with those of Goulash and Windbag calls into question the commonplace equivalence assumed to exist between material and information. Susskind's notion that only the shape of the matter making up Windbag's time machine changed after it exploded depends on the assumption that information is matter and energy together, in much the same way as every binary 1 or 0 that forms complex computer data must be written, using energy, on the material container of the hard drive.[6] The question on Susskind's mind when he invented the story of Goulash and Windbag was what happens to information when it passed into a black hole – a place where there is no energy, only matter. Could Goulash's

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[4] The proper indigenous nomenclature of these First Nations reserves are the Kainai Nation (Blood and Cardson) the Maskwacis Cree (Hobemma), the Piikani Nation (Piegan) and the Siksika Nation (Blackfoot).
[5] H. A. Dempsey, *Always an Adventure: An Autobiography,* Calgary, 2011, 131. On IAB policy, agencies, and surveillance in Alberta see: K. D. Smith, *Liberalism, Surveillance, and Resistance: Indigenous Communities in Western Canada, 1877-1927,* Edmonton, 2009.
[6] As Susskind cleverly demonstrates elsewhere, when a computer's hard drive is erased the data does not disappear. Rather, the system fan turns on to cool the release of information.

computer really be saved? In 1997 this was being hotly debated by Susskind, a theoretical physicist and originator of string theory, Stephen W. Hawking, and Gerard 't Hooft of Utrecht University. The issue rested on the thermodynamics of black holes: why in the total absence of heat did they still seem to create warmth, and what was its source? One answer was that heat is created by the separation of energy from matter – which would lead to the conclusion that Goulash's computer was irrecoverable because the energy [information] stored in it would be "thermalized and radiated back into space." Another answer is more complex: warmth emanated not from matter and energy separating, but from information, which is properly thought of as their three-dimensional arrangement. While material may disappear from view or the flames might carry energy away, the information – the projection of their previous appearance – cannot be destroyed.[7] Had he been preternaturally aware of these theoretical speculations at the heart of late-twentieth century string theory, Dempsey might have regarded the heat radiating from the piles of Indian Affairs documents not only as a product of combustion but as a remnant of the entwined stories of Indian Affairs agents and Aboriginal resistance released into the ether. But his thoughts were almost certainly more quotidian, salted with anger at the wanton destruction and peppered with simple despair at the loss of valuable history.

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[7] Unfortunately for us, the logical result reached by Hawking's 'Black Hole Information Paradox,' as proposed by t'Hooft and Susskind is that we only experience the world as an information 'hologram' or illusion. Matter, energy, and therefore all of us exist in two dimensions, but appear to be three dimensional because of the projection of information on the two-dimensional surface. When things 'enter' black holes, they are not going anywhere. Rather, they are losing three-dimensional projection and thus we can no longer see them, we can only feel the heat as the information describing their previous arrangement parts ways. Even Hawking has recently begun to suggest Susskind and t'Hooft are right. M. Kwong, "Stephen Hawking's black holes 'blunder' stirs debate," *CBC News*, last modified 29 January 2014, accessed 6 January 2014, http://www.cbc.ca/news/technology/stephen-hawking-s-black-holes-blunder-stirs-debate-1.2514299.

1.1.1 Spatial Histories

The image of an archivist standing next to a pile of burning documents, and the notion of two physics professors standing on the brink of a black hole watching their research being incinerated by gravity, tell us about how material and information go together and how we make human investments in the physical possession of knowledge. This dissertation is a project about certain other materials that contain information, or objects that carry knowledge, and how people relate to them. It offers an historical geography of the use of documents, maps, photographs, images, and even places, based on the way they store and transmit information, and charts the role that they have played in shaping Canada. This story begins when the newly-minted Dominion embarked on the process of becoming a transcontinental nation-state in 1867, and very little was known about the environmental conditions of the country. While the vast territory stretching from Manitoba west to the Rocky Mountains and north to the Arctic tundra was mapped by explorers and traders, the same region was also 'terra nullius' for the designs of a modern liberal state. If the national policy being advanced by Sir John A. Macdonald was to work, and Canada was to save the West from the threat of American annexation, its remote regions needed to be enumerated, valued, ordered, surveyed, reformed, colonized, made productive, and thereby turned from an Aboriginal and Metis world into sovereign Canadian territory.

This quest to make modern knowledge and turn the West into a modern space occupied the new country for most of its first hundred years.[8] The grid of neatly surveyed lines and

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[8] D. Gayton, *The Wheatgrass Mechanism: Science and Imagination in the Western Canadian Landscape,* Saskatoon, 1992; B. Potyondi, *In Palliser's Triangle: Living in the Grasslands, 1850-1930,* Saskatoon, SK, 1995; A. A. den

portioned farmsteads extending westward along the 49th parallel from Lake of the Woods to the foothills of the Rockies is the result of this endeavour. For many years wheat farming and the railways so dominated the Western identity that 'the north' began only where they ended—in the famous estimation of W.L. Morton, past the limit of the viable commercial production of cereal crops.[9] This dissertation focuses on that same region, known variously as 'the Northwest,' 'the West,' or 'Western Canada.' It follows the modernization of space as Ottawa orchestrated it and as the people who participated in it carried it out. The chapters herein range across different moments in the making of the modern West. They trace the efforts of Ottawa bureaucrats to gather knowledge about the landscape through documents, maps, and eventually using aerial imagery; they consider how an early Edmonton archivist, photographer and champion of public history helped spawn western regionalism; they demonstrate how children were taught to read and recognize western nature using 'visual instruction' in Canadian school textbooks; and they reveal how an old Hudson's Bay Company fur trail connecting the frontier settlement of Athabasca to the prairie cities of the south became central to the town's regional understanding of itself.

These different stories from the West frame a larger narrative about how Canada began to be imagined as the sum of similar regional parts. Rather than detailing the progress of people involved in making knowledge about Canada, however, I place the objects they used at the centre of the story. I call this project a 'spatial history' of knowledge because paying attention to

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Otter, *The Philosophy of Railways: The Transcontinental Railway Idea in British North America,* Toronto, 1997; R. Bantjes, *Improved Earth: Prairie Space as Modern Artefact, 1869-1944,* Toronto, 2005.

[9] W. L. Morton, The North in Canadian historiography, *Transactions of the Royal Society of Canada* 8 (1970) 31-40. Although Morris Zaslow claims the process took longer, Morton's line is a useful approximation until the north was 'opened' by the vision of John Diefenbaker in the 1950s and 60s. M. Zaslow, *The Opening of the Canadian North, 1870-1914,* Toronto, 1971; K. M. Abel and K. Coates, *Northern Visions: New Perspectives on the North in Canadian History,* Peterborough, Ont., 2001.

how people thought information could be stored and moved across space tells us much about how they understood the project of making Canada modern. Further, the term 'spatial histories' reminds us that not only was the vast interior of the continent unknown country, but that 'Canada' was a terra nullius of the mind. Although the geographical boundaries of the nation were relatively clear by 1871, there was no comprehensive historical model suggesting the meaning of the country.[10] As Carl Berger put it, until about 1900 most Canadian historians compiled statistics and placed dates in order: "the feeling was that Canada, with its brief past, possessed no historical halo."[11] The task of pulling together information about the eastern provinces and the vast interior, to give value to these territories, to make them intelligible to citizens, to establish their properties, to settle them and make them home – in short to define what 'Canada' meant – fell not only to historians and geographers but also to scientists, authors, educators, bureaucrats, and citizens. Thus, another meaning for 'spatial history' refers to the way the land is animated through historical and geographical stories. In sum, this dissertation asks how Canadians used history and geography to interpret landscapes, how information about nature was stored in objects, how new environments were translated into knowledge, and how that information was formed into an understanding of Canada.

This path of inquiry is not without parallels. Libby Robin's impressive study, *How a Continent Created a Nation* charts the role of landscape and environment in moulding and reflecting Australian identity.[12] In the United Kingdom, David Matless has shown how

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[10] One possible exception to this claim is Suzanne Zeller's demonstration of how the idea of a transcontinental nation state was framed by nineteenth century inventorial sciences of botany, geology, and meteorology. S. Zeller, *Inventing Canada: Early Victorian Science and the Idea of a Transcontinental Nation,* Toronto, 1987.
[11] C. Berger, *The Writing of Canadian History: Aspects of English-Canadian Historical Writing since 1900,* Toronto, 1986, 5.
[12] L. Robin, *How a Continent Created a Nation,* Sydney, 2007.

discourses of heritage and antimodernism employed geography to summon a new kind of 'Englishness' for the mid-twentieth century.[13] Similarly, Giselle Byrnes has studied the work of surveyors in controlling the way New Zealand was brought into being as both a territory and a mental concept. Considering the interaction between European and Maori mapping practices, she sets a course for what she also calls spatial history: "a study of how land has been transformed and of how colonisation is and has been expressed through language."[14] Other important works have focused on the production of national space through the circulation of geographical representations and imaginings. Matthew Edney's work on the connections between "the ideology of map-making and the ideology of empire" in colonial India shows how the culture of 'realism' shrouding the map gives it incredible power to speak for territory.[15] Susan Schulten has done similar work in the US, examining the role of academic geography in narrating national space.[16] Together, these studies turn around the global scope of European imperial power to transform foreign landscapes into national homelands by animating them with geographical and historical ideas.[17]

This process also occurred in Canada. To date however it has been relatively little studied. Carl Berger's intellectual history *The Sense of Power* examined the Canada First movement at the time of confederation to show how ideas about imperialism, manifest destiny, and racial purity were drawn from characterizations of Canadian environment. Suzanne Zeller's *Inventing Canada* looked at inventorial science in the same period to show how important

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[13] D. Matless, *Landscape and Englishness,* London, 1998.
[14] G. Byrnes, *Boundary Markers: Land Surveying and the Colonisation of New Zealand,* Wellington, NZ, 2001, 4.
[15] M. Edney, *Mapping an Empire: The Geographical Construction of British India, 1765-1643,* Chicago, 1997, 32.
[16] S. Schulten, *The Geographical Imagination in America, 1880-1950,* Chicago and London, 2001; S. Schulten, *Mapping the Nation: History and Cartography in Nineteenth-Century America,* Chicago, 2012.
[17] Another exemplary and influential text is Paul Carter's *The Road to Botany Bay,* New York, 1988.

amateur and government collectors were in assembling the idea of a transcontinental nation girded by geological, botanical, and meteorological observations.[18] While few newer studies have looked at landscape and colonial state formation in Canada at the national level, a range of critical scholarship has investigated the development of various regional identities using the same framework.[19] Probably nowhere is this literature more developed than on Atlantic Canada or the North. Ian McKay's influential *The Quest of the Folk* showed how the 'invented traditions' of Scottishness and rural humility for mid-century Nova Scotians were imagined in part through the rough Appalachian topography.[20] At other times, the unique qualities of the Maritime region have been suppressed in order to reflect ideas about Canada. Alan MacEachern's environmental history of national parks demonstrated how Atlantic landscapes were folded into a national narrative by the changing them to fit the wilderness aesthetic of the National Parks Branch.[21] Conversely, it is the very absence of any familiar geography in the North that has made it the 'empty' staging site for many myths about Canada.[22] Both Sherrill Grace and Renée Hulan have pointed out the iconic symbols of independence and endurance southerners associate with Canadian northerliness revolve around a contradictory set of

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[18] C. Berger, *The Sense of Power: Studies in the Ideas of Canadian Imperialism, 1867-1914,* Toronto, 1971; Zeller, *Inventing Canada*.

[19] For some of the best regional studies, c.f. on B.C., B. Braun, *The Intemperate Rainforest: Nature, Culture, and Power on Canada's West Coast,* Minneapolis, 2002; on Ontario, C. E. Campbell, *Shaped by the West Wind: Nature and History in Georgian Bay,* Vancouver, 2005; J. Thorpe, *Temagami's Tangled Wild: Race, Gender, and the Making of Canadian Nature,* Vancouver, 2012; on Quebec, C. Desbiens, *Power from the North: Territory, Identity, and the Culture of Hydroelectricity in Quebec,* Vancouver, 2013; on the North, S. Grace, *Canada and the Idea of North,* Montreal, 2001; on the Maritimes, S. Hornsby and H. Stege, *Surveyors of Empire: Samuel Holland, J.W.F. Des Barres, and the Making of the Atlantic Neptune,* Montréal, 2011; C. Slumkoski, *Inventing Atlantic Canada: Regionalism and the Maritime Reaction to Newfoundland's Entry into Canadian Confederation,* Toronto, 2011; on Western Canada, R. Rees, *New and Naked Land: Making the Prairies Home,* Saskatoon, 1988.

[20] I. McKay, *Quest of the Folk: Antimodernism and Cultural Selection in Twentieth-Century Nova Scotia,* Montreal, 1994.

[21] A. MacEachern, *Natural Selections: National Parks in Atlantic Canada, 1935-1970,* Kingston and Montreal, 2001.

[22] Grace, *Canada and the Idea of North*; R. Hulan, *Northern Experience and the Myths of Canadian Culture,* Montreal and Kingston, 2003.

assumptions about gender, race, and landscape in the Arctic tundra. This dissertation draws upon an international literature, but also engages Canadian scholarship about the interpretation of the environment and the circulation of historical and geographical ideas across various regions. It maintains throughout a deliberate and distinctive focus on objects.

Canadians employed objects of varying kinds to meet the challenges of building a continental state. Survey books and journals carried information about resources and boundaries; photographs offered clues to regional variations; diaries and journals held personal experiences and reflections on the character of people and landscapes. Above all, the clearest symbol of national development in the nineteenth century was the map. Cartography was the chief public contribution of the Geological Survey of Canada (GSC), the body tasked with developing "a full and scientific description of the country's rocks, soils, and minerals, to prepare maps, diagrams, and drawings, and to collect specimens to illustrate the occurrences."[23] Great maps defined the age of inventorial science. GSC founder William Logan's first geological map of the country proclaimed the potential for coal mining in the bedrock of eastern Canada, and impressive surveys by Robert Bell and George Dawson laid the Northwest "bare to inspection and open to exploitation."[24] As Brian Harley has shown, such maps and others like them were discursive tools that told spatial stories about ownership, because the *language* of maps "replicates not just the 'environment' in some abstract sense but equally the territorial imperatives of a particular political system."[25] Geological survey maps told spatial stories about

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[23] William Logan (1863) cited in C. G. Winder, ""Logan, Sir William Edmond"," *Dictionary of Canadian Biography, Volume 10*, last modified 2003, accessed 1 November 2013, <http://www.biographi.ca/en/bio/logan_william_edmond_10E.html>.
[24] G. M. Dawson, On Some of the Larger Unexplored Regions of Canada, *Address to the Ottawa Field-Naturalists' Club*, (1890), 1.
[25] J. B. Harley, *The New Nature of Maps: Essays in the History of Cartography,* Baltimore, 2001, 54.

progress, as great blank spaces were gradually filled in with the red of empire, prospects of resource extraction were labelled, and the quality of arable land came to define the frontier of potential settlement.

Thinking about maps as representations tells us a lot about the power they exert, as many others have demonstrated elsewhere, but there are additional gains to be made in thinking about the map as an object, and how it comes to be *representational*. A step further back into history illuminates the changing nature of mapping. By the nineteenth century when officers of the GSC were at work in the northwest, both the purpose and use of maps were relatively conventional, but those who explored this territory a century earlier often found their cartographic epistemology called into question. In the early eighteenth century the primary purpose of mapping 'west of the Bay' was to locate a river route across North America. In the early 1970s, historical geographer Richard Ruggles made the insightful observation that such early maps are best understood as mixtures of truthful observation and imaginative geography, "the result of theorizing about the possible character of the unknown lands."[26] Following his lead, Barbara Belyea has recently looked at the inland explorations of Lewis and Clarke, Peter Fidler, Alexander Mackenzie, and David Thompson to confirm that explorers grappled to distinguish between real and perceived knowledge. As they moved through the Aboriginal world of the eighteenth-century West, their cartographic and theoretical models were challenged by the spatial understandings and accounts of local inhabitants. European explorers were often forced to reconsider their maps when presented with Indigenous cartographic depictions, which saw "no

[26] R. I. Ruggles, The west of Canada in 1763: imagination and reality, *The Canadian Geographer / Le Géographe canadien* 15 (1971) 235-261, 235.

spatial correlation between the map design and the ground on which it is drawn."[27] Native maps were etched into the earth from a situated perspective, and were not thought of as representational objects, but because they nonetheless conveyed valued Aboriginal knowledge, explorers felt the certainty of their European cartography challenged. European and Native mapping practices actually converged, as explorers were forced to re-evaluate their definitions of accuracy and truth.

One of the most important questions facing early mapmakers was how to vest Aboriginal and European truths in the map-object. When George Dawson of the GSC traversed the region 'west of the Bay' a hundred years later, similar concerns arose. Recalling a journey from Fort McLeod to Dunvegan along the foothills of the Rocky Mountains, he described walking through dense bush without any trails to guide him:

> I had so much confidence in the existing maps of that region as to assume that Dunvegan was at least approximately correct in position on them. As often as possible I took observations for latitude, and each night worked out our position by latitude and departure, till at a certain point I was about to turn off to the north of the line previously followed with the confident anticipation of finding Dunvegan. Just here, very fortunately, we fell in with some Indians, and though our means of communicating with them were very imperfect, we gathered enough to lead us to accept the guidance of one of them, who promised to lead us to the fort, but took an entirely different direction from that I had proposed taking. He was right, but Dunvegan proved to be, as shown on the maps, nearly forty miles west of its real position. … this practical experience proved to me very conclusively the desirability of showing features in broken lines, or otherwise indicating their uncertainty when they have not been properly fixed.[28]

For Dawson, this was not a story about different ways of knowing. Instead it was a story about his maps, which European convention clearly regarded as more accurate than Native wayfinding. Thus for him, the question of real versus perceived knowledge had already been folded into the

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[27] B. Belyea, *Dark Storm Moving West,* Calgary, 2007, 53.
[28] Dawson, On Some of the Larger Unexplored Regions of Canada, 3.

meaning of the maps themselves.[29] The only issue that remained was how to record the degree of uncertainty without undermining the map's claim to truth, which for Dawson was solved by the dotted line. This is a small example of the kinds of object histories I look for in this dissertation, moments when conventional understandings of how objects such as photographs, documents, images, and landscapes stored knowledge were exposed, or seemed, all of a sudden, to shift and reveal their changing place in history and culture.[30]

In a broader sense, the Dawson-Dunvegan story suggests that the importance of maps to the creation of Canada involved more than observation and exploration, or the discursive creation of cartographic truth. There is a 'microphysics' to the way the map carries information, involving its physical properties (including how many copies were made, where they appeared and in what contexts, whether it could be rolled and stored in a case, and how long the ink required for printing would last exposed to the air); its epistemological qualities (including the means by which it stored knowledge, the rules of spatial equivalence, scale, and vertical perspective); and its social qualities (including cultural requirements that need to be learned in order to read and interpret it). All of these things have changed over time and space. The map, like the documents, images, photographs, and landscapes examined in this study, has both a history and a geography. In seeking out spatial histories of Canada, this dissertation follows the history of different objects and their stories. It follows Lorraine Datson and other historians of

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[29] Dawson's epistemic uncertainty has been studied in detail. c.f. J. Grek-Martin, Vanishing the Haida: George Dawson's ethnographic vision and the making of settler space on the Queen Charlotte Islands in the late nineteenth century, *The Canadian Geographer / Le Géographe canadien* 51 (2007) 373-398; J. Grek Martin, Making Settler Space: George Dawson, the Geological Survey of Canada and the Colonization of the Canadian West in the Late 19th Century, PhD Dissertation, Queen's University, 2009.

[30] My general scholarly approach here is influenced by two important figures that lurk in the background of these pages. Greg Dening on how to look for change, and Michel Foucault on what to do when you see it. G. Dening, *Performances*, 1996; M. Foucault and C. Gordon, *Power/knowledge: Selected Interviews and other Writings, 1972-1977,* New York, 1980.

science in exploring the deceptively simple claim that objects that carry knowledge have ontologies: their properties are not uniquely given by their form, but are produced, embedded, emerge, and become salient as they outstrip and reform previous expectations.[31]

1.1.2 Ontologies

Ontology is the description of *being*, or what governs how things can be thought of as existing in the world. Ontological thinking has been useful in geography and crucial to demonstrating the role of space in shaping identity and behaviour. In the 1960s and 70s the European philosophies of Edmund Husserl and Martin Heidegger influenced how geographers thought about the phenomenology of the self, giving rise to a theory of subjectivity in which sensual and psychological 'senses of place' inform human *being* in the world.[32] The important contribution of humanistic geography was to show how identity is formed through experiences and meanings associated with place. Since the development of poststructuralism and the cultural turn of the 1990s, this field of thought has been expanded. One branch of this study has re-labelled itself as 'nonrepresentational theory,' and rejected the essentialist theory of experience outlined by humanists in search of a more fluid origin of being through something called 'affect.'[33] Because affect occurs outside of socially constructed categories and structures, and happens before words and representations, it cannot truly be described.[34] While the value of this

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[31] L. Daston, The Coming into Being of Scientific Objects, in: L. Daston (Ed), *Biographies of Scientific Objects*, Chicago, 2000, 1-15.
[32] P. Adams, S. D. Hoelscher and K. Till (Eds), *Textures of Place: Exploring Humanist Geographies*, Minneapolis, 2001; A. Buttimer and D. Seamon (Eds), *The Human Experience of Space and Place*, London, 1980; N. Entrikin, *The Betweenness of Place: Towards a Geography of Modernity,* London, 1991; E. Relph, *Place and Placelessness,* London, 1976; Y.-F. Tuan, *Space and Place: The Perspective of Experience,* Minneapolis, 1977.
[33] B. Anderson and P. Harrison (Eds), *Taking-Place: Non-Representational Theories and Geography*, Surrey, UK, 2010; N. Thrift, *Non-Representational Theory: Space, Politics, Affect,* Oxon, UK, 2008.
[34] P. J. Cloke and R. J. Johnston (Eds), *Spaces of Geographical Thought: Deconstructing Human Geography's Binaries*, London, 2005.

avenue of inquiry remains open to debate, another well established branch of thought derives from the observation that part of what makes us who we are emerges not from, but in 'relation' to other beings, places, and things.[35] The ethnographic study of human geography has shown the deep importance of places to forms of consciousness. A key figure here is anthropologist Keith Basso. Hired by the Western Apache to create a cultural land use map of their reservation at Cibecue, Arizona in the 1970s, he was charting the association of local stories with what he considered otherwise inconspicuous places. Puzzled by the apparent unimportance of the place stories in Apache life, Basso's insight came when he realized that the people he was studying referenced these places in everyday speech (without elaborating the story) as various means of self-reflection, sympathy, advice to others, humour, and myriad other social relations. In Apache culture, wisdom literally 'sits in places,' and people draw on them to speak to one another. For Basso, such 'lived relationships' in and between people and landscape were crucial to understanding Apache society, history, and worldview.[36] In a similar study, Julie Cruikshank has sought to understand how Tlingit people of the St. Elias range exist in "a sentient landscape that listens and responds to human indiscretion" in her work, *Do Glaciers Listen?*[37] She offers a relational historical geography of the European-Native colonial encounter by showing how Tlingit view the landscape as dynamic plane where place (the agency and intention of glaciers) is a central actor in the social changes precipitated by contact. These demonstrations of the entangled relationship between people, places, and other things (like glaciers) suggest that

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[35] For questioning the limits of affect theory, see T. Cresswell, Non-representational theory and me: Notes of an interested sceptic, *Environment and Planning D: Society and Space* 30 (2012) 96-105.
[36] K. Basso, *Wisdom Sits in Places: Landscape and Language Among the Western Apache,* Albuquerque, NM, 1996.
[37] J. Cruikshank, *Do Glaciers Listen?: Local Knowledge, Colonial Encounters, and Social Imagination,* Vancouver, 2005, 142. On relational varieties of place, also see G. Gordillo, *Landscapes of Devils: Tensions of Place and Memory in the Argentinean Chaco,* Durham, 2004

ontological study of any one thing in isolation is hopeless. We not only dwell in the world, but we do so together with, against, and alongside other people and things dwelling in the same way. Thus, rather than emerging independently, 'ontologies' are co-produced, and any attempt to describe the conditions for being – be it human, non-human, more-than-human, or otherwise – must involve studying the relational nature of things.

The claim that people develop subjectivities in relation not just to their environment, but also to the other humans and various things they encounter in the world, may seem terribly obvious. The point is that its obviousness is often forgotten. The real value of the words 'relational' and 'ontologies' is as shorthand for acknowledging that the lives of people and the 'lives' of material objects are coproduced with each another, and that highlighting this may lead to new discoveries.[38] For example, political theorist Jane Bennett has studied how different objects she calls 'vibrant matter' like stem cells and omega-3 fatty acids, may configure human experience. She shows how they have a certain agency to affect not just the shape of our bodies, but our brain chemistry and mood, in ways we cannot control or predict.[39] I am not prepared to follow Bennett and others into 'post-humanism' or to engage arguments for the agency of non-human actors, but I do contend that thinking about the lives of things other than ourselves can tell us a great deal about human experience. Thus I set out here to study how a diverse set of objects designed to carry knowledge about Canadian landscapes was brought into being. Yet I include three 'ontological' precautions. The first is not to assign a very human term like 'agency' to non-human things. Debate over this practice was broached by a group of environmental historians whose attempts to 'bring nature into history' led to a series of

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[38] D. Coole and S. Frost (Eds), *New Materialisms: Ontology, Agency, and Politics*, Durham, NC, 2010.
[39] J. Bennett, *Vibrant Matter: A Political Ecology of Things,* Durham, NC, 2010.

influential studies demonstrating the powerful influence of ecological change on human activity.[40] This led to the question whether authors who gave 'agency' to nature were writing histories of the environment or were assigning to nature an intentionality it did not possess. The difficulty of reducing the matter to a single solution is always foiled, as Raymond Williams observed some 30 years ago, by the fact that there is a lot of human culture in nature.[41] Indeed, a more contemporary response by Linda Nash argues that "human intentions do not emerge in a vacuum, that ideas often cannot be distinguished from actions, that so-called human agency cannot be separated from the environments in which that agency emerges."[42] Nash's reminder is useful for this dissertation, which looks at the role of objects and things that stored and recorded geographical knowledge or information about Canadian environments. I insist with Nash that objects appear to have agency because of human actions and understandings about what they were, how they carried knowledge, how they worked, and that the nature of that agency explains how people have used their environment.

Understanding the relationships between people, objects, and environments is a key focus of this study, which leads to a second precaution. While geographers might argue that people, places, and things emerge out of fluid 'relationships' or 'affect,' it must not be taken for granted that all people think of or interpret the world in this way. Instead, many people work through and try to establish secure and immutable meanings for things in life. Forgetting that we make these meanings and instead thinking they occur naturally is known in academic circles as a social

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[40] W. Cronon, *Changes in the Land: Indians, Colonists, and the Ecology of New England,* New York, 1983; C. Merchant, *The Death of Nature: Women, Ecology and the Scientific Revolution,* New York, 1983; D. Worster, *Dust Bowl: The Southern Plains in the1930s,* New York, 1979; R. White, *The Roots of Dependency: Subsistence, Environment, and Social Change among the Choctaws, Pawnees, and Navajos,* Lincoln, 1983.
[41] R. Williams, *Keywords: A Vocabulary of Culture and Society,* New York, 1985.
[42] L. Nash, The agency of nature or the nature of agency?, *Environmental History* 10 (2005) 67-69, 69.

construction.[43] For all its focus on the use of everyday things like photographs, documents, and textbooks, this dissertation sees the spatial histories told by these objects as products of people socially constructing meaning by trying to place boundaries around things, establishing a singular role or use for them, and outlining their history and value. In this dissertation I follow debates that took place over the meaning of particular objects as containers for knowledge that encompassed many nations over several decades during the twentieth century. Not only were individuals interested in declaring how objects worked, but the Canadian state heavily relied on material things like maps, surveys, and documents to bring information in from the frontier, and relied on similar objects to transfer information back to the populace.

If we are to take these debates seriously, the third precaution is that the study of ontologies must necessarily be historical. An historical perspective can account for *why* we are able to deconstruct categories of analysis or social constructions by demonstrating how they emerge and change over time. Often forgotten is that history also shows how things cease to be or fade away into non-existence, and how like Windbag and Goulash we might catch a glimpse at the escape of information that describes them.[44] Unlike literatures on affect and emergence, a historical perspective invites reflection on what possibilities for being human were destroyed or erased, as occurred in those fires over which Hugh Dempsey stood at the Sarcee Agency. When material objects are lost, the possibilities of experience offered by their knowledge are lost to us forever – we are, as yet, without a workable microphysics. This raises the question of whether a

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[43] Indeed, Edward Said and many scholars who have drawn from his work have shown that social constructions fixing the identity of 'the other' are borne through a relational production of the self. E. W. Said, *Orientalism,* New York, 1979; K. J. Anderson, *Vancouver's Chinatown: Racial Discourse in Canada, 1875-1980,* Montreal and Kingston, 1991; also see I. Hacking, *The Social Construction of What?,* Cambridge, MA, 1999.

[44] An important study on this subject is D. Turnbull, *Masons, Trickster and Cartographers: Comparative Studies in the Sociology of Scientific and Indigenous Knowledge,* London and New York, 2000.

way of being human also fades into history as the ontologies of objects shift and change in meaning over time. Again Susskind's jealous professors standing on the edge of the black hole, watching the computer drift into infinite descent, offer a helpful analogy. They never see the laptop disappear into the black hole because the light emanating from the unit is not able to escape. Nearing the threshold, it seems to cease motion and flatten, as the light waves that project its appearance to the world outside are no longer able to overcome the endless descent into the mass of the abyss. The momentary image of the computer appearing frozen as it descends into black hole finds a useful parallel in a photograph. When Jacques-Louis La Monde Daguerre invented photography, he is said to have remarked: "I have seized the light, I have captured its flight." A photograph is like an event horizon because it captures a precise moment in time, freezing it for as long as the representation exists. But unlike Windbag and Goulash, we do have a form of microphysics here: we can ask how the meanings ascribed to the photograph depend on knowing the intention of the photographer, the cultural values of the viewers, and the social context at the time.[45] The photograph is an excellent example of an object that is a container for knowledge: it records a moment faithfully, but what we take from it depends on how we understand what it is, what it does, and who we are. In the 1930s, Walter Benjamin was fascinated with photographs for their twin ability to record and capture the past, preserving history in a way never thought possible. Benjamin drew his imagery from an earlier theorist of modernity, Charles Baudelaire, who described photography as 'the painter of modern life' for its

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[45] J. Crary, *Techniques of the Observer: On Vision and Modernity in the Nineteenth Century,* Cambridge, MA, 1990; M. Orvell, *The Real Thing: Imitation and Authenticity in American Culture, 1880-1940,* Chapel Hill, 1989; J. M. Schwartz, "Records of simple truth and precision": photography, archives, and the illusion of control, *Archivaria* 50 1-40; V. R. Schwartz, *Spectacular Realities: Early Mass Culture in fin-de-siècle Paris,* Berkeley, 1998; L. Wells (Ed), *Photography: A Critical Introduction*, London, 2001.

ability to freeze the rapid pace of change he saw in the city of Paris.[46] But Benjamin also saw a tragic twist to the freezing of time. He noted that the irreversible result of this modern invention meant that progress and uncontrollable momentum into the future seem to become more vivid as the mass of 'the past' grew year by year.[47] Like the vision of the computer falling into the black hole, photographs seem to freeze and then stretch further into the past, while imposing their fixity on the present. Working within the stretch of time, I treat the kinds of objects in this study – documents, images, and maps – like photographs that capture moments in time and moments of understanding. Where only the image remains, the task is to work out the 'microphysics' of information, to understand how the material objects relevant to the historical and spatial production of Canada mattered and made sense to the people who employed them.

1.2 The Historical Geography of Knowledge in Canada

Each chapter in this dissertation offers a case study of the spatial history of knowledge and the ontology of different objects in Canada during the hundred years following Confederation. Although each chapter contains a narrative, and some of these overlap with others chronologically, the guiding framework is chorological in that each chapter deals with the centralization and dispersal of knowledge. If a central Canadian challenge lay in the creation of a modern state out of a vast, unorganized, largely Native wilderness, then the spatial pattern of knowledge in Canada has generally been written as the pushing back of that darkness. Elizabeth

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[46] C. Baudelaire, *The Painter of Modern Life, and Other Essays,* London, 1964; W. Benjamin, *Illuminations,* New York, 1968; W. Benjamin and R. Tiedemann, *The Arcades Project,* Cambridge, MA, 1999.

[47] Pondering a Paul Klee painting, Benjamin famously compared modern society to an angel of history caught in the 'storm of progress' – the angel is blown relentlessly forward, yet "his face is turned towards the past. Where we perceive a chain of events, he sees one single catastrophe which keeps piling wreckage upon wreckage and hurls it in front of his feet. This storm irresistibly propels him into the future to which his back is turned, while the pile of debris before him grows skyward." W. Benjamin, Theses on the Philosophy of History, *Illuminations*, New York, 1968, 257-358.

Furniss correctly identifies this as part of a national frontier mythology in which wilderness is transformed by a clear sequence of exploration, settlement, and civilization.[48] In this framework, Canada is a spatialization brought into being by light pushing outward from the east. (Fig. 1) However, closer inspection reveals that while a map may represent what appears to be the known world, it may not explain *how* that world is known. Scholars interested in the geography of knowledge have begun to ask questions about how knowledge was circulated and verified, and how integral this network of human and non-human actors has been in establishing 'methods of long distance control.'[49] In early Canada, the circulation of scientific knowledge relied on a network of documents, telegraph lines, mail delivery, photographic reproduction studios, printing presses, and government offices. Rather than gradually pushing knowledge outward, these bodies and organizations couriered information between their officers and agents in the field and the centres of state bureaucracy, scientific study, and education.

A number of different places emerge as important in the chain of knowledge production between the frontier and the centres of government: these are what the British historical geographer Simon Naylor usefully calls the sites of science.[50] In Canada, the network for

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[48] E. Furniss, *The Burden of History: Colonialism and the Frontier Myth in a Rural Canadian Community,* Vancouver, 1999; Also see Mary Louise Pratt, who has looked at the way travellers transformed these limits as they moved outward, translating emplaced and local environments into the taxonomy of European science. M. L. Pratt, *Imperial eyes: travel writing and transculturation,* London and New York, 1992

[49] J. Law, On the Methods of Long Distance Control: Vessels, Navigation, and the Portuguese Route to India, in: J. Law (Ed), *Power, Action and Belief: A New Sociology of Knowledge?*, London, 1986. As an example, Miles Ogborn's study of the use of script and print in the establishment and administration of Dutch East India Company Rule in India builds on 'the geography of the book' to following the discourse of stock jobbing and trade speculation to the lived geography of the Dutch East Indiamen merchant vessels, arguing "the excretion of power and the making of knowledge" were deployed through forms of writing. M. Ogborn, *Indian Ink: Script and Print in the Making of the English East India Company,* Chicago, 2008, xxiii.Also see J. A. Secord, R. D. Apple, G. J. Downey and S. L. Vaughn, *Science in Print: Essays on the History of Science and the Culture of Print,* Madison, 2012; M. Ogborn and C. W. J. Withers, *Geographies of the Book,* Aldershot, UK, 2010.

[50] S. Naylor, Introduction: historical geographies of science: places, contexts, cartographies, *The British Journal for the History of Science* (2005) 1-12; S. Naylor, The field, the museum and the lecture hall: the spaces of natural

making knowledge mainly consisted of three of these sites. The field was the site where recording devices like cameras, phototheodolites, diaries, and sketchbooks were used to produce information about environments. As the examples of Dawson and other explorers show, the field was an arena where people constantly had to decide how to vest both truth and estimation in the same object. A second site was in what Bruno Latour has usefully called 'centres of calculation;' areas like archives, laboratories, and government bureaus that received and organized the information returning from the margins. Here, people faced questions about how to organize and store knowledge, and how to decide upon the categories into which to fit the work produced in the field or, in the case of the Canadian archives looked at in this study, sometimes from other centres in England and the United States. The final site of knowledge is yet again the frontier, where information translated through the archives and laboratories of the state returned to speak for environments. I treat this third site in this dissertation by looking at public history celebrations, museums, and Canadian schoolrooms, where everyday people were taught the practices of reading objects drawn through other networks of knowledge; of how to decipher truth from imagination and image from reality.

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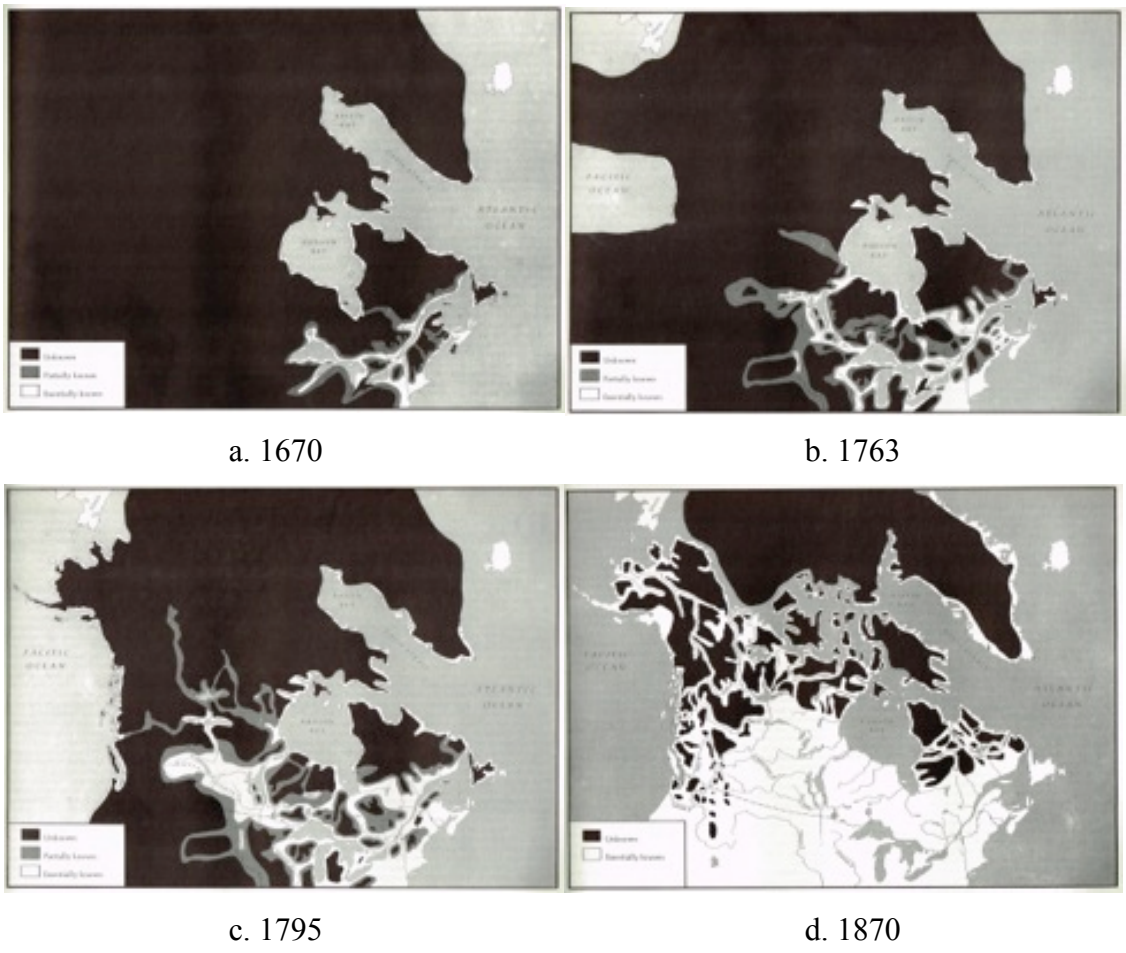
history in Victorian Cornwall, *Transactions of the Institute of British Geographers* 27 (2002) 494-513. c.f. H. Lorimer, Telling small stories: spaces of knowledge and the practice of geography, *Transactions of the Institute of British Geographers* 28 (2003) 197-217; C. W. J. Withers and R. J. Mayhew, Rethinking 'disciplinary' history: geography in British universities, c. 1580–1887, *Transactions of the Institute of British Geographers* 27 (2002) 11-29; J.-D. Dewsbury and S. Naylor, Practising geographical knowledge: fields, bodies and dissemination, *Area* 34 (2002) 253-260; F. Driver and G. Rose (Eds), *Nature and Science: Essays in the History of Geographical Knowledge*, Cheltenham, 1992; F. Driver, 'Making space: territorial themes in the history of science', a conference organized by the British Society for the History of Science, held at the University of Kent, Canterbury, 28-30 March 1994, *Cultural Geographies* 1 (1994) 386-390; H. Lorimer and N. Spedding, Locating field science: a geographical family expedition to Glen Roy, Scotland, *The British Journal for the History of Science* 38 (2005) 13-34; F. Driver, Geography's empire: histories of geographical knowledge, *Environment and Planning D: Society and Space* 10 (1992) 23-40; F. Driver, Geography militant: cultures of exploration and empire, (2001); I. M. Keighren, Bringing geography to the book: charting the reception of Influences of geographic environment, *Transactions of the Institute of British Geographers* 31 (2006) 525-540; I. M. Keighren, *Bringing Geography to Book: Ellen Semple and the rReception of Geographical Knowledge,* London, 2010; C. W. J. Withers, Authorizing landscape:«authority», naming and the Ordnance Survey's mapping of the Scottish Highlands in the nineteenth century, *Journal of Historical Geography* 26 (2000) 532-554.



a. 1670 b. 1763

c. 1795 d. 1870

Fig. 1. The receding frontier

A series of maps showing the progress of 'Canada's First National Map Agency,' the HBC, so-called by historical geographer Richard Ruggles. The maps also present a narrative about the frontiers of knowledge, which Ruggles depicts as pulling back the dark cloak of ignorance. Here, the black 'Unknown' spaces cede ground to those that are "Essentially Known" in white.

Source: Richard Ruggles. *A Country So Interesting: The Hudson's Bay Company and Two Centuries of Mapping, 1670-1870*. Montreal and Kingston: McGill-Queen's University Press, 1991, (a)27, (b)39, (c)73, (d)119.

This dissertation considers how information was gathered at the frontiers and returned for organization and analysis in the archive or laboratory, then repatriated to the frontier. More specifically, it examines the collection of environmental information; explores the public dissemination of geographical knowledge in professional and academic journals; considers how children were presented with such knowledge in school textbooks; and interrogates displays in heritage museums and celebrations. In this it takes a lead from Karl Offen who has suggested that the historical geography of science has been key in charting the spatialization of information, by "placing knowledge production at specific sites/sights, identifying how it travels and is received, ascertaining how knowledge is put together, by whom and to what ends."[51] To this I add the ontological point that at each of these sites and along all of these networks, people made decisions about how to store, disseminate, and retrieve knowledge out of different objects. The things I follow certainly had lives, and following how they were enlivened tells us about how Canadians began to think of themselves as they made knowledge about the country as a mosaic of regions. The spatial history of knowledge is therefore the story of imagining the modern state in Canada. My key argument herein is that producing a unified model of the country depended on producing both objects able to convey landscapes and subjects able to decode them geographically. Each of the following chapters deals in the main with a different period, a different site of making, organizing, or analyzing knowledge, and a different kind of object. However, a number of themes deserve treatment which cross all the chapters. These are archives and memory, the role of Canadian geography in the regional imagination, the

[51] K. Offen, Historical geography I: vital traditions, *Progress in Human Geography* 36 (2012) 527-540, 530.

importance of proper ways of observing and perceiving visual information, and the importance of the environment in telling Canada's spatial histories.

1.2.1 Archives and Memory

The second chapter examines the Public Archives of Canada (PAC), focusing on the establishment of the institution and the challenges it faced in gathering a documentary record of Canada under its first director between 1872 and 1901. Douglas Brymner was appointed by the Department of Agriculture to collect and preserve Canada's archival history from near scratch, a task he undertook first by travelling to the major cities and locating government papers. Over his tenure as archivist, Brymner travelled to London in search of colonial records for the country, eventually securing the papers of Governor Haldimand. As he gradually developed a copying staff at the British Museum and made further contacts in the United States, the archival reach of his small branch also extended. In this chapter, I use Brymner's correspondence relating to the internal affairs of the institution to set out a theoretical framework for studying the relationship between the geography of knowledge and the spaces of the archive. Beyond identifying pertinent records, the main problem Brymner and his archivists faced was in acquiring and transporting documents to Ottawa from the basements and recesses of former government buildings, or the offices of foreign governments unwilling to part with them. A second problem arose when important documents could not be moved to Ottawa and thus required duplication, raising the spectre of consistency and questions about the originality of the historical record. Both these issues were overcome by employing the 'spaces' of the archive. To ensure the quality of the original documents and copies, Brymner's approach was to monitor assiduously and detail the activities of his employees through surveillance of their work, overseeing all the

materials that entered the archives personally. I show that one of the early ways the archive became 'spatialized' was as a repository where the records of civil servants could be stored and evaluated. In this way, the quality and accessioning of the material record was co-productive of new forms of subjectivity for the emerging civil service bureaucracy. The archives also helped achieve a means of long distance control, whereby distant employees could be scrutinized for the quality of knowledge they were producing without having control over its content. A second spatialization dealt with in the first chapter employs Bruno Latour's concept of the 'centre of calculation' to look at how the expansion of knowledge about Canada was coupled with the centralization and control of information at Ottawa.

Here and throughout, this dissertation taps directly into what has been called the 'archival turn' in the humanities and social sciences. Broadly, this involves recognizing how the practices through which archival material is acquired, ordered, preserved, and circulated maintain relationships of power. More usefully the archival turn can be described through the new types of investigations it makes possible. On one level, the archival turn is a disciplinary change characterized by the reversal of the gaze from a kind of unproblematic outward stare to a critical look back at oneself to investigate the assumptions behind traditions of theory and practice. Here the archival turn is part of a self-reflective movement away from archivists' "professional myth of impartiality, neutrality, and objectivity" to more open practices, embracing the postmodern idea of multiple and subjective truths, and decentralizing structures of institutional power.[52] A second view would see the 'turn' as a means to investigate the archive as a dynamic site in the production of power/knowledge. In this case, historical researchers taking up the critique of

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[52] J. M. Schwartz and T. Cook, Archives, records, and power: the making of modern memory, *Archival Science* 2 (2002) 1-20, 1.

modernity established by Michel Foucault situate the archive as an important site of colonial rule and governance. Some have trained their critique on the social effects of archives, as in Ann Laura Stoler's examination of the way 'epistemic anxieties' about the status of mixed-race children in the Dutch East Indies were turned into political rationality by the archives of the Ministry of Colonies.[53] A similar investigation led by historian Antoinette Burton brought together a group of scholars to conduct the cultural ethnography of different archives. The 'archive stories' that emerge show how the totalizing appearance of the archive is really the result of multiple individual decisions, historical context, and the meanings vested in objects.[54] Yet another group uses the term 'archive' to analyze any site where ordering and power are foregrounded, such as libraries, museums, memorials, landscapes, and even bodies, as reflected in Miles Ogborn's explanation that the archive is best understood as any place for the 'double-production' of knowledge: a place where "certain singular and original material" can be localized and "a place through which those who wish to produce a certain sort of validated knowledge must pass."[55] A third meaning for the archival turn is the understanding that archives are not simply collections of 'certain original material,' but may be 'living' things that contain experiences and emotions that may be recovered if they are enlivened through art, reading, and

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[53] A. L. Stoler, *Along the Archival Grain: Epistemic Anxieties and Colonial Common Sense,* Princeton, NJ, 2009; A. L. Stoler, Colonial archives and the arts of governance, *Archival Science* 2 (2004) 87-109; The centrality of archives to colonial governance is demonstrated equally well by T. Ballantyne, *Webs of Empire: Locating New Zealand's Colonial Past,* Wellington, NZ, 2012; K. Burns, *Into the Archive: Writing and Power in Colonial Peru,* Durham, NC, 2010.

[54] A. M. Burton (Ed), *Archive Stories: Facts, Fictions, and the Writing of History*, Durham, 2005.

[55] M. Ogborn, Archive, in: J. Agnew, D. N. Livingstone (Eds), *The SAGE Handbook of Geographical Knowledge*, London, 2011, 88. For an array of studies see on libraries R. Craggs, Situating the imperial archive: the Royal Empire Society Library, 1868–1945, *Journal of Historical Geography* 34 (2008) 48-67; on museums S. M. Pearce, S. M. Pearce and P. für Museumsstudien, *Museums, Objects and Collections: A Cultural Study,* Leicester, 1992; on landscapes W. J. Turkel, *The Archive of Place: Unearthing the Pasts of the Chilcotin Plateau,* Vancouver, 2007; on societies C. W. J. Withers, Constructing 'the geographical archive', *Area* 34 (2002) 303-311; on bodies K. Yusoff, Antarctic exposure: archives of the feeling body, *Cultural Geographies* 14 (2007) 211-233.

performance.[56] This should not come as a surprise to scholars who work in archives: historical geographer Sara Mills has chosen the term 'spectral geography' to refer to the eerie intimacy one develops when reading archives of the deceased.[57] Likewise, Caitlin DeSilvey found in her curatorial reconstruction of an abandoned Montana homestead the "peculiar qualities and resonances" that develop when material remnants of the past were inventoried and boxed by artist-researchers going through a family's 'junk.'[58]

Whether the things found in archives contain traces of the past, implements of colonial rule, or records of the feeling body, archivists and historians know that information and material go together. The most popular expression of this pairing treats the information stored in documents as memory, a definition many archivists readily accept and have long acted upon as preservers of the past.[59] The fragility of the material traces of memory and the need to protect documents from environmental dangers and decay remain major concerns of most professional archivists.[60] Little wonder that Dempsey took the torching of the DIA records to heart. He witnessed not only the destruction of the records of the Indian Agencies, but the incineration of the memory of the Blood Indians, the tribe he belonged to through marriage. Yet another aspect of archiving involves determining what material becomes memory: selecting, classifying,

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[56] S. Osthoff, *Performing the archive: the transformation of the archive in contemporary art from repository of documents to art medium,* New York, 2009; S. Spieker, *The Big Archive: Art from Bureaucracy,* Cambridge, Mass., 2008; D. Taylor, *The Archive and the Repertoire,* Durham, 2003.
[57] S. Mills, Cultural-historical geographies of the archives: fragments, objects and ghosts, *Geography Compass* 7 (2013) 701-713, 707.
[58] C. DeSilvey, Art and archive: memory-work on a Montana homestead, *Journal of Historical Geography* 33 (2007) 878-900, 878.
[59] For the origins of much contemporary archival theory and practice, see T. R. Schellenberg, *Modern Archives: Principles and Techniques,* Chicago, 1956.
[60] H. A. Taylor, The collective memory, *Archivaria* 15 (1982-83) 118-130; L. Millar, Touchstones: considering the relationship between memory and archives, *Archivaria* 61 (2006) 105-126, 126. For Laura Miller, "the items we collect and manage are not memories but are tools used to support the creation, preservation, and resurrection of individual memories and, more importantly, their articulation as part of a shared identity."

describing, organizing, and retrieving the overwhelming volume of documentary information societies produce. These two properties of memory were at the forefront of Dempsey's mind as he watched the agency files burn. Indeed, the larger scope of the tragedy involved in the loss of the DIA records was not that the files had been destroyed. Rather it was that they were destroyed before being reviewed by an archivist qualified to decide what to keep and what to destroy. Dempsey was never more crestfallen then when he arrived at sites where he had already identified documents worthy of preservation, but found the DIA agents had thrown these in with the rest of the files he himself marked for elimination. By necessity, the preservation of certain documents goes hand in hand with the destruction of others. As a result, critical commentators point out that archives are not memories per se, but places "where complex processes of 'remembering' occur, creating and recreating certain kinds of social knowledge."[61] Within them, ideological and institutional protocols deem certain histories worthy of preserving and condemn others to silence. Decisions about what enters an archive therefore go a long way toward determining what voices historians are able to hear and the stories they are able to tell. For archival theorist Terry Cook, historical meaning occurs "not when the historian opens the box, but when the archivist fills the box, and by implication, through the process of archival appraisal, destroys the other 98 or 99 percent of records that do not get into that or any other archival box."[62]

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[61] F. X. Blouin and W. G. Rosenberg, *Archives, Documentation, and Institutions of Social Memory: Essays from the Sawyer Seminar,* Ann Arbor, 2006, vii. Joan Schwartz points out that archivists are keenly aware of their roles in the production of memory, so that the idea of archivisation as 'performance' is perhaps most appropriate.

[62] T. Cook, The archive(s) Is a foreign country: historians, archivists, and the changing archival landscape, *Canadian Historical Review* 90 (2009) 497-534, 511. Also see Peter Galison's provocative essay on archives and 'the history of secrecy.' P. Galison, Removing knowledge, *Critical Inquiry* 31 (2004) 229-241.

My contention is that the box itself plays an important role in making meaning. It size and dimensions outline what material is considered archivable; its rectangular shape invites the deposition of letter-shaped documents and vertical files; the folding lid or cover encloses the contents in a veil of secrecy, at once turning the contents into history awaiting discovery, while making the box for all intents and purposes look like any other; indeed, the outward similarity of one archival box to any other in the wider institution is a statement about modern organization. Ernest Brown, the figure at the centre of the fifth chapter of this dissertation, was vitally concerned with similar issues of memory and meaning and how history could reside in objects. Brown was an Edmonton photographer who spent the first 40 years of the twentieth century making and collecting images of Western Canada. His life's work provides a way into the spatial history of archives and memory in the early twentieth century. Brown is considered important because his massive collection of material was purchased by the province of Alberta to become their first archives. In various ways, I treat Brown through the archival turn by looking at the way his curatorial and selective practices shaped the meanings and material force of his photographs before they became the 'public memory' of the province. Brown was concerned with the decay of the past and the preservation of history and saw his photographs as modern memory objects capable of recording the emotional and experiential content of the pioneer founders of Western Canada. The way he used and circulated his images in museums, public displays, and teaching picture books tells a great deal about how he and contemporaries understood and sought to preserve the pioneer past of the West and used objects to evoke responses from viewers to shape their subjectivity. Brown is important figure because he used his images as material tools to deliberately create a sense of Western regionalism, even before

they became important regional symbols of 'Western past' once they were accessioned by the government archive.

1.2.2 Canadian Geography and the Regional Imagination

Ernest Brown's efforts to outline a regional history and geography for Edmonton and Alberta are part of a much larger story related to the making of modern Canada. Throughout the twentieth century, Canadians learned to think of themselves as belonging to a nation of regions. This way of thinking germinated slowly. It began in the early part of the century when geography, previously interested in the collection of facts and statistics, began to take interest in the earth as the home of humankind.[63] Following the pioneering work of Carl Ritter, geographers eschewed what was branded 'encyclopaedic study' in favour of seeing themselves as a thinking discipline. This acumen they demonstrated by bringing to the fore an interpretive device known as 'the natural geographic unit': the region, an area where a clear human response to physical conditions was apparent.[64] The idea of describing regions took geography by storm in the early-twentieth century because it seemed to offer a causal explanation for the spatial pattern of the earth. According to William Davis, co-founder of the Association of American Geographers, regional description was the purest goal of geography. In a long essay setting the path for the discipline written in 1915, he defined regional geography by what it was not. Davis lined up his forbearers and swung a wrecking ball at them:

> Regional description is not systematic in the sense of describing things of a kind together, for it treats them in their unsystematic natural grouping. It is not analytical, in the sense of striving to find out the origin and meaning of existing facts, for it uses already discovered origins and meanings as an aid in setting forth

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[63] C. Ritter, *Geographical Studies,* Boston, 1863; C. Ritter, *Comparative Geography,* Philadelphia, 1865.
[64] C. E. Marston, The value of regional geography, *Journal of Geography* 20 (1921) 311-314, 311; H. M. Strong, The significance of geographic regions, *Journal of Geography* 21 (1922) 348-353, 348-349.

> the facts as they exist. It is not historical, either in the sense of tracing the progress of advancing knowledge regarding an area … though it may use the results of historical study in giving a better account of actual conditions. It is not narrative, for it seeks to present persistent and objective facts rather than temporary and subjective personal experiences. Regional geography is however synthetic in combining the helpful results of all other modes of presentation in a vivid description of part of the earth's surface, so that all the geographical elements and activities there occurring, inorganic and organic, shall be appreciated in their true spatial relations.[65]

For Davis, systematic geography was mere classification, analytic geography only the assembly of facts, history and narrative were non-scientific and therefore subjective. The synthesizing approach alone offered practitioners the ability to make connections between the temperature patterns of different areas, the quality of the soil, the human settlement history, and the economic and political forces, and delivered them together in a neat package called a region. Borrowing this model, the earliest essays on regional geography in Canada thus attempted to explain the landscape of the country by underlining the opportunities and barriers major landforms presented to economic development. Writing in the early 1920s, C.D. Dawson of McGill University described the four Canadians regions – the 'central area,' the Maritimes, the Plains, and the western cordillera – as places "separated by barriers only relatively overcome by bands of steel."[66]

Canadian geographers did not aim for the intellectual heights of Davis and other presidents of the AAG like Nevin Fennemnn and Harlan Barrows, who wrote passionate essays

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[65] W. M. Davis, The Principles of geographical description, *Annals of the Association of American Geographers* 5 (1915) 61-105, 63.

[66] C. A. Dawson, Population areas and physiographic regions in Canada, *American Journal of Sociology* 33 (1927) 43-56, 43. C.f. W. L. G. Joerg, The subdivision of North America into natural regions: A preliminary inquiry, *Annals of the Association of American Geographers* 4 (1914) 55-83; J. F. Unstead, A synthetic method of determining geographical regions, *The Geographical Journal* (1916) 230-242; J. R. Whitaker, Regional contrasts in the growth of Canadian cities, *Scottish Geographical Magazine* 53 (1937) 373-379; A. S. White, The dominion of Canada: A study in regional geography 1, *Scottish Geographical Magazine* 29 (1913) 524-547.

on regionalism and human ecology, or to their contemporaries advancing the region concept in the U.K., historical geographers E.W. Gilbert and John Scott Keltie.[67] However, it was not long before other disciplines in Canada began to borrow the novel idea that geographic variation rested in the core of human affairs. Particularly interested were a generation of historians tired of regurgitating the history of Canada as the political evolution of British constitutional monarchy. Queen's University professor of economics W.A. Mackintosh saw the geography of the country as a means to escape the 'familiar school-book periodization' of British North America into "succeeding instruments of government."[68] He argued passionately in the pages of the *Canadian Historical Review* that economic geography was crucial to showing causality in history. Even the nation's preeminent historian, George Wrong, chair of the Department of History at the University of Toronto, intoned in a 1924 essay "if humanity is on the march, geography determines by what roads it shall proceed."[69] Investigating British colonial history, Wrong detailed the 'startling' interactions of man and nature, how the strength of river currents affected the size of empires, the relationship between climate and religious worship, and the folly of the English introduction of feral species like the rabbit into Australia.

It was largely through the pronouncement of historians searching for a nativist Canadian interpretation of the country's development that the regional theory developed in the 1920s took a firm hold in Canada. The clearest evidence of this is the lasting popularity of the Laurentian

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[67] J. S. Keltie, *Applied Geography: A Preliminary Sketch,* London, 1908; E. W. Gilbert, B. J. Hudson, W. H. Hudson, J. Joyce, L. Lee, R. Llewellyn, V. S. Naipaul, R. Pound, J. B. Priestley and C. L. Salter, The shaping of America, *Journal of Geography* 845 (1910); N. M. Fennemen, The circumference of geography, *Annals of the Association of American Geographers* 9 (1919) 3-11; H. H. Barrows, Geography as human ecology, *Annals of the Association of American Geographers* 13 (1923) 1-14.
[68] W. A. Mackintosh, Economic factors in Canadian history, *Canadian Historical Review* 4 (1923) 12-25, 12.
[69] G. M. Wrong, The teaching of the history and geography of the British Empire, *Canadian Historical Review* 5 (1924) 297-313, 297.

Thesis proposed by Donald Creighton and others in the 1930s, suggesting the central role of the St. Lawrence River in shaping a market network of staple exchange "around which Canada itself took shape."[70] Since then, regions have been understood in some variation or another as either the distinct political-cultural groupings of the country, like the Maritimes or The West, Ontario, BC, the North, and Quebec, or as derived from being dwellers in vast contiguous landforms such as the Prairies, the Canadian Shield, or the boreal forest. While the boundaries applied to these regions have seldom altered substantially, a renaissance in regional thought began in the 1950s and 60s, when a new generation of historians and geographers led in Canada by J. Lewis Robinson and J. Wreford Watson realized that the regional characteristics they used to explain economic and historical development were also etched deeply into the consciousness of the people who inhabited them.[71] Later, the same insight led another historian, J.M.S. Careless to pen his infamous argument that Canadians' apparent lack of national unity could be explained by "the experience of regionalism" in history. To Careless writing in 1969, the geographical segregation of the transcontinental mass into landforms, cultures, and livelihoods offered Canadians at best a set of 'limited identities.'[72]

In the space of fifty years, regionalism had moved from a revolutionary theory in the 1920s to an elementary structure of identity in the 1960s. Yet as John Warkentin points out,

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[70] D. Creighton, *The Commercial Empire of the St. Lawrence, 1750-1850,* Toronto, 1937 paraphrased in J. M. S. Careless, Frontierism, metropolitanism, and Canadian history, *Canadian Historical Review* 35 (1954) 1-21, 14.
[71] N. L. Nicholson and Z. W. Sametz, *The Regions of Canada and the Regional Concept,* Ottawa, 1961; J. L. Robinson, The problem of geographical regions in Canada, *The Canadian Geographer / Le Géographe canadien* 2 (1956) 46-49; J. W. Watson, Canada and its regions, *Scottish Geographical Magazine* 78 (1962) 137-149; J. W. Watson, Canadian regionalism in life and letters, *The Geographical Journal* 131 (1965) 21-33. It is very likely some of the Canadian geographers were influenced by J.K. Wright, the American 'geosophist' responsible for introducing the concept of subjective understandings of place to his colleagues during the 1940s. J. K. Wright, Terrae incognitae: the place of the imagination in geography, *Annals of the Association of American Geographers* 37 (1947) 1-15 . J. K. Wright, *Human Nature in Geography,* Cambridge, 1966
[72] J. M. S. Careless, "Limited identities" in Canada, *Canadian Historical Review* 50 (1969) 1-10.

regional descriptions of life and landscape in Canada have occupied geographers since the early 1800s and over that time innumerable models for dividing the country have been proposed.[73] The theory behind Canada's regional composition is based in a human-environment relationship wherein each of the country's characteristic landforms is seen to have limited or encouraged certain activities, which in turn shaped the settlement patterns and social life of the people there: farmers in the prairie west, fishers in the Maritimes, and so on. But while the regional understanding of Canada has changed and continues to change, the fundamental premise has always been that there are natural barriers within the country and innate attributes to the landscape that give rise to different industries. As Lewis Robinson explained in his seminal 1950s textbook on regionalism, "[s]ince physical features and resource distribution vary greatly over Canada, its geography cannot be generalized but should be studied regionally."[74]

While the scholarly contributions of Robinson and Warkentin to Canadian geography are beyond doubt, they also represent a circular logic that argues because the country is made up of regions it must be studied regionally. While the geographical variance of Canada is clear, I contend that the theory of human-environment relationships that gives rise to regionalism is not. In two separate chapters I present regionalism as a reflection of larger changes taking place in Canada's spatial history. During this twentieth century the role of and importance of geographers in Canada shifted dramatically. Virtually unknown (or unnamed) in the 1920s, geographers entered the ivory tower and firmly entrenched themselves in the bureaucracy of the modern state in about forty years. In universities, government offices, private businesses, and

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[73] J. Warkentin, *So Vast and Various: Interpreting Canada's Regions in the Nineteenth and Twentieth Centuries,* Montreal & Kingston, 2010, 1.
[74] J. L. Robinson and M. J. Robinson, *The Geography of Canada,* Toronto, 1950, ix.

public schools, the picture offered of Canada was increasingly told as one of the land and its divisions. Regionalism was not discovered during this period, but was augured into the Canadian imagination as a particular kind of geographical way of seeing, with the corollary claim that geographers were best equipped see and interpret the nation.

Regionalism as a way of seeing also influenced the development of tools that geographers used to record and decode landscapes. In the third and fourth chapters I situate the professionalization of geographers alongside the technologies and objects they employed, again paying attention to the ontology of objects and the new subjectivities co-produced with them. The third chapter deals with the most important new technology employed by geographers – aerial photography. It offers the most explicit use of 'ontological' thinking because it shows how the representational properties of aerial photographs were not simply given, but were negotiated using earlier meanings ascribed to photographs and maps. It examines the survey and geographic uses of high-altitude photographic images in Canada between the 1880s and the 1960s. While photographic surveying was practiced in the late-nineteenth century, it was not until the 1920s that airplanes provided surveyors with a mobile vantage point from which to view and map the earth below, revolutionizing the production of geographical knowledge. Using aerial photographs, photogrammetrists were able to map accurately remote portions of the nation, while photo-interpreters deciphered human settlement patterns and located the resources previously impossible to locate from the ground. I argue that new forms of vision offered through aerial photographs resulted from more than technological development. There was an epistemological gulf between the photograph and the map at the close of the nineteenth century: each testified to a different kind of knowledge, and each guaranteed representation by a different framing of objectivity. Combining the two into a new object, the aerial photograph, required

new understandings of the relationships between photographic and cartographic ways of seeing, and between technologies, bodies, and truth. As modern Canada increasingly depended on aerial photographs to map and locate resources, geographers positioned themselves as expert readers of these images, thus forming important connections between the practice of geographical seeing and the aims of the state.

The claim that geographers were best suited to interpret new information from the frontiers of the country was matched by arguments that they were well situated in the laboratories, libraries, and archives at Ottawa. Since 1890, the Government of Canada had appointed a Chief Geographer to keep the toponymic order of the nation. Initially a position inside the Department of Interior, the Chief Geographer spent most of the early-twentieth century doing next to nothing as a patronage appointment hidden in the Railway and Swamp Lands Branch. While the position was discontinued midway through the 1930s, the relationship that geographers enjoyed with the state deepened during the twentieth century. One change indicative of this new paradigm was the establishment of a chair in geography at the University of Toronto. Even though Griffith Taylor was given the position, it was Charles Camsell, alumni of the GSC and president of the Canadian Geographical Society who presented the bigger picture at a speech marking the occasion. While Camsell's speech offered the predictable narrative of Canada as an unknown country "only sketchily known" and waiting for geographers to shed upon it the light of modern science for the good of industry, he also specified the discipline was a 'composite' science drawing on other fields for its synthetic approach. Camsell told his audience that since it was Canada's diverse ranges of landform and climate, its mixture of lowlands, plains, and forests, that meant geography presented such problems to transportation, farming, and settlement, it therefore also made sense that a discipline used to synthesizing

diversity could meet the country's challenges. The analogy Camsell chose for the geographer of the 1930s was not a modern day explorer facing the wilderness; he was an architect and nation builder, prized for "his mastery of the art of design, and the skill in workmanship." Rather than a pioneer in the field shedding light in the darkness, Camsell's hero was the systematic and scientific bureaucrat, at work in the laboratory, basing his decisions "upon the intelligent co-ordination of full geographical knowledge."[75]

This entrenchment of the discipline into the state was based on geographers' new claims to be able to work with broad domains of knowledge and a new role for the geographer in the halls of government. While much information about the country had been centralized in archives at Ottawa, the growing sense was that a kind of disorder reigned over the institutional memory of the nation. Canada possessed a great deal of information about the country's landscape and history, but it seemed very little sense could be made of it: maps and records were scattered across various levels and divisions of government, and were not organized in a way that suited the various bureaucratic needs of a modern state. The danger of this disorder became clear during the Second World War through the utter failure of the Joint Information Bureau (JIB) to coordinate effectively Canada's cartographic services with those of the Allies. The shortfall of the JIB, the federal body tasked with interdepartmental communication, gave geographers the opportunity to demonstrate their ability as synthesizing thinkers. In 1947 the director of Canada's National Department of Defense Inter-Services Topographic Department proposed the establishment of a 'Geographic Bureau' to arrange and compile existing information about the nation and integrate it with the pace of new discoveries. The first of these geographer archivists

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[75] C. Camsell, What geography means to Canada, *Canadian geographical journal* 11 (1935) 214-215, 214.

was Diamond Jenness, a New Zealand-born anthropologist famous for his advocacy of First Nations in Canada and for pioneering studies of Inuit culture. Chosen to head the unit, Jenness soon determined that the branch faced an archival problem similar to that faced by Douglas Brymner seventy years earlier:

> A great deal of the material that should be brought together under the direction of such a Geographic Bureau is already available in governmental archives or records. … But this material has not been brought together and organized in such a way as to make it readily available for national or individual purposes. Indeed no one really knows the extent of the material that is available, or the location of much that already exists, scattered and unindexed, in Federal Departments, in Provincial files, in university records, in commercial institutions, in the archives of religious bodies, or in personal files and libraries. It is a reasonable assumption that the careful collection, collation and organization of this already existent material would go a long way towards the meeting of Canadian needs for geographic knowledge.[76]

The purpose of the new bureau was to facilitate the exchange and sharing of information between departments and ministries within government. Unsurprisingly, William Lyon Mackenzie King approved the establishment of the unit. As the Liberal leader himself had famously quipped in a speech to the House of Commons in 1936, "if some countries have too much history, we have too much geography." After settling on the name 'Geographical Branch' (GB) and with the support of the government, geographers began collecting physical information on northern Canada, a move considered vital to national defence in the emerging Cold War and important to sovereignty over the region. Although the Branch was initially conceived of as a defensive measure, Jenness and the directors who followed him quickly diverged from a military intelligence model and began hiring economic, historical, and urban geographers to work

[76] Library and Archives Canada, Natural Resources Canada fonds, RG92, "Geographical Branch" series, volume 1, file 1-2, Diamond Jenness, Proposal to create a Geographical Bureau.

alongside the physical researchers in gathering information about Canadian northern settlement and resource development potential.[77]

The establishment of the Geographical Branch marked a coming of age for the regional idea in Canada. The new methods of synthesis and science had become the shared language of civil servants and university chairs alike, while a new cadre of geographers taking specialized courses in regional study hoped to follow in their footsteps.[78] This newfound expertise also afforded an important new role to the geographer archivist in telling the spatial history of the country. The first goal of the Geographical Branch was to produce an atlas showing resources and development. The project would take ten years to complete and be the first national atlas produced since the First World War. Reflecting on the progress, Branch director Norman Nicholson equated the fifty years of spatial changes in the country with the changes in professional geography: he claimed the new set of scientific, comprehensive, and authoritative maps would fill a gulf that "from 1915 to 1958 is wide indeed for it extends from the receding, but at that time far from departed, horse-and-buggy age to the intriguing vista of the space age."[79] While the atlas was a centrepiece of the Branch's early efforts, it was not their only project: members were occupied hosting conferences and exhibitions, producing films and other educational material, and publishing a series of regional surveys, quickly abandoning their role

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[77] T. Lloyd, The Geographical Bureau, *Canadian geographical journal* 36 (1948) 39; A. H. Clarke, Contributions to geographical knowledge of Canada since 1945, *Geographical Review* (1950) 285-308.

[78] The Geographical Branch provides an interesting chapter in the history of geography as well. Throughout the twenty years of its existence, the Geographic Branch was hosted by the Department of Mines and Technical Surveys, The Department of Natural Resources, the Geographical Survey of Canada, never actually finding a permanent home until 1963 when it was ultimately disbanded and each of the sections under the broad term 'geography;' regional and historical, economic, physical, cartographic, toponymic, were fractured and absorbed effortlessly by other government bodies.

[79] Nicholson in Department of Mines and Technical Surveys Geographical Branch, *Atlas of Canada,* Ottawa, 1957, preface.

as intra-bureaucratic knowledge service and becoming a purveyor and promoter a form of a generalized Canadian geographical citizenship.[80]

The Geographical Branch is significant because it demonstrates the integral place geography and geographers were believed to have in the flow of information between the frontier and the centres of calculation in Ottawa. Even though the Geographical Branch was intended to collect and share within government information *from* the frontiers of development, much of its work involved accessing the existing archival records and exporting them from Ottawa *to* the rest of Canada. As I argue below, it is important to interpret the circulation of knowledge through multiple sites and scales. Because many of the early members of the Branch founded departments of geography after working with government, produced teaching atlases and educational wall maps, or wrote textbooks meant for use in Canadian schools and colleges, they had an instrumental role in teaching Canadians to view the country regionally.

1.2.3 Image and Perception

As Geographical Branch director N.L. Nicholson observed in his *Atlas of Canada* project, in order to communicate spatial information about the developing country, geographers had to figure out how to translate knowledge into representations that worked "best to depict the change and changing scene, to set down on paper a factual picture of the nature, extent and use of the physical resources of Canada."[81] But while Nicholson had faith that maps could keep up with what he called the 'elementary geographical facts' of a changing Canada, he also noted that the basis for knowledge could shift as well – his teams had recently discovered that in the

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[80] N. L. Nicholson, The Geographical Branch, 1947-1957, *The Canadian Geographer / Le Géographe canadien* 3 (1957) 61-68.
[81] Nicholson in Department of Mines and Technical Surveys Geographical Branch, *Atlas of Canada*, preface.

province of Nova Scotia, "which has been settled for some three centuries … the area of fresh water greatly exceeds the present 'official' figures."[82] If Nicholson was still convinced of the progress of the Branch, other geographers were more suspicious of the relationship between real knowledge and its image. An early example was J. Wreford Watson, who from 1948 to 1954 had preceded Nicholson as director of the Geographical Branch. Like his successor, at the Branch Watson had led government teams of scholars studying settlement patterns, economic relationships, and resource geography, but he was also a poet and humanist who thought deeply about the role of the imaginary. Years after his tenure, in the pages of the *Canadian Geographer* Watson offered a piece titled 'The Role of Illusion in North American Geography: A Note on the Geography of North American Settlement.' Reflecting on the European peopling of the continent, he explained how the 'mental map' of Cathay had guided the first explorers in their search for the Northwest Passage until the 'real geography' became known. He speculated on how imagining the interior plains as a barren wasteland forefended settlement in that region for centuries until science proved the theory wrong. Adapting the role of illusion to the time he was writing in the 1960s, he suggested that the belief Canadian settlement was 'moving north' over time was a perception that could not be supported by demographic evidence.[83]

For Watson, the geography of Canada had always been the product of two factors: the environment as it truly existed and the images people had of it in their minds. He understood these geographical imaginings as a powerful force in history that explained the geography of settlement, and was suggesting that at times they could "be more important than the supposedly

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[82] Nicholson, The Geographical Branch, 1947-1957, 68.
[83] J. W. Watson, The role of illusion in North American geography: notes on the geography of North American settlement, *The Canadian Geographer / Le Géographe canadien* 13 (1969) 10-27..

real geography of the earth."[84] While Watson's view may seem eerily postmodern, it is squarely based in the late nineteenth and early twentieth century, when a key subject of discussion in academic and pedagogic circles was the relationship between the direct observation of geographic phenomena and the corresponding terms and images that observer associated them with in the mind. Historians of the field have preferred to treat this period, called 'the new geography' by contemporaries, as the emergence of a discipline based on rigorous science, the development of grand theories of imperialism, or the nesting place of regional study.[85] These histories foreshadow later developments like the spatial science of the 1940s or the fracturing of geography into human and physical streams, and point to the increasing importance of academic views in global geopolitical thought.[86] However, as a result they have largely neglected this important story about the debates over truthful knowledge and visual perception. Indeed, AAG president William Davis's 1915 influential paean to the science of regional geography is followed by a much larger section on the value of what he called 'mental equipments;' the tools for assembling "observed facts and their mental counterparts."[87]

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[84] Watson, The role of illusion in North American geography, 10..
[85] B. Hudson, The new geography and the new imperialism: 1870–1918, *Antipode* 9 (1977) 12-19; L. Guelke, Regional Geography, *The Professional Geographer* 29 (1977) 1-7; D. R. Stoddart, The RGS and the 'new geography': changing aims and changing roles in nineteenth century science, *The Geographical Journal* (1980) 190-202; D. R. Stoddart, *On Geography and its History,* Oxford, 1986; D. N. Livingstone, *The Geographical Tradition: Episodes in the History of a Contested Enterprise,* Oxford, 1992; M. Bell, R. A. Butlin and M. J. Heffernan (Eds), *Geography and Imperialism, 1820-1940*, New York, 1995; Driver, Geography militant; G. J. Martin, *All Possible Worlds: A History of Geographical Ideas,* New York, 2005; C. W. J. Withers, *Placing the Enlightenment: Thinking Geographically about the Age of Reason,* Chicago, 2007; M. Heffernan, Histories of Geography, in: N. J. Clifford, S. L. Holloway, S. P. Rice,G. Valentine (Eds), *Key Concepts in Geography*, London, 2009; T. Cresswell, *Geographic Thought: A Critical Introduction,* Malden, UK, 2013; A. Godlewska and N. Smith, *Geography and Empire,* Oxford, UK and Cambridge, MA, 1994; A. Godlewska, Napoleon's Geographers: Imperialists and Soldiers of Modernity, in: A. Godlewska, N. Smith (Eds), *Geography and Empire*, Oxford, UK and Cambridge, MA, 1994
[86]M. Farish, *The Contours of America's Cold War*, 2010; N. Smith, *American Empire: Roosevelt's Geographer and the Prelude to Globalization,* Berkeley, 2004; C. W. J. Withers, *Geography, Science and National Identity: Scotland Since 1520,* Cambridge, 2001.
[87] Davis, The Principles of geographical description, 63.

Davis's explanation of the equipments tells much about the early-twentieth-century geographical concern over visual phenomena and their relationship to truthful knowledge. He begins with a simple geographical account of a "long, high ridge bearing a coniferous forest and interrupted by a steep, narrow gorge through which flows a large and rapid river." For Davis, the statement is loaded with a series of assumptions that the mental concept of a 'ridge' is the same both for the observer of the original ridge and the reader of the description. The problem arises when mental counterparts are assumed to be 'common property,' whereas in reality the qualities of the particular ridge are only 'longer' and 'higher' than other ridges of which the observer has knowledge. When the reader of the account applies the same variable dimensions to the other ridges *they* have known, the mental image produced may be much larger or smaller than the original scene described.

The trees in the forest, the angle and width of the gorge, the speed of the river, all were subject to shifting and variable basis of knowing Davis described as 'ontography.' While he saw the solution to the problem in a robust and meaningful terminology for geographers to use, Davis's skewering of the idea that a universal ridge was assumed to exist against which all ridges could be measured was a clever means of antagonizing the analytic geography he and his modern colleagues railed against. Because the analytic method began with universal ideas and applied them to the earth, it valued the classification of concepts and the arrangement of facts about them. A lesson in analytic geography thus consisted of what differentiated a mountain from a hill, in the abstract sense, before applying this knowledge to the world -- memorizing the height of Everest, for example. For Davis, this information was not pointless, but nor was it the way to truthful knowledge: it made the mistake of starting with the 'common property' – the idea of a ridge, river, forest, or gorge – and thus beginning with the image, rather than with observation.

In his survey of visual culture in humanistic geography from the 1970s onward, Richard Phillips surmises that "geographers have a two-fold interest in images" because they have been regarded as truthful recordings as often as imaginary projections coming from dangerously untrustworthy ground.[88] Yet Davis's injunction from 1915 tells us that the skepticism about images is connected to a longer genealogy of a geographic thought in the early-twentieth century involving the relationship between what was perceived in the mind and what was truthful in the world. Geographers described the concepts as the relationship between 'mental images' in the head and the 'concrete' nature of the known world, and saw their role as ensuring the proper connections were formed between the two. How they thought this occurred was connected to two major changes Davis was also describing: a shift from the factual character of analytic geography to the causal explanations offered by the synthetic method, and a shift from a systemic focus on universal concepts to one in favour of specific knowledge and first-hand experience. For Davis, regional geography was the apotheosis of these two new developments, the regional geographer should by synthetic; "[w]hatever be the area included in a regional description it can be known only by the summing up of many smaller areas," and base their work in direct observation; "each of which has been actually seen as a 'landscape' – in the larger sense of the word – by an observer on the ground."[89]

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[88] R. S. Phillips, The language of images in geography, *Progress in Human Geography* 17 (1993) 180-194, 180., 180.

[89] Davis, The Principles of geographical description, 63. The scholarship of Denis Cosgrove has done much to elucidate the role of landscape as a visual ideology. D. Cosgrove, *Social Formation and Symbolic Landscape,* London, 1984; D. Cosgrove, Geography is everywhere: culture and symbolism in human landscapes, (1989); D. Cosgrove and S. Daniels, *The Iconography of Landscape: Essays on the Symbolic Representation, Design and Use of Past Environments,* Cambridge and New York, 1988; D. Cosgrove, *The Palladian Landscape: Geographical Change and its Cultural Representations in Sixteenth-century Italy,* Leicester, 1993; D. Cosgrove, *Apollo's Eye: A Cartographic Genealogy of the Earth in the Western Imagination,* Baltimore, 2001; D. Cosgrove, *Geography and Vision: Seeing, Imagining, and Representing the World,* London, 2008.

In the fourth chapter of this dissertation, I look at the way these changes evolved in Canada during the early-twentieth century. Pedagogical images are the ontological subject of this section, which considers the role of objects in the dissemination of geographical knowledge to schoolchildren. I describe how the methodological shift from analytic to synthetic geography occurred in public schools, which roughly corresponded to a change from looking at the world as a whole using mathematics and theory to looking at discrete parts of the world using first hand observation methods like nature and type study. Taking a long view of educational practice, I argue that between the 1850s and the 1960s, a major transformation also occurred in the way pictures and images were thought to store and convey geographical knowledge. Davis's invocation has yet more substance to offer on this matter. His solution to the problem of variable and abstract terms used for the description of ridges, rivers, and forests was to suggest that regional geographers needed to develop their 'mental equipments' in a process of maturation from elementary to advanced methods of observation and description. Many geographers believed observation was not something as simple as the innate act of seeing, but could be improved, sculpted, and learned as long as the instruction provided was correct. They also saw the purpose of geographical education as the instruction of correct ways of seeing, writing copious amounts on how to teach geography as the formation of the correct mental pictures about the world.[90] The fourth chapter is thus based on how 'visual instruction' in geography

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[90] R. D. Calkins, The text, the course of study and the teacher, *Journal of Geography* 4 (1905) 164-167; A. D. A. Chapman, Modern geography—From a Canadian teacher's point of view, *Journal of Geography* 21 (1922) 98-105; M. A. Dorgan, Habit, memory, Imagination and appreciation in elementary school geography, *Journal of Geography* 26 (1927) 198-199; M. K. Genthe, Results to be expected from a school course in geography, *Journal of Geography* 4 (1905) 155-159; W. M. Gregory, Symposium upon what is most needed in the teaching of elementary geography, *Journal of Geography* 10 (1912) 245-262; B. Henderson, A. Sherman, K. McLaughlin, G. Storm and E. Parker, An outline of the course in geography in the university elementary school. III, *The Elementary School Journal* 18 (1917) 186-205; D. W. Johnson, Map drawing in the schools, *Journal of Geography* 8 (1910) 152-158;

appropriated the photograph as a pedagogic object that could teach and reveal how to develop the proper means of observation. Paradoxically, this led some geographers to argue that if the right images were used, and children trained to view them properly, they could learn to form 'mental images' about 'concrete' reality without actually having to observe it. This chapter makes clear that an understanding of Canada as a regional schema first required a change in how students learned to think synthetically and also in how they were enabled to 'look' at geographical phenomena.[91]

The fourth chapter tells a story about the co-production of objects and subjects in the spatial history of Canada: if schoolchildren began to think of themselves as observers able to perceive geographical phenomenon in images, they became Canadians able to locate regional variance in the clues offered by different landscapes. While the fourth chapter on visualizing geography analyses the ways in which geographers used images to train the 'mental map' of schoolchildren, disciplining both how they saw landscapes and understood images as 'pictured knowledge,' the same concern with the relationship between vision and truth is carried throughout this dissertation. In the third chapter on aerial survey, I look at how claims to objectivity in photographs were weighed against cartographic notions of truth by surveyors attempting to understand how rapidly changing technology was changing their role as field

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H. T. Lukens, Mental imagery in geography, *Francis W. Parker School Year Book* (1915) 7-20; F. W. Parker, *How to Study Geography,* New York, 1894; J. B. Reynolds, The regional method of teaching geography, *The Geographical Teacher* (1904) 224-228; E. M. Sanders, A Method of Teaching Geography by Means of Pictures to Little Children, *Geography* (1927) 136-141; A. G. Tansley, The problems of ecology, *New Phytologist* 3 (1904) 191-200; A. B. Warren Hilton, *Power of Mental Imagery,* s.l., 1920; J. A. Wood, *Pictures in the Teaching of Geography,* Winona, MN, 1900.

[91] That Canadian students should learn based on these methods is the final importance of Davis's speech: an American scholar delivered it. Geographers and educators in early twentieth century Canada tentatively adopted the new theory and methods being developed by their American counterparts and colleagues across the Atlantic in the UK.

scientists. Here it becomes clear that the ways in which surveyors understood their labour and bodies in relation to ground-based survey work informed they way they pictured places. I also show how geographers' claims to objectivity opened an important role for themselves as interpreters of photogrammetric images. The fifth chapter on Ernest Brown extends the discussion of visualization into memory and archives. Focusing on Brown's use of images as material embodiments of memory helps to explain why photographs played such an important role in framing the West as a region. Through his museums, teaching albums, and exhibitions, Brown instructed viewers how to perceive space and time in pictures, using visual culture to create a spatial history about the West.

Rather than reading and decoding images in isolation, visual culture examines the social, historical, and ideological settings in which regimes of viewership and display are situated – the way visuality is emplaced in culture. This dissertation reveals how the history of geography is usefully analyzed through the visual.[92] It advances the argument that the relationship between proper means of perception and truthful readings of landscape was central to environmental knowledge-making in twentieth-century Canada.[93] As geographers employed various objects

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[92] Visual culture builds on established practices of studying of images as 'texts.' Rather than use semiotics to decode the structures of thought wherein viewers receive and implant meaning in images, visual culture studies refute the idea that the visual is subservient to texts. Art theorist W.J.T. Mitchell usefully problematizes this relationship when he writes, "photography is and is not a language, language is and is not a photography." John Berger, Victor Burgin, and Stuart Hall who brought an anthropological approach to the study of images. J. Berger, *Ways of Seeing,* London, 1972; R. Barthes, *Camera Lucida,* New York, 1981; V. Burgin, *Thinking Photography,* London, 1982; S. Hall (Ed), *Representation: cultural representations and signifying practices*, London, 1997. N. Mirzoeff, *The Visual Culture Reader,* London, 2002; W. J. T. Mitchell, Showing seeing: a critique of visual culture, *Journal of visual culture* 1 (2002) 165-181; E. Edwards and J. Hart, *Photographs Objects Histories: On the Materiality of Images,* London, 2004..

[93] Following this approach, Gillian Rose and others have asked "how, exactly, is geography visual" by investigating the strong correlation between the discipline and imaginations of empire. Joan Schwartz's examination of the photographic work of the Geological Survey of Canada and James Ryan's study of Halford Mackinder's visual instruction at the Colonial Office are important milestones in the study of how images and photographs worked to 'picture place' and became a primary means for people to develop information about the world around them.

showing the landscape of Canada was best conceived as an assembly of regions, a way of *being* Canadian was also created that rested on the proper ability to decode those objects in order to see and interpret the spatial history of the landscapes they conveyed.

1.2.4 Nature, Past and Present

The subject of the sixth chapter is a historic trail connecting Edmonton to one of those 'places of last resort' at the edge of the modern frontier identified by JD Wood, the small town of Athabasca.[94] The Athabasca Landing Trail was a Hudson's Bay Company supply route used between metropolitan Edmonton and frontier Athabasca during the late nineteenth century. This chapter begins with the rediscovery of the trail in 1950s Alberta and analyzes its diverse archival life in the two communities. In three sections, it moves through a fifty-year period of attempts to commemorate, represent, and archive the history of the trail as it existed in the 1890s. As groups in Edmonton and Athabasca sought to reinvest the trail with meaning, they also represented

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However, as Rose and others have also shown, knowing 'how' geography is a visual discipline also means understanding the ways in which geography disciplines vision. Bruce Braun's investigation of what he calls the production of 'vertical territory' shows how the Geological Survey of Canada instructed Canadians how to 'read the rocks' to locate potentially valuable mineral. Situating the museum as an important site of geographical knowledge, Lianne McTavish has asked how children learned to look at the world in New Brunswick. These works demonstrate how geographical seeing was thought to make modern subjects capable of reading interpreting the landscape. G. Rose, On the need to ask how, exactly, is geography "visual"?, *Antipode* 35 (2003) 212-221.. J. R. Ryan, *Picturing Empire: Photography and the Visualization of the British Empire,* Chicago, 1997; J. M. Schwartz, The geography lesson: photographs and the construction of imaginative geographies, *Journal of Historical Geography* 22 (1996) 16-45; J. M. Schwartz, Agent of Sight, Site of Agency: The Photograph in the Geographical Imagination, Queen's University, 1998; J. M. Schwartz and J. R. Ryan (Eds), *Picturing place: Photography and the geographical imagination*, London, 2003; B. Braun, Producing vertical territory: geology and governmentality in late Victorian Canada, *Cultural Geographies* 7 (2000) 7-46; R. Phillips, *Mapping Men and Empire: A Geography of Adventure,* London and New York, 1997; L. McTavish, Learning to see in New Brunswick, 1862-1929, *Canadian Historical Review* 87 (2006) 553-581; also see D. Gregory, Emperors of the gaze: Photographic practices and productions of space in Egypt, 1839-1914, in: J. M. Schwartz, J. R. Ryan (Eds), *Picturing Place: Photography and the Geographical Imagination*, London, 2003; Grek-Martin, Vanishing the Haida. For responses to Rose, c.f. M. Crang, The hair in the gate: visuality and geographical knowledge, *Antipode* 35 (2003) 238-243; F. Driver, On geography as a visual discipline, *Antipode* 35 (2003) 227-231; D. Matless, Gestures around the visual, *Antipode* 35 (2003) 222-226; J. R. Ryan, Who's afraid of visual culture, *Antipode* 35 (2003) 232-237.

[94] J. D. Wood, *Places of Last Resort: The Expansion of the Farm Frontier in the Boreal Forest in Canada, c. 1910-1940,* Montreal, 2006.

dynamics of power between the two places, each articulating a different version of Alberta's historical geography. I show that the commemorative and archival practices that unfolded between the 1950s and the present used history to reflect and interpret contemporary geographical relationships between Edmonton and Athabasca. The value of thinking about ontologies is evident here because as historical promoters in Edmonton and Athabasca debated about the nature of the meaning of the trail, they conceived of it as possessing different qualities: sometimes it was an archive, sometimes the site of material culture, sometimes as a liminal boundary between town and country, past and present, north and south, or nature and culture. In each case I conclude that these stories of the trail and the archives constitute spatial histories, because their meanings were informed by representational spaces in the present.

This final case study goes furthest towards developing a theory and method for spatial history in Canada. I extend my study of objects and ontologies to a Canadian thinker who presaged much thought about the historical geography of knowledge. Along with George Wrong and W.A. Mackintosh, one of the early-twentieth-century economists who looked to geographical ideas in search of a uniquely Canadian manner of thought was Harold A. Innis. Innis wrote about the economic history of the country, but unlike his colleagues who presented geography as a limiting force to be overcome, he saw it as a vital factor in the development of Canada. While other historians valorized the heroic exploits of the fur traders against the wilderness or described the building of Dominion as overcoming the vast physical differences of the landscape, Innis proposed geography was conducive to the shaping of Canada. His 'staples thesis' presented the geographical movement of raw materials as the centre of Canadian political and economic development. The thesis observed that since the staple exchange networks followed the distribution of natural resources, and these networks preceded the political

development of the county, Canada evolved, according to Innis, "not in spite of geography, but because of it."[95]

Innis's themes loom large in the chapter on the Athabasca Trail. Its role in the nineteenth century was as connection between the remote fur country and river networks of the north and the modern geography of railways and cities to the south. Over the twentieth century, successive developments in timber, oil, and northern transportation in northern Alberta saw the muddy path replaced by roads, railways, highways, and pipelines, ushering in different economic and political relationships within the province. As Innis travelled Canada researching these modernizations, he began to see staple economies differently. Over time, his distrust toward the centralization of wealth and power in Canada led him to speculate how the economic geography of staples – lumber, fish, fur, and minerals – also acted as communication networks that aided in or inhibited the spatialization of ideologies.[96] I take up this later insight as a key part of spatial history and use it to analyze the public commemoration of the Athabasca Trail in the late twentieth century. By looking at the way people in the same period commemorated and understood its purpose, I show how the trail was reanimated as an exchange corridor that transported historical and geographical ideas. People used the trail to tell spatial histories of their towns, stories about the environment and the land, to interpret their regional place in Canada, and to make sense of progress and modernity that characterized their changing world.

On the one hand, spatial histories are the stories of how people made sense of nature and place; created and employed tools to tell themselves about the geography of their world; fit into a

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[95] H. A. Innis, *The Fur Trade in Canada: An Introduction to Canadian Economic History,* New Haven, CT, 1930, 39; H. A. Innis, *The Cod Fsheries; The History of an International Economy,* New Haven and Toronto, 1940.
[96] H. A. Innis, *Empire and Communications,* Oxford, 1950; H. A. Innis, *The Bias of Communication,* Toronto, 1951.

picture of modern Canada they expected to see; and developed a sense that the past of the landscape and their predecessors were important in understanding what the present means. On the other, doing spatial history is a mode of thought germane to the historical geographer. It reflects a critical frame of thought Michel Foucault once described as a history of the present. For him the object of the historian was not to portray change, but to understand difference. He described his work as counter-memory, anti-history, or, in the estimation of Hayden White, the 'disremembrance of things past.' Like this dissertation, spatial history is a way of asking questions about the way landscape and geography have informed not just our understandings of nature, but our understanding of ourselves as beings moving through space and time, past and present.

Fig. 2. Spatial history

Taken from the Quesnell Bridge over the North Saskatchewan River in Edmonton.

Source: Author, 2008.

Chapter 2: Archives and the State in Modern Canada

2.1 'Copying from Copies'

> With respect to copying from copies, there is nothing surer than the fact which the hon. gentleman has stated. It is utterly impossible to avoid mistakes if these letters are copied from copies; but we get no letters except those which are taken from original sources. We have those papers in London examined by two specialists—two gentlemen whose business it is to examine every single one of them and see that they are correct before they are bound, so that I think our papers will prove to be correct.
>
> - J.H. Pope, Minister of Agriculture, *Debates of the House of Commons*, 1885[1]

Like the honourable Mr. Pope, I get no letters except those taken from original sources. The archive where I am working abounds with them; papers you can run your hands over, see where the ink was blotted out of place or where a cup of tea was placed too long, read the hurried cursive script of an angry dispatch or be mesmerized by the elegant script of a literary author. They leave remnants of themselves on my desk and my clothing. They are disappearing before my eyes, and the brittle pages rip when you turn to the next too quickly. My original source is in fact J.H. Pope himself, who was defending the reliability of the sources kept in the Public Archives, the predecessor to the LAC. I spend hours daily in the same archives copying his letters and those of his adjunct, first archivist of the Dominion of Canada, Douglas Brymner, as I follow their efforts to collect and organize the early documentary record of the nation. The work I do entails copying from copies, because most of the digital images I create are taken from letterbooks written in the steady hand of a secretary tasked with copying all outgoing correspondences, circulars, and memoranda the Public Archives Branch created during the thirty years following 1872 while it remained under Brymner's control and inside the Department of

[1] J.H. Pope in Government of Canada, Official report of the debates of the House of Commons of the Dominion of Canada : third session, fifth Parliament ... comprising the period from the twenty-seventh day of March to the eighth day of May, 1885, in, Government of Canada, Ottawa, 1885, 1205.

Agriculture. I am copying almost everything they produced, but unlike Pope, when I create new copies from copies there is no worrying about how best to avoid mistakes. Not because two gentleman stand over my shoulders each day making it their business to examine the veracity of my work, but because my camera's ability to mechanically reproduce pages of text as they appear frees me from my all too human failings as a scrivener.

But there are other effects as well. Walter Benjamin noted that the cultural effect of photographic reproduction is a gradual erosion of the 'aura' of originality and authenticity of primary and unique works, a process that the enshrinement of original documents in archives has laboured hard to prevent.[2] The political power legitimated and derived from the possession and display of original works, Benjamin further contended, would be combated by the distribution of endless copies in democratic media.[3] If there is indeed a dialectic between representations of archival and political power then it was noted as early as 1859 by Lord Acton when he linked the opening of the Italian archives with the downfall of the government. Acton urged his fellow historians to uncover such holdings and make them visible in order to confront those who have "a strong desire to hide the truth."[4] Working in the archives making digital photographs then, not only reproduces the indexicality of the original manuscripts, it fundamentally augments their originality and their relationship within a broader context of meaning.[5] It is still worthwhile to

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[2] See "The Work of Art in the Age of Mechanical Reproduction" in Benjamin, *Illuminations*, 217-251.
[3] As a cultural Marxist in the 1930s, Benjamin believed television signalled the dawn of an age given to disperse productions of the proletariat.
[4] Lord Acton, quoted in I. E. Wilson, *Report of the Advisory Committee on Archives,* Ottawa, 1984, 19.
[5] This may have even been the case as early as 1898, the first year the Department of Agriculture spent $900 purchasing photographic apparatuses for the co-purposes of copying historical documents and registering patent claims on film. The photographic equipment was first purchased with the intent to copy patent documents and blueprints by that branch inside Agriculture. However, Brymner was allowed to use the photographic equipment to assist researchers desiring copies of documents rather than borrow them from the archives as had been the custom. This model was based on the British Museum, where researchers could request photographic prints for a fee or use the equipment themselves. Government of Canada, Official report of the debates of the House of Commons of the

wonder, as Benjamin did, how the development of new technologies affects the exchange rates between original and copy. James Opp examines this effect in his investigation of ethnographic photography made of the Tsu'u Tsina in 1920s Alberta. He demonstrates how the 'colonial legacies' of making ethnographic albums recede in digitized collections because the material elements of the statements they made are no longer tangible for the researcher. What Opp is saying is that a five-pound letterbook makes a significantly different physical impression than a JPEG. Moreover, the situated histories and flows of movement traced in the physical collection are changed: in the display of images, which tends to be online, "digitization brings all of these layers to the forefront simultaneously, sometimes in wholesale form, sometimes through fragments scattered about in other places." [6]

This chapter introduces the way that the content and form of knowledge - about history, memory, peoples, environments, and spaces - has altered over time. It begins a route into the spatial history of Canada by examining the political economy of documents and the politics of representing knowledge, and does so through situating national archives as modernist institutions deeply circumscribed by the limitations of cultural values and understandings of the late-nineteenth and twentieth centuries.[7] This approach may be illustrated by returning to Pope's defence of his copyists' reliability mounted against Liberal MP Charles Langelier's challenge that the Archives were incapable of creating unbiased sources of Canadian history. Citing the

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Dominion of Canada : fourth session, eighth Parliament ... comprising the period from the eighteenth day of May to the sixth day of July inclusive, in, Government of Canada, Ottawa, 1899, 5092.

[6] J. Opp, The colonial legacies of the digital archive: The Arnold Lupson Photographic Collection, *Archivaria* 65 (2008) 3-19, 18.

[7] Rather than envisaging a set battle between determinant and functionalist interpretations of social history. Determinant explanations argue that historical processes develop predictably out of structural forces at work in societies, whereas functionalist explanations suggest that changes arise in no particular pattern, but primarily to meet given social demands.

recent government publications of historical documents in the Province of Québec, Langelier explained to members of the House of Commons how the volumes received criticism for offering a faulty reflection of New France and "garbled and inaccurate" information. The explanation given by the critics, he continued, was "that the inaccuracies to be found in those documents were intentional on the part of the Government: that some changes had been made in order not to displease high ecclesiastical authorities."[8]

For Langelier, the Québec historians had endangered the goal of truth when they ignored the rules of sound archival work. After the Prussian historian Leopold von Ranke vitalized the meaning of archives in Western culture by publishing *Zur Kritik neuerer Geschichtschreiber* in 1824, professional historians sought to present the past *es ist eiglentich gewessen* (as it really was), rather than as the Church pleased. Ranke's entry to the archive alerted him that historical writing on Germany was mainly the work of historians copying one another, telling the same myths of their past. He proposed that in order understand *real* history, one must cut through these historians and head straight into the archives: written histories would no longer "be considered true sources."[9] Ranke championed his own method as a break with tradition; his raiding of the Vatican Archives for sources in German (rather than Catholic) history demonstrated his contempt for the ecclesiastical tradition and the lengths to which he would go to achieve scientific truth. Ranke's most lasting contribution as the 'father' of scientific history was the distinction between primary and secondary sources.[10] Primary sources were true

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[8] Charles Langelier in Government of Canada, Commons Debates, 3S5P, Mar to May, 1205.
[9] Leopold von Ranke, from *Allgemaeine Literature-Zeitung,* quoted in A. Grafton, *The Footnote: A Curious History,* Cambridge, 1997, 45.
[10] Bonnie Smith finds Ranke entering the 'documentary harem' to rescue the 'fairy princesses' trapped within. The gendered assemblage between the voyeuristic and predatory male historian entering the passive feminine archive and returning with materials to the all-male space of the seminar (etymology: semen) permeates the early language

observations *of* history and secondary were limited interpretations *about* history. Historians today recognize that what Ranke considered primary sources were only first hand *perspectives* on past events and not *history* itself.[11] What also needs to be recognized is that their status as 'original' documents really owed as much to the *voice* of the primary witness as to the documents' *place* in the archives. These questions certainly never crossed the minds of the Canadian copyists working at the colonial offices of London and Paris, who believed along with Ranke that the documents they were copying witnessed history. Nor did the distinction matter for Pope or Langelier, who saw truth in the written record, but disagreed over whether two men examining the copy-work really guaranteed its authenticity. The conflict between the two MPs was defused when the ultramontane historians in Québec were vindicated by another member who announced that "the cause of the inaccuracies and of the lacunaes in the documents was due to this fact: the proper place had not been gone to for the documents." The Government of Quebec had sent a man to Boston to copy documents there; the documents he copied from had been copied in Paris by a man working for the Massachusetts Government who, it was revealed, when he was finally located, did not copy anything irrelevant to the interests of his state.

These are the cultural situations in which the early work of archival preservation and copying in Canada were embedded. They must be kept in mind in order to understand how cultural certainties, like those Ranke, Pope, and Langelier produced changed over time and across space, through what might be called the historical geography of knowledge. Like digital image-making, historical geographies are active devices rather than passive descriptions—they

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of archival science. According to Smith, "enough evidence exists to suggest that part of the appeal of these new practices was the way in which the proposed a masculine identity worth of and equal to the arduous quest for objectivity." B. G. Smith, Gender and the practice of scientific history: the seminar and archival research in the nineteenth-century, *American Historical Review* 100 (1995) 1150-1176, 1153.

[11] Grafton, *The Footnote*, 60.

actively change the past landscapes they describe by modifying our representations of them. Recognizing that all types of knowledge have historical ontologies means adopting a scholarly position that retains both critical distance and a sense of reflexivity when using archival research as a methodology.[12] The historical researcher's voice, the voices of the past, and those voices forbidden to speak need to be central considerations when reconstructing the geography of archives and knowledge in Canada. Historical geographers concerned about whose voices are allowed to speak and where they draw their authority might follow Anthony Grafton's advice when he urges that we "develop this critique, abandon Ranke's own, retrospective schema and return – as he always urged – to the documents."[13]

A return to the documents in this case begins with the Government of Canada deciding in 1872 to create an archive in order to house their records. A question I will return to in the conclusion of this chapter is what regimes of certainty enabled the early archiving of some material as history, other material as geography, and other material as memory. Arriving there means interrogating the role of memory, history, and geography in the emergence of the modern Canadian state, and involves thinking critically and reflexively about the different meanings those documents were invested with and continue to produce.

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[12] Ian Hacking formulates this understanding of 'historical ontology' from his reading of Michel Foucault's *The Order of Things*: studying the 'historical ontologies' does not mean recovering how objects and experiences wax and wane through time as matters of inquiry. Foremost because 'object' and 'experience' also have histories, but also because studying the conditions for becoming an *object* or and *experience* previously unknown or undiscovered reveals the "ways in which the possibilities for choice, and for being, arise in history" (23). Objects (the human gene for example) exist and have effects before they are discovered and seen by researchers—obviously, but those effects also determine what kinds of meaning the actual appearance of the object might take (the 'gene' was theorized 100 years before it was discovered, to such an extent that the *actual* gene has failed to validate many of the mechanics and deterministic possibilities assigned to it). I. Hacking, *Historical Ontology,* Cambridge, MA and London, 2002; M. Foucault, *The Order of Things: An Archaeology of the Human Sciences,* London and New York, 2002, 1-26.

[13] Grafton, *The Footnote*, 61.

2.1.1 A Return to the Documents

Shortly after Canada's union through confederation in 1867, the intellectual elite in Ontario and Quebec began to question whether their now fellow citizens had much historical understanding of the new nation's development.[14] Of course the nation had a history, and it does still, but in the years following confederation no sufficient explanation existed of why Canada's geography looked the way it did. No 'grand narrative' told the history of Canada's growth. Moreover there were few clues in the new capital at Ottawa with which to start answering the question. The Government of Canada's decision to create a public archives in 1872 was meant to recuperate this history. The new Public Archives were to provision scholars with the records they needed. I will demonstrate here how the primary step in making Canada's history and geography truly known and readily available required much more than collecting and writing history. A return to the documents involved collecting and enshrining the relevant papers within the walls of the Public Archives. Examining the history of this endeavour does more than reveal how the Public Archives were built and maintained. It also reveals the problems that the nascent Canadian state faced in administering, from Ottawa, the vast territory it had recently acquired and local resistance to the growing authority of the central state to speak for the entire nation.

Claiming that the PAC (now Library and Archives Canada (LAC)) in Ottawa was a crucial institution in the period of modern state formation requires an answer to the relatively simple question of what the archives actually are. The first file in the collection containing the LAC's documentary record (RG 37) dates the idea of the archives to 1871, when the Senate received a petition from 57 prominent literary figures in Quebec. Citing the pressing nineteenth-

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[14] Wilson, *Report of the Advisory Committee on Archives*, 19-20.

century concern with national competition, they argued that "The authors and literary enquirers in this country are placed in a very disadvantageous position in comparison with persons of the same class in Great Britain, France and the United States, in consequence of being practically debarred from facilities of access to the public records, documents and official papers illustrative of the past history and progress of Society in Canada."[15] The petition was quickly forwarded to Agriculture and Statistics, the department then responsible for the arts, with instructions to review what could be done. The next year Douglas Brymner, a Montreal journalist with Protestant conservative roots was instructed to "gather, classify and make available for researchers, the Canadian records."[16]

In a physical sense, the task was daunting. In 1867 the Dominion of Canada comprised Nova Scotia, New Brunswick, and the lower sections of Quebec and Ontario. By 1872 it was a transcontinental nation including British Columbia, Manitoba, and the vast North-West Territories stretching from the 49th parallel to the Arctic coast. When he was hired as archivist, Brymner joined a fledging civil service staff of about 300 in Ottawa; a number that had not grown in pace with the jurisdictional boundaries of the new Dominion. He nonetheless took his new appointment seriously, travelling extensively in eastern Canada and locating records dating to the formation of the country, particularly those detailing the geopolitical formation of British North America and the creation of the Canadian North-West.[17] Brymner's travels quickly led to

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[15] Library and Archives Canada (LAC), National Archives of Canada fonds, Office of the Dominion Archivist, RG 37B, volume 104, file 1, letter from Henry H. Miles et al. to The Honourable Commons of Canada, 24 March 1871.
[16] Quoted in Wilson, *Report of the Advisory Committee on Archives*, 20.
[17] Brymner quickly seized upon the idea of collecting papers from the administration of Sir Frederick Haldimand. A British officer, Haldimand's career in Canada spanned the Conquest of Quebec in 1759 to the American Revolutionary War of 1775-1783. Haldimand's role in the geopolitical history of Canada made him an excellent candidate for the archive. An appointment to Governor of the Province of Quebec in 1778 meant he oversaw the re-

the conclusion that most of the relevant papers were held in family collections or were repatriated to the Colonial offices in London. The archivist saw his task as bringing order to this miscellany by copying, centralizing, and cataloguing the far flung material, believing he could rectify the lack of a coherent understanding of current Canadian borders and their historical development with the provision of facts.

Brymner immediately faced two problems that would dominate his life and work at the archives until 1901. They were the same concerns that provide the focus of this investigation into Canada's archival past: historical memory and geographical space. Though common knowledge held that the documentary record of Canada was largely in the possession of private individuals, Brymner's first report to the Minister of Agriculture complained, "it is exceedingly difficult to ascertain where they are, and there seems to be an unwillingness on the part of those who are said to hold them to let it be known."[18] As an officer of the government, Brymner came face to face with the politics of personal memory in the late-nineteenth century. While there is a wealth of important scholarly work commenting on the relationship between personal and public remembrance, or emphasizing the role of modern myth making in public commemoration, less work has asked how the joining of memory and material in the development of state archives is a project of modern state formation.[19] It is important to ask, by following Brymner, what justifications and rationalizations the early Canadian state found to validate the repatriation of

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settlement of the people British-aligned Haudenosaunee (Iroquois) and United Empire Loyalists after the Revolution.

[18] D. Brymner, Archives, Report of Mr. D. Brymner, in: J. H. Pope, *Report of the Minister of Agriculture of the Calendar Year 1872*, Government of Canada, Ottawa, 1873, 171.

[19] Some important works that do examine state-formation include Schwartz and Cook, Archives, records, and power: the making of modern memory; Stoler, Colonial archives and the arts of governance; Burton (Ed), *Archive Stories*; Blouin and Rosenberg, *Archives, Documentation, and Institutions of Social Memory: Essays from the Sawyer Seminar*; Stoler, *Along the Archival Grain*

the documentary memory of government, and whether the archives can be seen as the manifestation of a new social concern. The question was posed alarmingly in 1886 when Brymner was asked to deal with a letter Prime Minster John A. Macdonald received from a Hudson's Bay Company trader. The author claimed to have secretly acquired the Records of the Council of Assiniboia, the seat of government of the North-West, during the confusion surrounding the provisional government of Louis Riel. Riel and the Métis people of Manitoba resisted the annexation of the North-West Territory to Canada and formed their own government seventeen years prior in 1869. The earlier Macdonald government acted swiftly and violently to crush the native rebellion and vilify their cause. Though it was unclear whether the council records would damn Riel or Macdonald, it was evident enough that their possessor had no intention of handing the documents over and notified the government that "the time is not far distant when these records will come before the public as evidence in our favour."[20] Brymner acted on the challenge by immediately contacting his register of proper 'gentlemen' who oversaw the Canadian North-West and would know how to retrieve the records. He also harnessed the support of the Department of Justice to ensure the documents could be repossessed by law, claiming the necessity of settling historical questions meant the state was the legal possessor of documents relating to its past. Brymner's actions reveal how the system of Canadian archives was also a political instrument. The authority of the state over the memory of the nation was aided by his early efforts to create a documentary record of the Canadian past, even as he met with resistance from private and foreign actors unwilling to conform to the institutionalization of memory.

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[20] LAC, National Archives of Canada fonds, Office of the Dominion Archivist, RG 37B, volume 181, file "Letters Sent, No2," page 156, letter from Douglas Brymner to John Low, 28 January 1886.

If Brymner's first problem was historical memory, his second problem was geographical space. Accompanying every directive received from the Senate Committee and the Minister of Agriculture was the insistence that the Archives should represent the past of *all* of Canada. Orders from the Joint Library Committee concerning the initial design of the Archives reflected this concern: "the Committee would furthermore impress upon Government the necessity for including the new Provinces of *Manitoba* and of *British Columbia* within the scope of their investigations, in order to ascertain what materials may exist, of historical value in those distant parts of the Dominion, and to gather and preserve for future use, whatever papers or records could be found descriptive of the past History, and the progress of settlement and discovery in the Northern and Western parts of *British North America*."[21] Finding a balance in the documents between the old provinces and the new proved difficult since the scope of European settlement in the east outstripped the North-West by 250 years. Brymner wrote his superiors that the "changes that have taken place in the relation of the Provinces to each other since they came under British rule, the frequent removals of the seat of Government, … have rendered the task of collecting the archives in any complete form a task of more than ordinary difficulty."[22] His letters reveal an incommensurability in how *history* and *geography* would be incorporated into the central archive. In practice, geographical space was seen as secondary to the flow of historical time and subject to the "migratory character of former governments."[23] The arrangement of the archives around governments and individual figures meant that the

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[21] LAC, National Archives of Canada fonds, Office of the Dominion Archivist, RG 37B, volume 104, file 48, "Minutes of Proceedings of the Senate of Canada. Friday, 9th May, 1873. Report of the Sub-Committee appointed by the Joint Library Committee on Historical Documents."
[22] Brymner, Report on Canadian Archives for 1872, 171.
[23] LAC, National Archives of Canada fonds, Office of the Dominion Archivist, RG 37B, volume 104, file 1, letter from Henry H. Miles et al. to The Honourable Commons of Canada, 24 March 1871.

documentary past of the same geographical *place* might appear in a variety of different *places* within an archive designed to reflect the political history of the country. Places like the Province of Manitoba doubly frustrated attempts to collect and systematize archives because of their diverse political pasts and documentary records that seemed to be non-existent—or worse, in the hands of someone threatening government with an historical exposé.

Collecting and reconciling history and geography formed the bulk of Brymner's efforts during his thirty-year tenure as archivist. Primarily this was a problem of organization, and Brymner often expressed anxiety over the loss of control that might result if too much information overextended his capacity for record keeping. The work of organizing documents was not just a space problem however, it was also a spatial problem—the archives' task was to represent a diverse historic and geographic landscape *out there* in the boxes and shelves held in the basement of the East Block of Parliament. Though never explicit, the work Brymner meant to accomplish was also the reconciliation of these two spaces; one an environment and territory stretching across the continent and one being created inside the system of government at Ottawa; one a very real and changing place and one a powerful representational assemblage. Brymner's time went to administering and maintaining this relationship. Much of this dissertation will ask questions, in turn, about how this relationship between real and represented landscapes was distributed and re-invoked through the work of historians, geographers, and the people living in those places Ottawa hoped to represent. It is also important to ask in what ways the real and the representational fed into, replaced, and challenged one another in the work of organizing archival knowledges.

2.1.2 Organizing Modernity

Brymner's goal was a historically and geographically complete Canadian archival system. When asked why the Parliamentary Librarian or the Senate Clerk could not be assembling the same material as archivists in their own repositories, the practical Scot hurled back a blunt reply: "in so far as regards the history of British North America, every document relating to it should be found in the Archives Office, even such as at first sight may appear to have with it only a remote connection."[24] Although archiving dates to the Classical period, the *systematic* and *total* principles behind archives in the nineteenth century require that the Public Archives of Canada be interpreted using the cultural framework of their age. This is the project of social improvement described as modernity.[25] Modernity is often characterized as the belief in progress, the faith in science, the veneration of military empires, the devotion to market capitalism, and the civilizing value of European culture. However, the term also expresses a deep humanist ambivalence to these ideas. Being modern also means being concerned about industrial pollution, racial segregation and genocide, widespread poverty and displacement. Modernity includes the critique that the progressive motivations and many advancements of the age have also created a number of undesirable ends. The paradox between the utility of progress and the problems it generates means interpreting modernity is a complicated and fraught

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[24] D. Brymner, Report on Public Archives, in: *Report of the Minister of Agriculture for the Calendar Year 1882*, Government of Canada, Ottawa, 1883, 6.

[25] For a useful discussion of modernity, see. Z. Bauman, Modernity, in: P. Beilharz (Ed), *The Bauman Reader*, Malden, MA, 2001, 163-172. For Bauman, if it is to mean the rejection of the old in favour of the new, it "may be better appreciated s the condensed expression of a revolution taking place in the European mentality; of the new feeling of self-reliance and self-assurance, readiness to seek and try unorthodox solutions to any current trouble and worry, belief in the ascending tendency of human history and growing trust in the capacity of human reason" (164). In this sense, Bauman insists that the 'constant state of change' that characterizes modernity is best expressed in that moderns are conscious of their own historicity. This makes enormous successes possible according to him – first of all, that progress is possible and achievable. Second of all, that modernity eventually "has come closer than any other known civilization to the status of genuine universality." (166)

problem—one made more difficult because the modern period has not ended. British sociologist John Law suggests a useful way to approach modernity should not include evaluating its failures against its successes. Instead we should try to understand the ideals this world collectively stood upon. Law suggests that the *belief in the possibility of organization* be first among these: "the hope or the expectation that everything might be pure, [and] the expectation that if everything were pure than it would be better than it actually is."[26]

The work of the Public Archives of Canada during the late-nineteenth century was part of this search for purity. Brymner expressed no doubt as to whether the documents he was collecting would eventually be reliably ordered and organized into a reliable picture of Canadian history. His early correspondences are largely letters between offices determining whose cataloguing method should be used, and what categories the records fit into. A question never even presented for debate was where the documents should be kept—Ottawa was the unquestioned centre and it followed as a given that organization and order could only be achieved once documents arrived there. Many advantages were expected to follow from ordering such a vast collection of knowledge in the capital, and Brymner's correspondences suggest that the archives were functional in a number of respects. Historians and researchers would make only a single trip rather than travelling the country widely for sources; because Agriculture also conducted the census, Branches of government could access the *same* statistical information stored in the archives; and barristers working on property claims were able to contact the archives requesting information from land registries to aid in case decisions.

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[26] J. Law, *Organizing modernity,* Oxford, UK & Cambridge, MA, 1994, 6-7.

It is useful to think through the role of archives as centralizing institutions operating to aid in the collection, organization, and circulation of information. Sociologist Bruno Latour has offered a general explanation of how these processes work in a model he calls 'science in action.'[27] It contends that the actual work organizational centres do determines what counts as 'knowledge' in the first place. The key distinction Latour makes for the study at hand regards the nature of 'grounded' versus 'universal' knowledge. The 'action' describes the means by which *implicit* information (grounded knowledge that only made sense in place) needed to be made *explicit* (universal and exchangeable) in order to be moved back to the centre and processed. Because institutions like the Public Archives needed to bring information to the centre for organization and use, they could collect only transportable forms of knowledge. This suggests that the challenge of the archives at Ottawa was transforming local information into the knowledge of the nation state. Even though documents seem highly portable, Brymner's early efforts at archival collection were frustrated by the *placed*-ness of certain kinds of information and the difficulties of bringing material to Ottawa. Families were not willing to give up their personal collections, the War Office's records in Canada were deemed too sensitive for a Canadian civilian's eyes to look over, the old government records in the basement of the Jacques Cartier Normal School in Montreal were so degraded that they could not be moved without being destroyed—the documents themselves appeared to be crucial supports used for holding up the floors above. Though Brymner received express instructions that "any documents not required to be retained by local authorities, and which they might be willing to assign to the care of the

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[27] B. Latour, *Science in Action: How to Follow Scientists and Engineers Through Society,* Cambridge, MA, 1987, 215-257. Cf. D. N. Livingstone, The spaces of knowledge: contributions towards a historical geography of science, in: D. Gregory, T. Barnes (Eds), *Reading Human Geography: The Poetics and Politics of Inquiry*, London, 1997, 27-47.

Dominion should be transferred to *Ottawa"*, knowledge, in many cases, was being held firmly in place.[28] Information came to Ottawa through a process of selection and often through a transformation of the way it could be found locally. It came in the form of *dis*-placed documents containing information useful to the state. Historians wishing to recover agency in the archives must also remember that 'voice' *as well as* 'place' were silenced and buried by posterity.

One method used to loosen documents from the moorings of place was to find ways of making knowledge mobile. Sometimes this was accomplished through negotiation, as when the British War Office's representative in Canada agreed to give Brymner a collection of documents in Halifax providing that "the Dominion Government will produce the originals, or copies of them whenever required, and that a complete catalogue of the documents to be transferred to the War Office as soon as made."[29] Other times it was achieved less diplomatically. One angry letter from a professor in Prince Edward Island complained that an Archives Branch employee had 'borrowed' a birth and death registry dating from the French rule over Isle St. Jean and agreed to pay for the privilege of copying it. But the archivist absconded with the book, "carrying it with him up and down the country, and copying its contents for the enrichment of the Gov't Office."[30] Documents were also in danger of becoming *too* mobile for the archivists' liking. When a group of crates containing British military records was loaded onto a ship about

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[28] LAC, National Archives of Canada fonds, Office of the Dominion Archivist, RG 37B, volume 104, file 48, "Minutes of Proceedings of the Senate of Canada. Friday, 9th May, 1873. Report of the Sub-Committee appointed by the Joint Library Committee on Historical Documents."
[29] LAC, National Archives of Canada fonds, Office of the Dominion Archivist, RG 37B, volume 104, file 32, letter from War Office Head Quarters at Halifax to Douglas Brymner, 7 October 1873.
[30] LAC, National Archives of Canada fonds, Office of the Dominion Archivist, RG 37B, volume 130, file 8365, letter from John Caven[?] to Douglas Brymner, 5 June 1901.

to leave Halifax, Nova Scotia Records Commissioner Thomas Akins enlisted the aid of the Archives Branch to prevent the vessel from disembarking until the documents were left behind.[31]

Overall, the mobilization of knowledge was usually accomplished by the work of copyists. With lengthy instructions on how to reproduce original documents in formats convenient to the archives in Ottawa, a group of men and women fanned out across Canada, the United States, England, and France, tasked by Brymner to return with Canadian history in hand. Faced with mounting pressure in 1888 from the Department of Agriculture to justify his expenditures of copyists working abroad, Brymner promised the 'best-methods for maintaining a direct supervision from this department over the work now in progress." Copyists would have to provide lists of records that indicated, "The name of each copyist employed to be placed opposite each volume, with the number of words and the folios they made that have been copied during the month."[32] Achieving 'science in action' from this distance meant regulating divisions of labour, formulating strategies for enumerating productivity, and assessing the economics of producing mobile knowledges. Every day the copyists' work was submitted to their supervisors with "the dates on which it is received, when began to be revised, when finished, the number of words extended into folios, may be ascertained at once."[33]

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[31] D. Lacasse and A. Lechasseur, *The National Archives of Canada: 1872-1997,* Ottawa, 1997, 4.
[32] LAC, National Archives of Canada fonds, Office of the Dominion Archivist, RG 37B, volume 183, file "Letters Sent, No.3," page 11, letter from Douglas Brymner to John Low, Acting Deputy Minister of Agriculture, 21 March 1888.
[33] LAC, National Archives of Canada fonds, Office of the Dominion Archivist, RG 37B, volume 183, file "Letters Sent, No.3," page 11, letter from Douglas Brymner to John Low, Acting Deputy Minister of Agriculture, 21 March 1888. It was the similar practice of Roman strichometry (the assaying of the amount of lines copied by a scribe in any given day) and the utility of managing a scroll-based empire as opposed to clay tablets that led Canadian economic historian Harold Innis to conclude that "Monopolies of knowledge had developed and declined partly in relation to the medium of communication on which they were built." The phrase seems particularly relevant here as well. H. A. Innis, *Empire and Communications,* Lanham, MD, 2007, 192.

When not governed by Brymner's management, the necessities of politics were prone to intervene in the quest for a true historical picture of Canada. In 1888, Brymner received instructions from Canadian High Commissioner Charles Tupper that the Public Archives copyists working in the London Colonial Office should redirect their efforts around the needs of other branches, reporting that "Information has been much wanted for the Indian Department" and that they should skip working on Lower Canada and concentrate on Upper Canada for the benefit of the state.[34] This is one way we may begin to see archival collection as similar to conducting ethnographic 'fieldwork' in the past. The same practices of mapping cultures that bound militant geography and anthropology to the nineteenth-century expansion of empire were not simply matched in passive historical writing.[35] For historians of the same era, *the past* was their field: a vast expansive hinterland at the fringes of the territorial metropole. The Public Archives were instrumental in forging a connection between rule over historical territory and sovereignty in the geography of the political present. For example, when asked by the Indian Department to provide information on the land use history of the Cayuga, Brymner's consultation of Governor Simcoe's papers revealed no records of British land purchases from the Natives, with the concerned addendum that every "examination shows more clearly the carelessness with which the records were kept."[36] As Native land claims became a pressing issue for Brymner's contemporaries, the Public Archive's ability to provide legitimacy out of the

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[34] LAC, National Archives of Canada fonds, Office of the Dominion Archivist, RG 37B, volume 183, file "Letters Sent, No. 3," page 81. Douglas Brymner, Archives Memorandum, Monthly Returns for the High Commissioner, 2 August 1888.

[35] The literature on anthropology and empire is vast. Good places to start are R. Corbey, Ethnographic showcases, 1870-1930, *Cultural Anthropology* 8 (1993) 1993; T. Bennett, *The Birth of the Museum: History, Theory, Politics,* London & New York, 1995. On geography and empire, see Godlewska and Smith, *Geography and Empire*; F. Driver, *Geography Militant: Cultures of Exploration and Empire,* Oxford and Malden, 2001.

[36] LAC, National Archives of Canada fonds, Office of the Dominion Archivist, RG 37B, volume 183, file "Letters Sent, No. 3," page 78, Douglas Brymner, Memorandum, Removal of Cayuga Indians to Canada, 31 July 1888.

colonial past and make that information mobile became a crucial part of governmental rule. The state had no desire to confront silences in its own archive, preferring, rather, to call upon the archival voice of authority for total and organized knowledge. Shortly after its creation the Public Archives began to function as a space of authority from which civil servants and politicians were able to draw in order to speak for the transcontinental realm.

2.2 The Spatial History of the Archive

The legitimacy of state sovereignty also relied on government voices – public officers in particular – saying the right things. Throughout the late-nineteenth century, Acts were established to ensure that civil servants' first loyalty was to the state. The creation of this non-political class of government employee mortared the bricks of responsible government for the Province of Canada in 1849; if government *politicians* needed to be responsible to the people, *civil servants* were to be responsible to government itself. The "Canada Civil Service Act" of 1868 formalized this distinction and established the Civil Service Board, the body that officially hired Brymner as a Senior Second Class Clerk. The process was a formality—his was a patronage appointment similar to most men working Ottawa's 'inside service.'[37] Patronage, the regular practice of returning party favours with government positions, was the target of reforms introduced by the "Civil Service Act" of 1882. Its passage undid the board that hired Brymner and replaced it with a new Board of Civil Service Examiners. Although in one historian's estimate they did little more than prevent the "appointment of illiterates," for the first time a non-partisan board reviewed the merits of candidates for government service.[38] While patronage remained a problem, the role of the public servant was changing into that of an efficient worker

[37] K. Kernaghan, *Bureaucracy in Canadian government; selected readings,* Toronto, 1973, 156.156.
[38] R. M. Dawson, *The Civil Service of Canada,* London, 1929.

faithful to the state and above political influence. At the end of the nineteenth century, the state (even one ridden with patronage) was growing concerned with the behaviour of its employees. Where this behaviour concerned the practical governance of Canada, those who managed the quotidian administration of the nation also served as the template upon which the rules of conduct were authored. Civil servants experienced the new 'government of government.'[39]

Ian MacKay and Bruce Curtis have demonstrated how the notion of liberal subjectivity (practices of the self) and liberal governmentality (the rationality of rule) outlined by Foucault and his many followers offer valuable ways of interpreting state-formation in early modern Canada.[40] Their arguments are concerned to show how 'the social' was at once constructed out of a series of governmental calculations (census forms, statistical enumeration, inspections), and while simultaneously imagined as an object around which the notion of 'the state' could take effect and gain the appearance of power. However, these authors offer only hints to suggest how the formation of welfare-state sovereignty was realized and accomplished through space. In *Governmentality and the Mastery of Territory in Nineteenth-Century America,* historical geographer Matthew Hannah divides the growth of techno-political administrative capacity into two processes extending state formation through spatializations. These are the segregation of any branch of the state apparatus from 'external' or 'partisan' influence; and the re-configuration

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[39] M. Dean, *Governmentality: Power and Rule in Modern Society,* London and Thousand Oaks, CA., 1999, 199.
[40] B. Curtis, *Building the Educational State: Canada West, 1836-1871,* London, ON, 1988; B. Curtis, *True Government by Choice Men?: Inspection, Education, and State Formation in Canada West,* Toronto, 1992; B. Curtis, The Canada 'Blue Books' and administrative capacity of the Canadian State, 1822-1967, *Canadian Historical Review* 74 (1993) 535-565; B. Curtis, On the local construction of statistical knowledge: making up the 1861 Census of the Canadas, *Journal of Historical Sociology* 7 (1994) 416-434; I. McKay, The liberal order framework: a prospectus for a reconnaissance of Canadian history, *Canadian Historical Review* 81 (2000) 617-645; B. Curtis, *The Politics of Population: State Formation, Statistics, and the Census of Canada, 1840-1875,* Toronto, 2001; B. Curtis, Surveying the social: techniques, practices, power, *Histoire sociale / Social History* (2002) 83-108.

of decision-making according to standard and uniform logistics.[41] Such operations work in two ways. In the primary instance, the state emerges in space as a *discrete* political consciousness, while in the second a territorial politics is reified *outside* this space through which the rational liberalism of this governing consciousness may be extended. We have seen how the Public Archives were positioned at the centre of this political territory, but it is worth investigating what internal spatial configurations were required to legitimize it—how was the government of government applied through archival practice, and what spaces needed to appear for it to occur?

On the thirtieth anniversary of Confederation, July 1st, 1897, Douglas Brymner received a letter from one of his employees, Miss L. Brayden, a clerk assisting the Archive's chief book-binder, Mr. Pennington. "Dear Sir," she began, "Having found out through Mr. Pennington that the reports which he wrote about me and my work have been bound for the Archives, with your permission, I will address you on the subject and vindicate myself as far as possible."[42] The 'reports' she sought to counter were in fact hand-written notes passed to Brymner from Mr. Pennington, detailing the daily routine followed by Miss Brayden under his supervision. Unbeknownst to Brayden, her surveillance was initiated a year earlier not by Pennington, but by the Dominion Archivist himself:

> Dear Sir [Brymner],
>
> Sir. According to your request, I herewith send you a daily record of Miss Braden's movements during business hours.
>
> Saturday May 2 Arrived 8.45

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[41] M. G. Hannah, *Governmentality and the mastery of territory in nineteenth-century America,* Cambridge and New York, 2000, 37.
[42] LAC, National Archives of Canada fonds, Office of the Dominion Archivist, RG 37B, volume 122, file 6146, letter from L. Brayden to Douglas Brymner, 7 July 1897.

> Worked 10 minutes, the rest of the forenoon was devoted between reading and going upstairs, (to gossip, I presume.)
>
> Monday May 4 arrived 8.30
> Cutting out dress patterns up to 9.30
> Upstairs … 10.00
> Taking books apart … 10.30
> Reading Citizen … 11.00
> Upstairs … 11.30
> Writing private letters … 11.50
> Afternoon arrive … 1.30
> Taking books apart …. 2.00
> Upstairs …. 2.30
> Taking books apart … 3.00
> Writing private letter … 3.30[43]

In the late-nineteenth century ministers and departmental heads were obsessed with the distribution of memoranda, edicts, resolutions, and circulars calling for the increased policing and curtailing of the social networks alive in the civil service. Employees were not to visit and speak with one another during lunch, were to remain in their offices during lunch hours, and needed to ask permission to deliver materials to other departments.[44] Secretarial 'gossip' became a palpable fear of the men tasked with heading the new bureaucratic machinery of state. As Ottawa's governing capacity expanded, social life on Parliament hill was reconceived as a disease festering beneath the clean order and control of a healthy government. Brymner and Pennington were judicious in ferreting out and exposing misconduct. Following Monday's revealing schedule, they discovered Brayden "knitting fancy work" for fifty minutes and spending half that time "curling her hair" on Tuesday. On Thursday and Friday of the same

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[43] LAC, National Archives of Canada fonds, Office of the Dominion Archivist, RG 37B, volume 122, file 6146, letter from Pennington to Douglas Brymner, 9 May 1898.

[44] The sustained effort to purge social interaction from the civil service is revealed by the amount of incoming memo's Brymner received on the subject from other senior officers. Also see R. M. Dawson, Canadian civil services before Confederation, *Canadian Historical Review* 5 (1924) 118-131; R. M. Dawson, The Canadian civil service, 1867-1880, *Canadian Historical Review* 7 (1926) 34-45

week, four hours of work on the Archive's payroll allowed her to finish the dress for which she had cut the cloth on Monday. The next week she worked only '6 hours, out of the 6 days,' with the rest spent at gossip and dressmaking. The case against Brayden was stacked: gender and the new public service conduct of professionalism were levelled against her, and her male supervisor in the binding office escaped reproach for the same slack work behaviour. By the end of May, along with his third report, Pennington felt confident enough to ask his superior whether "as one week is almost a repetition of another is it necessary to continue it?"[45] Brymner had him file weekly reports on Brayden until August.

All of this is documented in the RG37 collection. The documents pertaining to Brayden are sequestered beneath a letter from the Deputy Minister of Agriculture on 5 May year, informing Brymner "that the Minister has decided, after consideration of Miss Braden's case, that her salary shall be increased to $400. per annum. The Accountant was duly instructed with regard to this increase, and I intimate the Minister's decision to you as Miss Brayden's salary is paid out of the Archives Appropriation."[46] Brymner's decision to start monitoring Brayden only *after* receiving this letter reveals the level of control he maintained over the Public Archives. It also shows the interventions he tried to forestall. A superior officer in government making decisions about his staff transgressed into Brymner's space of authority, revealing a disconnection between the appearance and the practice of control. Indeed, intentionally or not, Brayden's defence revealed this gap as well by turning the regulatory capacity of the archivist against him: "In doing as I did during office hours, I was only following Mr. Pennington's

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[45] LAC, National Archives of Canada fonds, Office of the Dominion Archivist, RG 37B, volume 122, file 6162, letter from Pennington to Douglas Brymner, 26 May 1896.
[46] LAC, National Archives of Canada fonds, Office of the Dominion Archivist, RG 37B, volume 122, file 6146, letter from William [?], Deputy Minister of Agriculture to Douglas Brymner, 5 May 1896.

example. He always found time to read the newspapers, and to do other work with which I often helped him at his request. I always kept my work well in advance of him so that he never was without employment on account of my doing other work and, as you told me the same rules applied to both of us, I naturally thought that I would be allowed the same privileges." Power, Foucault reminds us, is never so fleeting as when it is enacted as domination.[47]

The question of power lurking here is when and where did the spatial division between social life and government life begin to appear, and by what means. A possible answer emerges by thinking about the archives as the space of state memory. Matt Matsuda's study of modern memory in France during the Third Republic recommends un-thinking the idea of memory as a universal human condition. We should also consider 'memory' a useful tool of social control necessitated by the growing and increasingly mobile populations of nineteenth-century Europe. To deal with their new citizenry, the French state and other centralizing governments married new ideas about memory with devices for 'remembering' their citizens. Matsuda reads nineteenth-century ideas like passports, photographs, and registration cards as the material uses of memory because the kinds of information they contained were drawn from scientific developments in psychology – hereditary mental disorders, anthropometric data, environmentally determined characteristics. Memory devices were integral to ideas of social improvement in modern states. Police were given phrenological photographs to identify criminal traits and prevent recidivism and state officers checked racial characteristics of citizens for biological

[47] Foucault and Gordon, *Power/knowledge*; M. Foucault, *The History of Sexuality: Volume 1: An Introduction,* New York, 1978

defects imagined to be dangerous to the health of the nation.[48] Memory thus became an important tactic in monitoring and establishing control over increasingly unfamiliar populations. Brayden's letter is truly revealing, because her self-identification as a good civil servant—indeed, the origin of her own self-government—was enforced by the space created by Brymner's archive: "I feel that through all these years of service I have conscientiously done my duty so far as it was known to me and it does not seem just to have these charges against me bound up in the Archives without protest."[49] She was aware of the state's emerging ability to 'remember' its population, and her letter demonstrates that the archive could be used as a memory device designed to discipline conduct. The same central space of organization and control providing authority for the state over territory was for Brayden much more immediate: a space of fear for being archived, and also a desire to be archived and remembered well.

In this chapter I have contended that the Public Archives of Canada functioned as the modern memory of the state, as an institution at the centre of knowledge calculation and redistribution, and as an imagined space of social order and control. But the Public Archives was also a space of representation, and here I follow Derek Gregory's advice in treating representation as a series of "practices and performances that *enter fully into the constitution of the world*" rather than a signifying system.[50] Representation is not just a cultural practice; it is the way culture is enforced by praxis. It is a 'way of seeing' that is also performed regularly, rather than a way of talking about seeing or a theory of historical interpretation. A fundamental

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[48] For more on the relationship between 'archives,' organization, and the state, see A. Sekula, The body and the archive, *October* 39 (1986) 3-64; S. Lalvani, *Photography, Vision, and the Production of Modern Bodies,* Albany, 1996, 3-64.
[49] LAC, National Archives of Canada fonds, Office of the Dominion Archivist, RG 37B, volume 122, file 6146, letter from L. Brayden to Douglas Brymner, 7 July 1897.
[50] D. Gregory, (Post)colonialism and the production of nature, in: N. Castree, B. Braun (Eds), *Social Nature: Theory, Practice, and Politics*, Malden and Oxford, 2001, 85.

epistemology of modernity holds that moderns approach the world 'as a picture' in the same way we do a photograph, and that this relationship between representation and the represented is constantly 'performed' and 'exhibited' as universal in the writing of history and geography.[51] I will interrogate the performances of this practice between the archive and the territories it sought to represent.

Brymner's tenure as Dominion Archivist coincided with the formation of a modern state in Canada and a 'return' to documentary sources of Canadian history—those material traces of the past that would clarify the ambiguous interpretations of the Canadian past and lend legitimacy to the present. In 1895 the Royal Society of Canada honoured him for this work at a meeting where President J.M. Le Moine gave the fellowship's annual address on the subject of 'The manuscript sources of Canadian history as revealed by our archives.' He praised what Brymner had delivered unto the nation, not simply an archive but an enunciative position from which the historians of Canada could speak the voices of the past. For Le Moine, Brymner recovered a past territory that legitimated the dominion of the present. "With the wealth of material already garnered in our archives and daily added to, may we not view Canadian history at no distant future as a stately fabric? Shall we compare it to an antique temple, with graceful portico and many ample and ornate columns on which posterity will inscribe among other respected names, those of Masores, Wm. Smith, Robert Christie, Bibaud, Garneau, Ferland, Faillon, Turcotte, Sulte, Casgrain, Withrow, Hannay, Verau, Miles, Murdoch, Watson, Dent,

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[51] J. Fabian, *Time and the Other: How Anthropology Makes its Object,* New York, 1983; D. Gregory, *Geographical Imaginations,* Cambridge, MA, 1994; W. Thongchai, *Siam Mapped: A History of the Geo-body of a Nation,* Honolulu, 1994; Dening, *Performances*; D. Gregory, *Explorations in Critical Human Geography,* Heidelberg, 1998; G. C. Spivak, *A Critique of Postcolonial Reason: Toward a History of the Vanishing Present,* Cambridge, Mass., 1999; T. Mitchell, *Questions of Modernity,* Minneapolis, 2000; D. Scott, *Conscripts of Modernity: The Tragedy of Colonial Enlightenment,* Durham, 2004; J. Pickles, *A History of Spaces: Cartographic Reason, Mapping and the Geo-Coded World,* New York, 2004; Cruikshank, *Do glaciers listen?* .

Brymner, Kingsford, Begg, Ganong."[52] To Le Moine and these historians, archival access to the past enabled access to a landscape of representation that was untrammelled, direct, and complete. It only needed to be given voice by historians. Going into Brymner's house of documents meant "You have watched Canadian history at its rude birth." What Brymner and his copyists had achieved was the folding of representations of the past into the historical terrain of Canada. In as much as *archives* were the material assemblages of modern memory and power/knowledge, where the Canadian nation took on the order of the archive *history* was enacted as a series of deployments into space and across territory that enabled the effects of representative depth. As Le Moine had earlier noted "It is now apparent to careful observers that the *lacuna*, hitherto sorely left with respect to reliable records for describing a later period—the English regime—is being rapidly filled in. In more than one promising essay, is apparent the beneficent influence of the new light—of wider horisons[sic]—opened out."[53] The question of *geography* remains, and what emerges is a picture in which the centralized state in Ottawa practiced a spatial politics of colonial governmentality: Brymner's first archive was the dispersed and disparate landscape out of which he needed to transform, copy, and mobilize knowledges that were bounded by local meanings. Once repatriated to the institutional centre of Canada, this knowledge could be transformed into history to be re-placed and performed along the boundaries of a modern state. This dissertation follows Brymner's design by moving between the centre and the periphery, mapping a spatial history of archives in Canada that is keen to the tension between Ottawa's imaginative geographies and those identified as local and placed in ephemeral territory.[54]

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[52] J. M. Le Moine quoted in President's address, *The Canadian Magazine* 5 (1895) 489-490, 489.
[53] [sic] J. M. Le Moine, Style of travel of the high French officials at Quebec in olden times, *The Land We Live in* 3 (1891) 4-6, 4.
[54] E. Manning, *Ephemeral Territories: Representing Nation, Home, and Identity in Canada,* Minneapolis, 2003.

Chapter 3: Canada Between the Photograph and the Map

3.1 'Photographically Yours'

Looking back from the 1940s on the development of aerial surveying, former Dominion Land Survey topographer Ralph Purser celebrated the benefits Canadians had received from air photographs. Geologists could see the rock formations that might yield valuable minerals and ores, foresters could assess the value of timber stands from 10,000 feet, transportation engineers could plan the most efficient highways, cities could be designed from above, and the network of Canada's rivers offered themselves up to systematic damming and water-power development. The aerial photograph was a key allowing expert interpreters to read landscapes for their economic potential. 'Without them,' Purser reflected, 'it would be difficult to imagine how the advancement of the past two decades would have been possible.'[1]

The greatest advancements in air photography were unquestionably in survey and mapping. At the time Canada planned to embark on an aerial photography reconnaissance plan during the 1920s, fifty years of ground survey had mapped 240,000 sq. miles of Canada. In only three years of air survey this area was doubled, making it seem that the long, laborious work of mapping Canada on the ground was coming to an end.[2] Extensive fieldwork followed by a winter spent making plans at a draftsman's table was being reduced to a number of hours in an airplane and a handy set of aerial images. By the 1940s the National Air Photographic Library at Ottawa held three million images, providing both a topographic archive of the country and a

[1] R. Purser, Geography from the air, *Canadian geographical journal* 22 (1941) 146-149, 147.
[2] A. M. Narraway, The surveyor, the aeroplane, and Canada, *The Canadian surveyor* 4 (1933) 3-9.

valuable reference for energy and resource prospectors.[3] Both private companies and Canadian government services were free to use this image set, and at least one US firm described visiting Ottawa as an 'indispensable phase' of all their petroleum explorations.[4] One promoter neatly described the new world of cartographic knowledge aerial photography was creating: 'If maps could write letters, they would sign them 'Photographically Yours.'[5]

For this library of the national landscape to claim such promise also required expertise. To meet the demand for air photograph interpretation a body of specialists was called upon to read and interpret the high altitude photographic maps. Learning to read and understand aerial images became a central aspect of visual training in schools and universities, and those who did not choose government employment could find interpretation work with mining companies, shipping lines, and energy developers.[6] They were conceived of as so integral to national defence that many countries circulated public information booklets on how to read and interpret aerial photographs in the event of an invasion.[7] Aerial photographs were everywhere something modern needed to be; textbooks, advertisements, planning documents, atlases, and window displays. In the first half of the twentieth century, new technologies of mapping, the Canadian state, and modern development all seemed to converge around a unique object – the aerial photogrammetric image. Yet, for all the claims of the work aerial photographs could do, one group above all claimed to be able to make them do it. The first North American standard

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[3] J. F. Grant, Air photographs speed reconstruction, *Canadian geographical journal* 33 (1946) 18-37.
[4] L. A. Woodward, Aerial photography as a map substitute, *The Canadian Surveyor Special Edition. Proceedings of Thirty-Seventh Annual Meeting of the Canadian Institute of Surveying held at the Chateau Laurier, Ottawa February 2nd and 3rd 1944*, (1944), 25.
[5] J. J. Klawe, The role of photography in mapping Canada, *Canadian geographical journal* 51 (1955) 190-195, 191.
[6] S. M. Fairchild, Aerial photography, Its development and future, *Annals of the American Academy of Political and Social Science* 131 (1927) 49-55.
[7] D. L. Linton, Interpretation of air photographs, *Geography* 31 (1946) 89-97.

Manual of Photographic Interpretation left no question of how air images should be used or by whom: 'Everyone is in some degree a photo interpreter. However, photo interpretation as practiced by the amateur is not to be confused with the professional interpretation done by the geographer.' Because they studied human and natural patterns on the earth, the instructions continued, geographers made expert photo interpreters able to carry out the discovery, identification, and enumeration of national resources that could be found upon it. This pairing of aerial photography, geographical vision, and state development was uncomplicated: 'In the book of Genesis we learn that it was God's plan to give man 'dominion over all the Earth … and to subdue it. This MANUAL is an attempt to describe one of the most valuable means to that end that man has yet devised.'[8]

In this chapter I follow the development and introduction of high-altitude photographic mapping and interpretation in Canada. Rather than attempt to trace the evolution of the technology or follow those who implemented it, an important story told elsewhere, my aim here is to outline the emergence of the aerial photograph itself.[9] Where did this object come from? Opening a well-worn photogrammetric textbook from the 1970s – the period when aerial mapping and interpretation was at its peak and 'every square inch' of Canada was mapped – a popular origin story is discernable.[10] The author tells us that photogrammetry, or the

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[8] R. S. Quackenbush, Development of photo interpretation, in: R. M. Colwell, American Society of Photogrammetry (Eds), *Manual of Photographic Interpretation*, Washington, 1960, 1; R. M. Colwell and American Society of Photogrammetry (Eds), *Manual of Photographic Interpretation*, Washington, 1960, vii.

[9] For illuminating accounts see D. W. Thomson, *Men and Meridians: the History of Surveying and Mapping in Canada, Volume 3, 1917 to 1947,* Ottawa, 1969; D. W. Thomson, *Skyview Canada: A Story of Aerial Photography in Canada,* Ottawa, 1975; G. McGrath and L. M. Sebert (Eds), *Mapping a Northern Land: The Survey of Canada, 1947-1994*, Kingston and Montreal, 1999; S. B. Shaw, *Photographing Canada from Flying Canoes,* Burnstown, ON, 2001.

[10] P. R. Wolf, *Elements of Photogrammetry with Air Photo Interpretation and Remote Sensing,* New York, 1974, 1-11. Cf. L. M. Sebert, *Every Square Inch: The Story of Canadian Topographic Mapping,* Ottawa, 1970.

measurement of the earth's surface using images, was born through the convergence of three separate histories. These were the discovery of the rules of perspective in the eighteenth century, allowing for cartographic survey and the accurate calculation of measurements between two points on a projection beyond an observers' plane of vision; the development of the photographic camera during the 1830s, to fix the observer's view on a piece of film; and finally, the invention of the airplane, to raise the photographer's point of vision from its terrestrial moorings and into the sky.

In this account the aerial image is a latent tool, a simple and prefigured object waiting for the unification of its more complex parent technologies. Once map, photograph, and flight were joined, the photogrammetric image could emerge and be perfected. This story, still told in remote sensing texts, hides the historical making of the air image as objective and representational, projecting into the past the assertion that a photograph taken from the air was equal to a map of the earth, and leaving unquestioned its corresponding use as a geographical tool. The first flights testing aerial photography for geography and map-making bore out the very same claims. Arnold Sandwell, who worked on the Canadian Air Board's survey flight experiments over Ottawa in 1920, exclaimed that camera work from airplanes produced images 'just like a map,' an impression shared widely by his colleagues in Canada, the US, and England.[11] The astonishment of these pioneers was in one sense ordinary—aerial photography successfully confirmed exactly what the collective geographical imagination predicted, and captured total landscapes with 'all the manifestations of action that are so notably absent from a

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[11] A. Sandwell, The camera takes to the air, *Canadian geographical journal* 1 (1930) 61-79, 6; M. N. Macleod, Mapping from air photographs, *The Geographical Journal* 53 (1919) 382-396; H. E. Ives, *Airplane Photography,* Philadelphia and London, 1920; Canada. Board on Aeronautics, Report on Experimental Aerial Survey at Ottawa, 1920, in, Government of Canada, Ottawa, 1921.

printed map' where 'town houses and streets appeared as if laid off by a draftsman's rule.'[12] The chief of the Canadian air surveys chose the metaphor of a 'living' map, 'with its puffing toy trains, its moving boats and autos on river and road.'[13] These stories of discovery verified the latent value of aerial images for cartography. Proclaiming them to be map-like signalled the correspondence between landscape and its record, and the great possibility of universal vision the air view offered. What the same accounts do not reveal, however, is why the earth pictured from above looked so 'closely akin to a map' in the estimations of all observers. Indeed, why did it *not* seem appropriate to say the earth looked exactly like a photograph?

Considering this question requires understanding the great work the aerial photograph was being called upon to do – record the earth with the accuracy of a map but also display it with the detail of a photograph. While bringing map and photograph together into a new object at once seems relatively simple, only a few years earlier at the turn of the twentieth century the two forms of representation offered very different accounts of landscapes, were used for different reasons, and guaranteed objectivity in dissimilar ways. After the Great War, they could be found joined together in a new design: the aerial photograph. To claim that an aerial photograph looked like a map was to say it *represented* things the way a map would, rather than a photograph, and was to invest in what this new object could be. Following Ian Hacking, I offer here an historical ontology of the aerial photograph, examining the ways in which the boundaries defining it from other things were traced, the horizons of use that were opened up to it, who was called upon to articulate its meaning, and how it was given the power to represent. The

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[12] W. T. Lee, Airplanes and geography, *Geographical Review* 10 (1920) 310-325, 310.
[13] Quoted in J. A. Fletcher, Report of aerial topographic survey committee, *Annual Report of the Association of Dominion Land Surveyors Together with the Papers Read at the Fourteenth Annual Meeting Held at the Chateau Laurier, Ottawa on the 2nd, and 3rd February, 1927*, (1927), 34.

representational power of the aerial photograph depended upon a decision whether it was map-like or photograph-like, and what qualities it possessed would also define how and by whom it could be used and read. This is then, at one level, a study of how the 'possibilities for choice, and for being, arise in history.'[14] At another it is a story of the way objects and subjects emerge together in modernity, including who was enabled to create and read the new kinds of knowledge that the air photograph was making available.

Following the combination of maps and photographs in the early-twentieth century means examining survey practices before and after the widespread adoption of aerial photography in Canada. To do so requires exploring debates and discussions that flowed through networks of scientific practice spanning North America and Europe across the twentieth century, registering both a broad sweep of professionalization in social science and the deepening relationship between geographical technologies and modern warfare.[15] In Canada, where military applications were used to map territory, the story of aerial survey serves as a useful template for placing the state into historical geographies of knowledge and cultural histories of vision. Focusing on Canada also means putting science in its place, drawing the universal language of practitioners back to a local site of knowledge production, and demonstrating how ways of seeing are not natural, but are framed and constructed through social forces.[16] Thinking geographically about these questions reveals that the coproduction objects

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[14] Hacking, *Historical Ontology* , 23.
[15] G. S. Dunbar (Ed), *Geography: Discipline, Profession and Subject since 1870: An International Survey*, Norwell, MA, 2001; S. D. Brunn, S. L. Cutter and J. W. Harrington (Eds), *Geography and Technology*, Boston, 2004; G. Hecht (Ed), *Entangled Geographies: Empire and Technopolitics in the Global Cold War*, Cambridge, MA, 2011 .
[16] M. Jay, Scopic regimes of modernity, in: H. Foster (Ed), *Vision and visuality*, Seattle, 1988; Crary, *Techniques of the Observer*; W. J. T. Mitchell, *What Do Pictures Want?: The Lives and Loves of Images,* Chicago, 2005; Cosgrove, *Geography and Vision*; S. Shapin, *Never Pure: Historical Studies of Science as if it was Produced by People with Bodies, Situated in Time, Space, Culture, and Society, and Struggling for Credibility and Authority,*

and observers played a central role in reproducing geographical vision over local, national, and international spaces of the twentieth century.

At the centre of this story was the question of whether the aerial photograph was an image or a map. Here, three themes emerge. The first is that the aerial photograph was an unstable provider of cartographic information, not least because its photographic qualities continued to speak their presence even as photogrammetrists resolutely attempted to frame and read the images as maps. It was this same excess of information that led to the refinement of air photo interpretation as a practice claiming to be a more-or-less objective science of seeing from above, bringing about a set of requirements for trained observers. A second theme is that the type of subject called upon to read the information in these images was the geographer. As members of a bourgeoning discipline at the mid-twentieth century, geographers moved closer to the operations of the state in their capacity as air photograph interpreters, developing in that movement a particular kind of vision suited to explaining the nation from above. The final theme concerns the historical geography of science and knowledge. The development of aerial photography created both a new object and new way of envisioning geography, but may also be understood as the movement of the primary site of knowledge-making. Where truthful vision was once vested in the scientific labour of ground surveyors working in the field, after the development of photogrammetry laboratory objectivity dominated geographical vision. Following this shift, the interpretation of air photographs in classrooms, libraries, and archives was thought to produce the most accurate readings of landscape. When told, the stories embedded in these themes reveal the shifting terrain of vision and knowledge making across the

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Baltimore, 2010; D. N. Livingstone and C. W. J. Withers, Thinking geographically about nineteenth-century science, in: D. N. Livingstone, C. W. J. Withers (Eds), *Geographies of Nineteenth-Century Science*, Chicago, 2011 .

early-twentieth century. However, in their telling they also reveal that aerial photography belongs in Canada as a decisively local story, not least because of unique challenges presented by the physical landscape, but because the ways of *being* modern for the Canadian state have historically been drawn from the power to know that landscape and envision it as productive.[17]

3.1.1 Maps and Photographs in the Late-Nineteenth Century

Late-nineteenth-century surveying in Canada was accomplished largely by first-hand observation carried out by officers of the Dominion Land Survey (DLS), the body of civil servants tasked with exploring, mapping, and apportioning the west and north of a newly acquired country. Using mechanical devices such as the theodolite to measure angles, the clinometer to gauge elevation, Gunter's chains to assess distance, and chronometers and astrological readings to assess positions, surveyors went about their work largely by transposing measurements into log books. Once recorded this information could be collated and plotted into geometric information about the surface of the earth, otherwise known as topography, while additional information about the soils, rocks, landscape features, and observations of magnetism furnished the details of geological survey. When a unique feature presented itself, they would take a photograph of it. Their records assembled, surveyors usually spent the winter in calculation of the past season's work, preparing the reports that would make up the public face of their efforts. As was custom, the maps and photographs the surveyors produced were often found together in these documents, where they provided either a cartographic representation of the acquired measurements or illustrated and embellished narrative accounts and landscape descriptions. Accepting that both were visual methods for communicating information about

[17] Zeller, *Inventing Canada*; S. Zeller, Mapping the Canadian mind: reports of the Geological Survey of Canada, 1842-1863, *Canadian Literature* 131 (1991) 157-167 .

landscapes, maps and pictures also accomplished unique communicative work in such settings. Recognizing this means following their traces as distinct representational formats used in reports, as theorized by practitioners, and discussed at conferences. Paying attention to the way surveyors spoke about maps and pictures in their nineteenth-century records, I suggest that they were considered unique *kinds* of objects that differed in important ways. They ordered representation differently, made different guarantees to objectivity, and each required a different kind of geographical subject to produce and verify the knowledge it purveyed. This is part of the reason that, as photographic mapping developed at the end of the nineteenth century, some surveyors and geographers argued that images and maps were incomparable and could not be joined.

The most important Canadian conversations over geographical representation took place at the meetings of the Association of Dominion Land Surveyors (ADLS) between 1884 and 1893. Surveyors who were federal employees of the Department of the Interior gathered annually in Ottawa to contribute papers and present their work. Among those who attended as an honorary member of the association was Robert Bell of the Geological Survey of Canada (GSC). Bell's contributions to exploration and surveying were legendary. He is remembered as the person who mapped and named more territory in Canada than any other officer of the survey, and was known for being an early enthusiast of photography in the field.[18] Following Bell through the spaces of the surveyors' conference tells us something about the way that images and maps were understood. In 1885, Bell listened to the president Otto Klotz explaining that Canada's foremost need was for a geodetic survey, citing that no maps were available which accurately represented

[18] C. Hallock, *Robert Bell, One of Canada's Explorers,* Washington, 1901 .

the geographical contours of the country in accordance with the spherical shape of the earth. The detailed survey work currently being done was like placing a 'mansion upon quicksand', he said, and the lack of a geodetic survey left Canada out of step with the 'civilized' nations of the world.[19]

For these surveyors a map providing the 'true geographical position of points' would demonstrate Canada's modernity. They imagined it as holding both the utmost national significance and becoming the standard on which all other maps could be based.[20] The question was how to communicate this information cartographically. How to represent the spherical surface of the earth on the plane surface of a map was a universal problem in geography, but each solution in the form of a new projection tended to produce new inaccuracies. William King, the DLS expert on the subject, advised that 'in choosing a projection for a map, we are guided by what we want to show most correctly, whether it was the areas, or the directions or the curvatures of the lines, or the distances between points.'[21] Surveyors were aware that beyond an act of balancing accuracy, choosing one from of many projections also arranged the properties of viewership by determining the perspective of the observer's eye. The orthographic projection placed the eye at an indefinite position from the earth, whereas the stereographic projection found 'the eye is supposed to be upon the surface of the sphere.' Likewise, the Globular found the eye 'Sin. 45 radius above the sphere in the axis of the primitive circle,' while the Gnomonic,

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[19] O. Klotz, President's address, *Proceedings of the Association of Dominion Land Surveyors at its Second Annual Meeting held at Ottawa, February 17, 18, 19, and 20, 1885*, (1885 9.
[20] T. Fawcett, President's address, *Proceedings of the Association of Dominion Land Surveyors at its Fourth Annual Meeting held at Ottawa, March 8th and 9th, 1887*, (1887 17.
[21] W. F. King, Notes on the different systems of survey in Manitoba and the North-West Territories, *Proceedings of the Association of Dominion Land Surveyors at its Second Annual Meeting held at Ottawa, February 17, 18, 19, and 20, 1885*, (1885 19.

introduced in 600 BC, located the observing eye at the centre looking outward.[22] Inaccuracies were traded off according to which purposes the map was to be viewed and used for.

Map-making was also a qualified estimate of the order and value of things. Useful mapping required a compromise between accurately depicting certain quantities of information at the expense of others, a decision-making process that evaluated the needs and arranged the perspective of the observer. In the case of the Dominion Land Survey, tasked with preparing the Canadian West for settlement, this meant depicting the grid-pattern of squared property lines for agricultural settlement. But this was only one kind of map. In Robert Bell's own presentations he lamented the disorganization of the Canadian cartographic services, complaining that the Department of Railways and Canals, the Post Office, Telegraphic Service, Marine, Agriculture, Dominion Lands, Geological Survey, and Indian Affairs each had their own mapping branch, and each used different names, colours, and scales. Bell related evidence from the different survey groups that laid out township plans between Lake Huron and Lake Ontario. When he went to prepare the geological map of the region, he discovered the tracts appeared 'to have been plotted as if the area which it covered were a plane, and when all the separate plans are placed together they cannot be crowded into the space between the boundaries of the lakes.'[23] Even accepting such inaccuracies were a necessary part of map-making, Bell complained that '(n)o amount of skill on the draughtsman's part can make the matter right.' The paucity of order in government map making was most fully demonstrated by uses of different projections, and Bell noted one department where the conical, polyconic, and cylindrical were all circulating. His

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[22] Klotz, President's address , 10-15.
[23] R. Bell, Government map-making, *Proceedings of the Association of Dominion Land Surveyors at its Third Annual Meeting held at Ottawa, February 16 & 17, '86*, (1886 19-20.

proposed solution was to introduce a copper plate base map drawn at four miles to the inch, according to the method of his benefactor, the legendary GSC founder William Logan. He also recommended the projection question be resolved by adopting the oblique-cylindrical model invented by the DLS's great hero, Surveyor-General Edouard Deville.

Making maps from field data was a complicated operation, and many of the sessions at nineteenth-century surveyors' conferences aimed at establishing standardized methods to ensure reliability when transferring information. Their discussions underscore historical geographers' interpretations of maps as calculated instruments of visual communication.[24] As tools they allowed for the careful storage and representation of information, promising a versatile—if limited—perspective view of knowledge for the observing eye. As powerful statements about space, maps reflected information in depth and levels of accuracy, from which data could be elided or not according to different requirements or values of the designer. Such utility meant, in the words of one ADLS president, 'there is no branch of industry in which our country can embark' without them.[25] Maps and plans were held as indispensable to Canada as the surveyors who produced them because they showed, primarily, *where* things where, not *what* they were.

Photographs at the end of the century, conversely, primarily offered the viewer a depiction of the *what*. If maps were used to show the viewer the arrangement of objects in and the contours of physical space, photographs demonstrated their characteristics. The Association of Dominion Land Surveyors began displaying photographs at their meetings in 1888, but always in

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[24] For a informative discussion see J. W. Crampton, *Mapping: A Critical Introduction to Cartography and GIS,* Malden, UK, 2010 . c.f. Edney, *Mapping an Empire: The Geographical Construction of British India, 1765-1643*; Harley, *The New Nature of Maps*; Pickles, *A History of Spaces* .

[25] E. J. Rainboth, President's address, *Proceedings of the Association of Dominion Land Surveyors at its Fifth Annual Meeting held at Ottawa, March 15th and 16th, 1888*, (1888 20.

the main lobby or exhibit halls, in the spaces of leisure and conversation separate from the presentation rooms. Here, Canadian survey professionals were expected to stroll among the

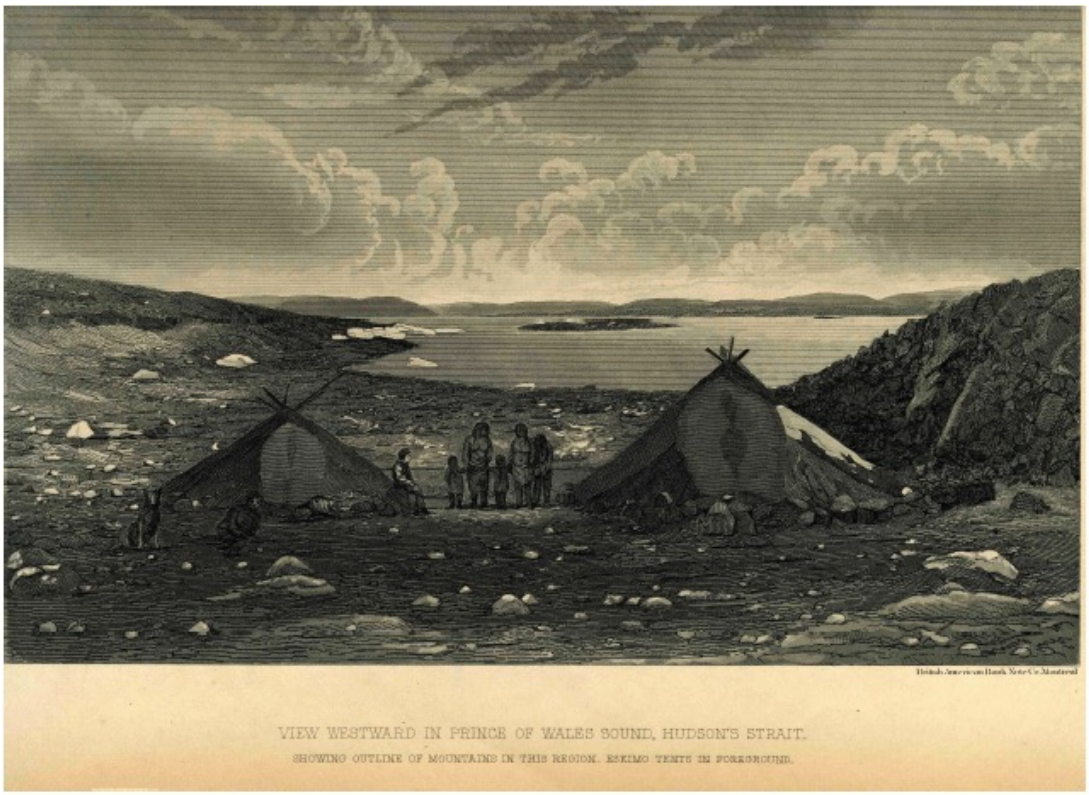

Fig. 3. The characteristics of landscape

Lithographic reproduction of Robert Bell's survey photograph, 'View Westward in Prince of Wales Sound, Hudson's Strait. Showing outline of mountains in this region, Eskimo tents in foreground'

Source: R. Bell, Observations of the geology, zoology and botany of Hudson's Straight and Bay made in 1885, *Geological and Natural History Survey of Canada, Annual Report*, Montreal: Government of Canada, 1885, 10.

images and make their own sense of the depictions. In the photo exhibition halls famed GSC explorers such as G.M. Dawson won recognition for his first pictures of the remote Stikine region, and it was said J.B. Tyrell's rendering of the 'Noble Red Man and his home is simply

perfect.' Qualitative and subjective assessments of photography dominated the exhibition hall. Bell was thrilled to learn his own images of Hudson's Strait were lauded as 'chiefly remarkable for picturesque beauty and *artistic* grouping.'[26]

That scientists evaluated the subjective qualities of their camerawork was not surprising. Historian Jennifer Tucker argues that in the late-nineteenth century, images were 'central to public discussions of science and scientific practice, as well as to discussions about 'scientific' versus 'unscientific' ways of seeing and, therefore, of producing legitimate knowledge.'[27] Peter Galison and Lorraine Daston have elaborated on these discussions, noting that in the mid-nineteenth-century scientific images were usually recorded during direct observation, and were later manipulated carefully by an intervening artist.[28] An image understood to be scientifically 'objective' was one modified by hand to be 'true-to-nature,' and idealized general characteristics by reflecting qualities of harmony and perfection in the world. For Bell, this meant scientifically 'reading the rocks' was also an exercise in appreciating and translating landscape, and he described his explorations as evaluating both the 'geology *and* scenery' of the Prince of Wales Sound around the Hudson's Strait.[29] Unlike maps, which aimed at the specific, survey photography emphasized generality. Bell claimed the viewer should see his westward view 'as a characteristic specimen of the scenery on the south side of Hudson's Straits.'[30] His objective

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[26] Association of Dominion Land Surveyors, Exhibits, *Proceedings of the Association of Dominion Land Surveyors at its Fifth Annual Meeting held at Ottawa, March 15th and 16th, 1888*, (1888 15.
[27] J. Tucker, *Nature Exposed: Photography as Eyewitness in Victorian Science,* Baltimore, 2005 , 232.
[28] L. Daston and P. Galison, *Objectivity,* New York, 2007 , 63-68.
[29] M. Zaslow, *Reading the Rocks: The Story of the Geological Survey of Canada, 1842-1972,* Toronto & Ottawa, 1975; W. E. Eagan, Reading the *Geology of Canada*: geological discourse as narrative, *Scientia Canadensis* 16 (1992) 154-164 .
[30] R. Bell, Observations of the geology, zoology and botany of Hudson's Straight and Bay made in 1885, in: A. Selwyn, *Geological and Natural History Survey of Canada, Annual Report*, Government of Canada, Montreal, 1885 , 10.

gaze also relied on representational investments made in lithographic process of transferring the original image to the printed page. (Fig. 3) The artistic composition of photographs was an important component of doing good science, and the images Bell made were indeed classically picturesque: 'View Westward' includes a gentle prairie sloping down into a calm inlet dotted with thin islands and ringed by low mountains lying in the background, a sky full of billowing clouds added by the engraver, and an Inuit family being paid a visit by the explorer, foregrounded along the shore of the inlet.

Alongside First Nations people, the most common human subjects shown in survey photographs were the surveyors themselves—hauling boats over portages, working at a theodolite station, setting up camp, and traveling by canoe were popular themes. Noting that survey photographers were aware their images would be widely circulated and interpreted, Robin Kelsey suggests that 'practical imperatives and social organization of survey work spurred pictorial innovation.'[31] Images of surveyors depict them thriving in the harsh environment of life in the bush, simultaneously portraying men of science above the quotidian labour of the axe and chain men who accompanied the survey parties. Early surveyors helped picture the 'field' as both a frontier for study and a visual space where labour and scientific authority was vested in the bodies of surveyors themselves.[32]

3.1.2 Early Photogrammetry, 1880-1910

Nineteenth-century surveyors chose between the photograph and the map according to what they hoped to portray, and how they saw themselves performing roles as scientists in

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[31] R. Kelsey, *Archive Style: Photographs & Illustrations for U.S. Surveys, 1850-1890,* Berkley, 2007 , 3.
[32] Driver, *Geography Militant* , 12-13.

service of the country. By depicting labour in the field, photography showed the human interface with nature as Canada expanded into the northwest, making familiar landscapes and the people who lived there by picturing place.[33] Maps, conversely, elided the work of the surveyors, explaining progress in broad terms and charting the territorial expansion of the nation in Cartesian space.[34] By the end of the century, these two objects seemed to be coming closer together as the first photo-topographical survey crews began their camerawork high in the Canadian Rockies. They were making photogrammetric slides—sets of images created for the purposes of surveying the landscape below. While the method was never used extensively until the air age following the Great War, experiments with photogrammetry at the end of the nineteenth century presaged later debates surrounding aerial photography. Not only did the difficulty of acquiring these kinds of views present new challenges to surveying, but the nature of the new images also raised the question of how surveyors understood themselves and authorized their work in science and exploration.

The advantages of the photo-topographical method were demonstrated in the Canadian Rockies and along the Alaska boundary during the 1880s and 1890s by teams using fixed camera stations to triangulate the landscape below.[35] Large areas of land could be surveyed using photographs at a fraction of the time and cost it took conventional methods. To get the images required, surveyors needed to ascend high mountain ranges and take shots using a camera-theodolite, a device used to gauge and record the angle of perspective from which each picture was taken. While the intent was to assess the entire landscape, the photo-surveyor needed to

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[33] See Schwartz, The geography lesson; Schwartz, Agent of Sight, Site of Agency: The Photograph in the Geographical Imagination .
[34] J. W. Crampton, Cartographic calculations of territory, *Progress in Human Geography* 35 (2010) 92-103 .
[35] M. P. Bridgland, Photographic surveying in Canada, *Geographical Review* 2 (1916) 19-26; I. S. MacLaren, *Mapper of Mountains: M.P. Brigand in the Canadian Rockies, 1902-1930,* Edmonton, 2005 .

ensure that camera stations on adjoining mountains or known points on the ground below were also framed inside their view. Survey work went ahead only by bringing together images and angles from the points at different stations, locating the same landscape features in different images, then making photogrammetric calculations to triangulate its position. Besides the trigonometry, the physical skill, precision, and stamina required to carry out this task meant the crews faced unique difficulties. The work also necessitated a new way of making images. Unlike typical survey photography, images produced through the camera-theodolite showed only 'views' of landscape and distant camera stations as prescribed by the method, not the surveyors at work. The requirements of the new practice meant that favoured narratives such as Native contact and adventure surveyors preferred to frame in their images were foregone.

Photogrammetric images were prescribed lines of sight, established with the sole intention of capturing points of other camera stations for later triangulation, leaving no room within the frame for the exploits of the surveyor.[36] At the ADLS conferences, those experimenting with cameras struggled to validate their work by connecting it with labour. The photo-topographical committee reminded their colleagues that the 'field work in this branch of our profession is very laborious, involving suffering from thirst, hunger, cold and extreme physical fatigue.'[37] It probably helped the early photo-surveyors that Canada's only internationally-recognized surveyor, Edouard Deville, was also a pioneering developer of photographic mapping. It is

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[36] For studies demonstrating that survey photography can indeed be beautiful and sublime, see: MacLaren, *Mapper of Mountains*; D. Cosgrove and W. L. Fox, *Photography and Flight,* London, 2010 . Rosalind Krauss has made the convincing argument that through the practice of depicting 'perspective,' the surveyor's authorship of landscape established the artistic preconditions for American modernist photography. R. Krauss, Photography's discursive spaces: landscape/view, *Art Journal* 42 (1982) 311-319 .

[37] W. S. Drewry, Report of standing committee on photo-topography as applied to topographical surveying, *Proceedings of the Association of Dominion Land Surveyors at its Sixth Annual Meeting held at Ottawa, February 19, 20 and 21, 1889*, (1889), 44.

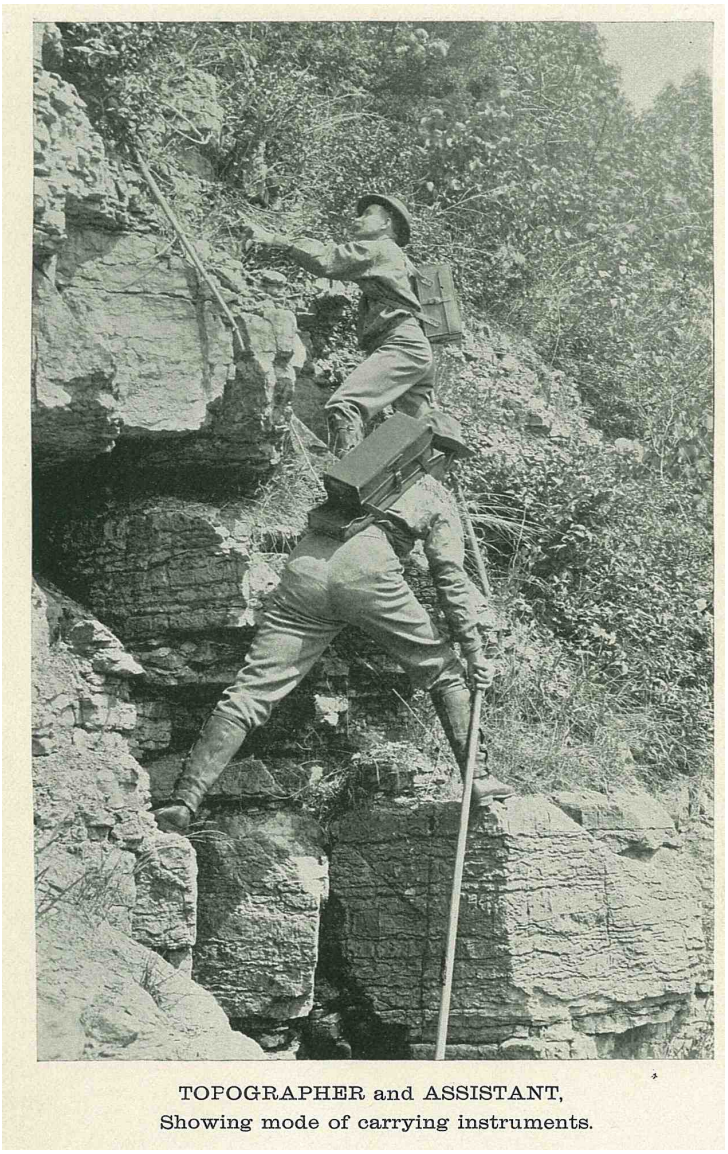

Fig. 4. 'Topographer and Assistant'

Source: E. Deville, *Photographic Surveying Including the Elements of Descriptive Geometry and Perspective,* Ottawa: Government Printing Bureau, 1895, frontspiece.

telling of the need to legitimate the labour of photo-surveyors that the only actual photograph included in Deville's standard manual, *Photographic Surveying*, was an image of two surveyors

scrambling up a cliff laden with heavy equipment.[38] (Fig. 4)

As photograph and map narrowed into a single photo-topographical image, the representational antagonisms between them emerged. At the ADLS meetings in 1889, William Drewry recalled that the projections depended on where the 'eye' was located for the viewer, explaining that photography differed in that it was a 'true perspective' because it locked the eye in place. As Drewry saw it, unlike traditional survey methods that *resulted* in a perspective drawing like a map, photogrammetric images *began* as perspective maps. Both map and photograph represent through the rules of perspective—they are reduced-scale versions of what they portray, where the relative distances in the smaller versions correspond to the larger distances found in reality. (Fig. 5 & Fig. 6) But in noting the ascendancy of photographic surveying, Drewry was commenting on a significant change in the relationship between representation and landscape, and between surveyor and his field. In mapping by perspective, 'we have the *object* or its *plan* to produce the perspective' he explained, whereas in photographic surveying 'we have the *perspective* to produce the plan.'[39] Moving from map to photograph, Drewry suggested, meant surveyors were losing authorship and control over the view.

Photogrammetric images seemed to be challenging both the role of the surveyor as a rugged and patriotic explorer and as a scientist capable of characterizing place and landscape. Rather than depict encounters with environments and peoples, the camera-theodolite only found value in images with calculable angles, and surveyors were asked to leave the scene. These changes correspond to Daston and Galison's description of scientific representation at the end of

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[38] E. Deville, *Photographic Surveying Including the Elements of Descriptive Geometry and Perspective,* Ottawa, 1895; J. A. Flemer, *An Elementary Treatise on Photographic Methods and Instruments including a concise review of executed Photographic Surveys and of Publications on this subject,* New York, 1906 .
[39] Drewry, Report of standing committee on photo-topography , 45.

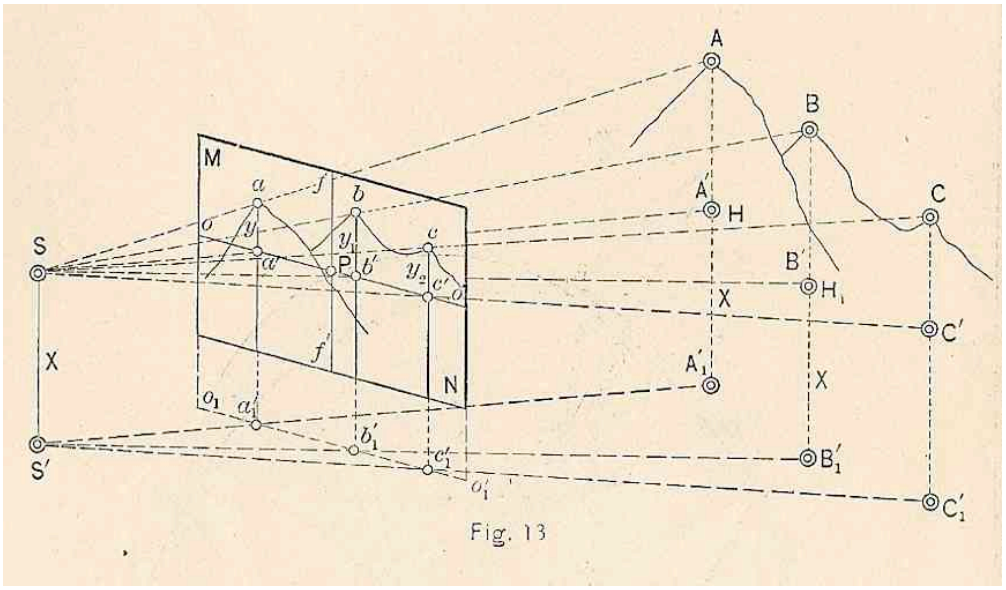

Fig. 5. The laws of perspective

Source: J. A. Flemer, *An Elementary Treastise on Photographic Methods and Instruments including a concise review of executed Photographic Surveys and of Publications on this subject,* New York, 1906, Plate VII.

the nineteenth century, when 'mechanical objectivity' became favoured over alternative methods of guaranteeing truthful observation. Where the presence and interventions of the observer once added to the authority of scientific images, under mechanical objectivity any evidence of human manipulation was re-interpreted as a denigration of truth in representation. The camera was central in the shift to the new objectivity because it was able to record time and space in ways human vision could not, thus seeming to improve upon vision itself, and to complete its work without subjective interjection.[40]

[40] Daston and Galison, *Objectivity* .

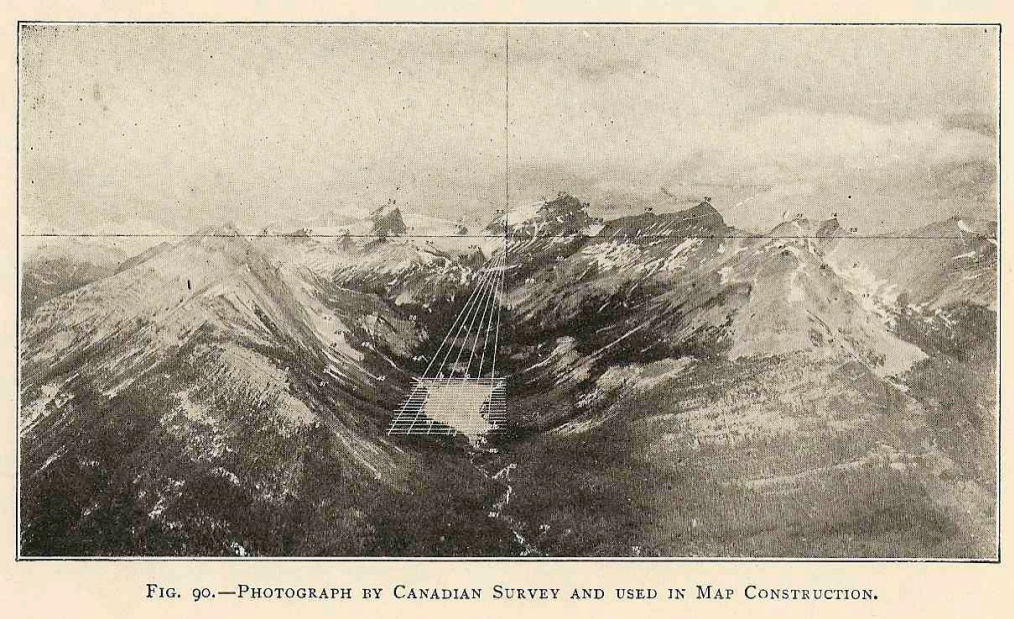

FIG. 90.—PHOTOGRAPH BY CANADIAN SURVEY AND USED IN MAP CONSTRUCTION.

Fig. 6. Phototopographic surveying

Demonstrating the theory and the practice whereby the camera was first used for mapping.

Source: H. M. Wilson, *Topographic, Trigonometric and Geodetic Surveying including Geographic, Exploratory, and Military Mapping with Hints on Camping, Emergency Surgery, and Photography, 3rd Edition,* New York, 1912, [1900], 293.

Nonetheless, not all championed the move to mechanical objectivity so readily. Even as the first experiments in airplane aerial photogrammetry were underway, geographer Hebert Wilson disparaged land photo-surveying's reliance on

> the draftsman, who does not see the country and cannot make as detailed and accurate a map of it from photographs as the topographer could make while viewing the country itself from which the photograph had been made. It seems, therefore, fair to assert that a map made from photographs and constructed in the office on a drawing board … is less accurate and less satisfactory than the latter.[41]

[41] H. M. Wilson, *Topographic, Trigonometric and Geodetic Surveying including Geographic, Exploratory, and Military Mapping with Hints on Camping, Emergency Surgery, and Photography, 3rd Edition,* New York, 1912, [1900] , 292.

In Wilson's estimation, photo-topography was changing the role of the surveyor, from a bold adventurer who surveyed *and* mapped territory to an unseen scientist who simply recorded it by means of perspective.

Photographic surveying using camera-theodolite and photogrammetric principles also posed problems for surveyors when it came to understanding their role in the process of knowledge production: how to relate as experts to this new kind of object which seemed to possess two histories—one, belonging to the map, referring to the specific world displayed by skill and knowledge, the other to the photographic, general view produced by the craft and labour of the surveyor. But photo-surveying was also making its own limitations clear. Apart from the difficulty of climbing dangerous alpine ranges to make the requisite images, the often irregular topography of the land below made it impossible to create long baselines for the survey of smaller sections. Baselines made survey work fast and efficient, allowing different survey teams a common measure from which to work individually. Conversely, while baselines were easy to create in the prairies, the flat interior lacked the elevation necessary for the use of photogrammetry. Without a mountain to climb for an adequate angle of perspective, the surveyor had no line of sight and no vertical points to calculate elevations, the camera remained a marginal technology for map-making, and the question of joining photograph and map was largely set aside. Renewed effort would come after the Great War, when the airplane promised to liberate the surveyor from their reliance on high points of land and take them into the sky.

3.1.3 Between the Photograph and the Map, 1920s

Canada embarked on a large-scale project of phototopographical surveying only after Great Britain provided surplus aircrafts and camera equipment to Commonwealth states following the end of the Great War in 1918. New experiments confirmed the senses of speed, freedom, and modernity associated with the airplane could be transferred to survey practice, and it finally seemed possible to rapidly measure the terrain below where no heights of land were available. This enthusiasm seemed natural to observers across the Atlantic, who viewed Canadians as 'a nation of map-users. Canada being a large country, it is difficult to describe anything in connection with it without producing a map.'[42] But whether air photographs could or should map the world would become a great question of the 1920s, as promoters worked against the wartime belief that the aerial image was primarily a surveillance device. Even pioneers of the technology saw strict limits to its value. Offering a summary of the field, one of the leading authorities on the subject, US Geological Survey officer Herbert Ives in his widely-read *Airplane Photography,* thought that the 'great field for aerial photographic mapping in the near future lies in filling in detail on maps heretofore completed as general outlines.'[43] Ives' opinion was drawn from his experience in the Great War, where he was among a large group of surveyors and geographers who found themselves given provided with vast economic and technical resources to develop means of producing plans of enemy territory.

The greatest challenge to wartime mapping was the airplane itself. While sets of images taken slowly using tripod-mounted cameras at established points on the sides of mountains had yielded favourable results, photographic work from the airplane transformed known points into

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[42] Aerial surveying in Canada, *Geography* 15 (1929) 287-288 (288).
[43] Ives, *Airplane Photography* , 317.

uncertain locations. Throughout the war, major advances were made in the frequency, speed, and distance at which images could be made, but the lack of consistency in altitude, tilt, and camera settings employed meant that few of the photographs produced from aerial sorties could be read alongside one another, and the stereocomparator device used to resolve these discrepancies proved notoriously complicated to use.[44] The aerial photograph's utility in tactical reconnaissance and surveillance made it an invaluable strategic tool of seeing during the war, but the many variables inherent in its production raised reservations about the possibility of airplane images producing real maps.

The question of whether aerial photographs were cartographic representations of the earth was not developed during the war, partly because military personnel kept the epistemic qualities of maps and images separate. Even when photographs were used in the creation of military plans, their value was overshadowed by cartographic convention. An illustrative story comes from H.K. Carruthers, the Chief Photographer of the Canadian Department of the Interior's Topographical Surveys Branch. Drawing upon his war experience to evaluate air photography, Carruthers explained to his readers in a 1919 article how maps operated in the destruction of a fortified German position. He recounted how a party of American generals were touring the front in northern France when a 'Hun battery' was discovered. An airplane was sent to take a photograph of the site, the resulting images were given to draftsmen, and a set of plans was produced from a portable printing unit. The generals

> were handed a copy of one of these field maps and their attention drawn to a particular spot appearing on the plan. They were informed that at 20 minutes to 3 o'clock, 70 British guns would each drop a shell in the vicinity of that spot.

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[44] H. A. L. Shewell, The use of the Cambridge Stereocomparator for air triangulation, *The photogrammetric record* 1 (1953) 35-58 .

> These generals heard the roar of the 70 guns and next morning were shown a fresh plan with the spot missing. No doubt the scale on that plan gave the gunners the correct range.[45]

Couched in a story about upstaging Americans in artillery operations is a story about the relationship between photograph and map. While it made sense to transfer the photographs into plans for the artillery strike to be accurate, Carruthers' tale explains that in order to validate the destruction of the battery, the photographs capturing it in ruins were transferred back into a plan again for the generals to view—suggesting the representation and interpretation of such destruction was to be comprehended cartographically.

Following the war, when the Canadian Air Board began experiments using aerial photography they also inherited an unresolved question: could aerial images actually be treated as perspective *maps* from which distances and elevation could be extrapolated, or would their continued use be set firmly in the long tradition of *photographic* recording of landscape. The 1920s were characterized by experiments in each, with large efforts directed both to photogrammetry, which followed the former, and photo-mosaic map making, which followed the later. Neither was straightforward, and attempts met with varying degrees of success. The photo-mosaic assumed that photographs might be made sufficiently correspondent with earth by combining large numbers of them into maps. (Fig. 7)

An airplane would follow a planned flight route over the area to be plotted, shooting directly down to produce vertical images at regular intervals. Once developed, the verticals

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[45] H. K. Carruthers, Map reproduction, *Annual Report of the Association of Dominion Land Surveyors Twelfth Annual Meeting Held at Ottawa on the 29th, 30th, and 31st January 1919*, (1919, 131.

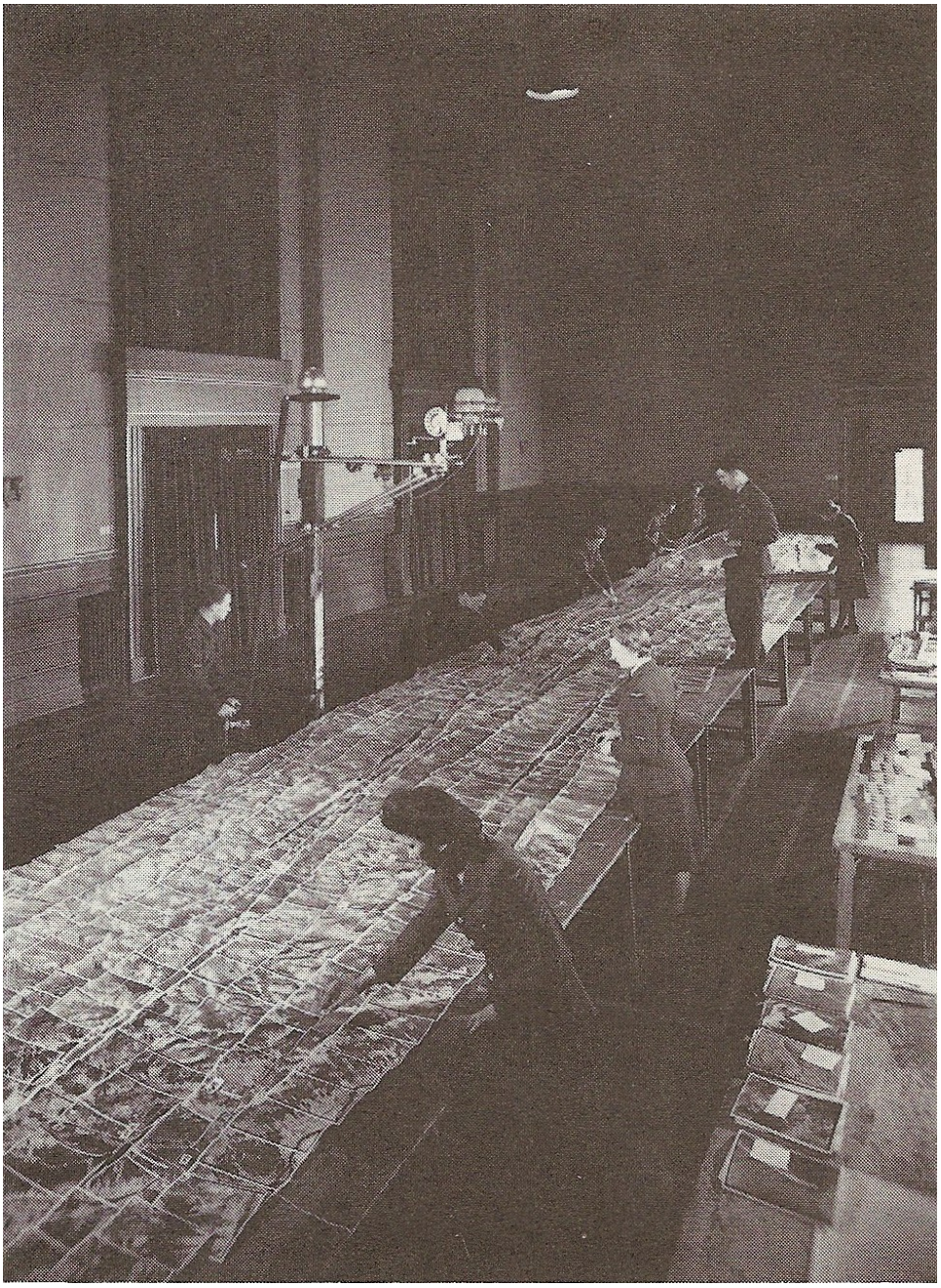

Fig. 7. Constructing a map mosaic

Source: Thomson, Don W and Energy, Mines and Resources Canada. *Skyview Canada: A Story of Aerial Photography in Canada*. Ottawa: Energy, Mines and Resources Canada, 1975, 133.

Reproduced through permission of Crown Copyright, Government of Canada.

were overlaid side-by-side with one another to quilt together a view of landscape.[46] To accommodate variations in the angle and height of different images caused by the motion of the plane, slides were usually re-shot using a 'rectifying' lens to unify the perspective and height across all the sheets in the mosaic. Still, images from experimental flights using the British camera equipment over Ottawa in 1921 could not be transformed into acceptable maps. After enlarging, cropping, and distorting the series of images over and over again they could not be found to correspond with the landscape below, confirming other reports that positions were 'impossible to plot from aerial photographs.'[47] Only years later did it become clear that the Ottawa city maps the photographs were being tested against were totally incorrect.[48]

Surveyors decided to test photo-mosaic mapping techniques over cities because they believed their existing plans of these places were the most accurate, but the real anticipated use of aerial images in Canada was the reconnaissance of the north. For the airplane to have use in hitherto incompletely surveyed area, a truly photogrammetric image from which measurements could be made was required. A partial solution came by way of the 'Canadian method' developed by R.B. McKay at the turn of the century. Rather than take 'vertical' air photos directly downward, as the Ottawa test flights had done, the Canadian method called for 'oblique' shots of the landscape. A 'high oblique' image also included the horizon and therefore the vanishing point of the earth. Knowing the angle at which the oblique aerial photograph was taken then, a plotter could overlay the image with a perspective grid. Projected onto a linear plane, this grid offered a quick and general measurement of the landscape. (Fig. 8) The method

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[46] R. F. Clarke, Possibilities of the aeroplane in surveying, *Annual Report of the Association of Dominion Land Surveyors Twelfth Annual Meeting Held at Ottawa on the 29th, 30th, and 31st January, 1919*, (1919, 61-80.
[47] G. F. A. Whitlock, L.-C. Newcombe, L.-C. Salmon, M. Brock, T. Holdich, A. R. Hinks, G. Hardy and M. N. MacLeod, Mapping from air photographs: discussion, *The Geographical Journal* 53 (1919) 396-403 (397).
[48] Sandwell, The camera takes to the air , 63.

was celebrated because it allowed the use of photographs for more than providing detail. By standardizing the angle at which images were made, photosurveyors made tentative steps toward claiming accuracy from the air.[49]

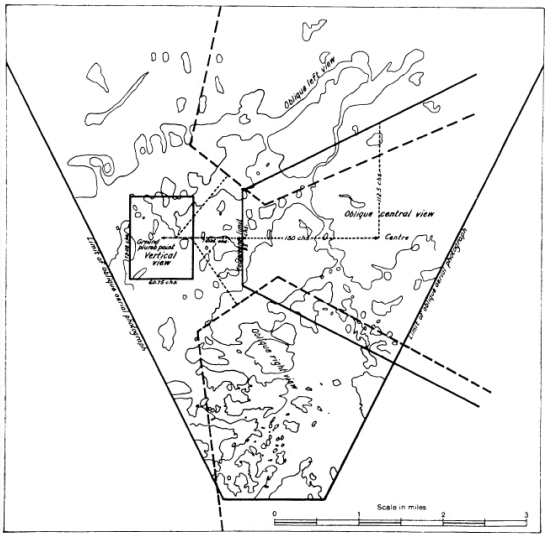

Fig. 8. 'Illustrating the procedure of taking photographs'

Fig. 9. 'The Country reduced to map form'

Source: G. H. Matthes, Oblique aerial surveying in Canada, *Geographical Review* 16 (1926) 572, 579.

Canadians had good reason to be worried about overstating claims to accurate air photography. Topographic expert Edmond Grove-Hills of the British War Office might have expected as much. In 1904 he compiled a withering public report that found the state of Canadian mapping to be 'grossly erroneous' in matters of efficiency and accuracy.[50] Embarking on a full-scale investment in photographic mapping was a dubious prospect if the cartography it was meant to update was incorrect. It was therefore decided the first aerial photographs

[49] Fletcher, Report of aerial topographic survey committee , 34-38.
[50] E. H. Grove-Hills, *Report on the Survey of Canada,* Ottawa, 1904 , 7.

produced for mapping should be made in areas that already had visible survey markers on the ground. This tied photogrammetry to the pickets established since 1915 by the Geodic Survey of Canada, the branch that had been triangulating the country in accordance with the curvature of the earth by calculating the position of points on the landscape in three-dimensional space.[51] In effect, what would later be called the 'ground-truthing' of aerial surveys was, initially, completed before the photographs were made at all. Those pioneering with the Canadian method had the assurance that they were making images of landscapes already accurately mapped.

A closer study of ground-truthing controls reveals the how the Canadian method was articulated into the epistemological divide between photograph and map. Even though the systematic incorporation of the grid lines appeared to strengthen claims that the images were indeed maps, surveyors persistently read them as photographic portrayals of landscape. In a major report on topographical work, DLS surveyor J.A. Fletcher insisted that the best use of the Canadian method derived from its 'value as a permanent record of the terrain at the time the photograph was taken.'[52] Whenever surveyors flew, they were urged to make images of the same areas in order to record morphology and seasonal patterns below. By creating images in this manner they were implicitly suggesting that clues about the general characteristics of territory were best captured when the landscape was presented as a photograph, rather than as a map. Others saw the value of photographs as preliminary to later work, like DLS member H.F. Lambert, who used air photographs from his first flight in 1922 to 'pick out the best lines of travel; to select stations which would give the best scheme of triangulation.'[53] Moreover, when

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[51] H. S. L. Winterbotham, Surveys of Canada, *The Geographical Journal* 67 (1926) 403-416 (413).
[52] Fletcher, Report of aerial topographic survey committee , 38.
[53] Air Board of Canada, Annual Report, in, Government of Canada, Ottawa, 1922 , 51.

the images were released to the public surveyors could not help but present them as landscape views. Despite the oblique photographs of the Canadian method being intended for mapping and deposit in the National Air Photo Library, the Topographical Survey Offices in Ottawa turned them into photographic narratives demonstrating the power of the new technology. One particularly memorable installation displayed the explosive increase in cartographic knowledge using 'before and after' maps of terrain surveyed in northern Manitoba. (Fig. 10) Flanked by impressive scenes of air photographers at work, the two maps worked together as a discourse explaining the systematization of knowledge making, the expansion of Canada, and the value of aerial photographs.

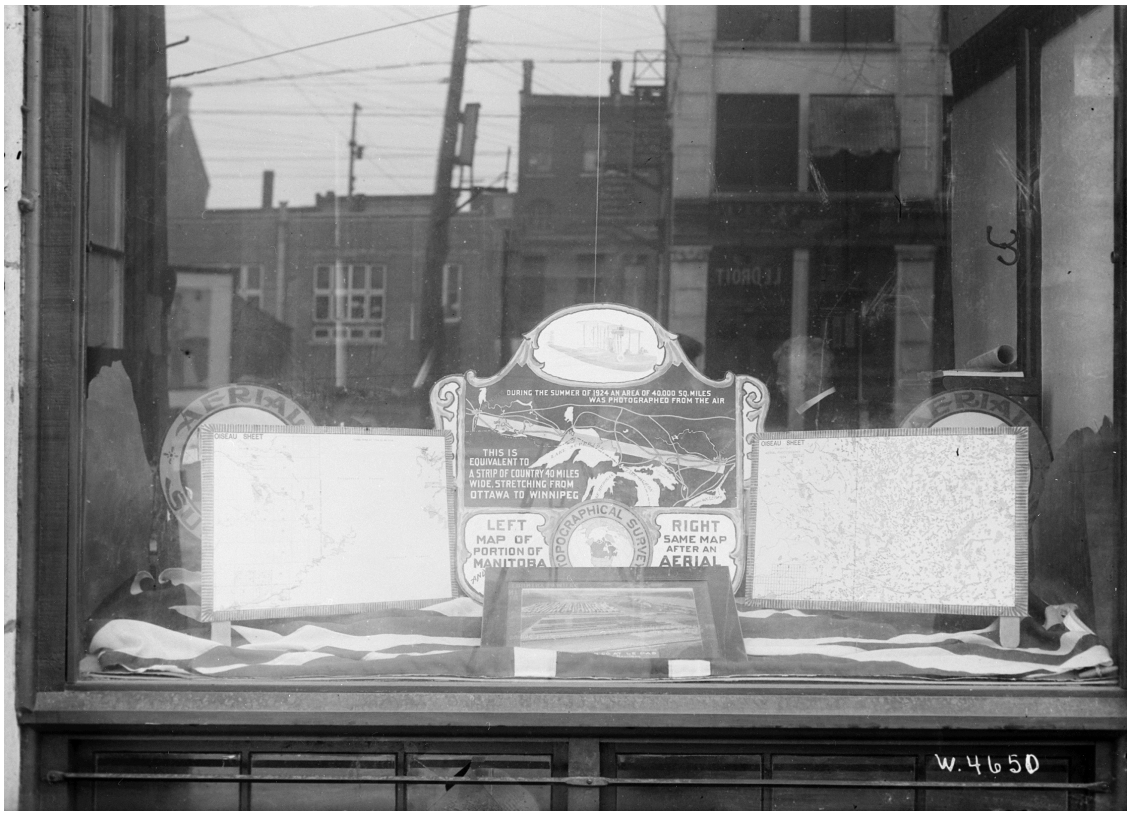

Fig. 10. Demonstrating survey progress on the Manitoba-Ontario border

Source: Library and Archives Canada, Department of the Interior collection, PA-45658.

The 1925 printing of the first Canadian map based entirely on oblique aerial photographs was a comparatively insignificant event next to popularizations of air travel achieved by people like transatlantic pilot Charles Lindbergh. Despite this, the Canadian method was garnering some acclaim: at the same time popular explorer Admiral Richard Byrd was using the technique in his flights over Antarctica, the British War Office was contemplating the method for cadastral survey of the colonies. However, while the vast majority of surveying in Canada followed this practice of using obliques, it was also finding critics abroad who vested their criticisms into the unresolved status of the air photograph as map. The strongest objections on this matter came from England, where surveys were largely conducted by the War Office, and personnel complained that the problem with 'the Canadian Survey is their adherence to the photographic method.' The main issue was that oblique shots merely reproduced in the air the kind of 'terrestrial' photography anyone could take from a high point on the ground. Critic Colonel Ryder specified the problem with the Canadian method: the deficiency was not in using 'the air-photo—of that I am a strong advocate—but the ordinary photographic method.'[54]

To detractors of the Canadian oblique method, true aerial mapping called for a technique that would not appear so 'photographic;' in providing one, they championed a different perspective of view. Rather than the tilted landscape obliques, they believed perpendicular camera angles and *vertical* photographs looked and acted most like maps. The US Geological Survey in particular decided that only vertical shots were truly photogrammetric. J.W. Bagley began his textbook on aerial surveying with the implicit claim that the most people had not realized that 'a photograph of a plane surface with a plate camera directed *perpendicularly*

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[54] E. M. Jack, C. H. D. Ryder, H. L. Crosthwait, D. Bishop, C. Gale, A. R. Hinks and H. S. L. Winterbotham, The surveys of Canada: discussion, *The Geographical Journal* 67 (1926) 416-421 (417).

toward that plane is a map of the area which the photograph embraces.'[55] Willis T. Lee agreed: after his first USGS flight tests, he explained that oblique photographic views were best used for softer endeavours like landscape gardening, architecture, and city planning, whereas only the vertical shot provided the hard and accurate angles for mapping.[56] Americans preferred the idea of fixing variables like time, direction, and altitude onto the images themselves, and also repositioned the view with north at the top in the fashion of a map. (Fig. 11) This practice, while seemingly germane to cartography, rearranged the image against the flight path of the airplane in a way that was not possible in the Canadian method, where the perspective of the oblique photograph dictated what direction the viewer was looking toward. These combinations of advocacy and practice worked to deepen the distinction between aerial images: oblique shots were now photographic, whereas vertical shots were cartographic.

Other drawbacks of the Canadian method were clear from its development: rather than accurately measuring the contours of the landscape it could only hope to provide general embellishments of them. Similarly, while the mosaic method of mapping used the preferred vertical images it also lacked the necessary information to map topographic features. These problems were solved with the adoption and rapid advancement of a technology bridging vertical images and stereoscopy known as aerial stereophotogrammetry. The method was based on a well-known principle that the appearance of depth could be registered if two photographic images were viewed side-by-side through stereoscopic lens. As such, if a single aerial image mimicked what a single eye alone could see - a surface without depth - then two aerial images

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[55] J. W. Bagley, *The Use of the Camera in Topographical Surveying with notes on the Application of Photogrammetry to Aerial Surveys,* Washington, 1917 , 20.
[56] W. T. Lee, *The Face of the Earth as Seen From the Air; A Study in the Application of Airplane Photography to Geography,* New York, 1922 , 1-3.

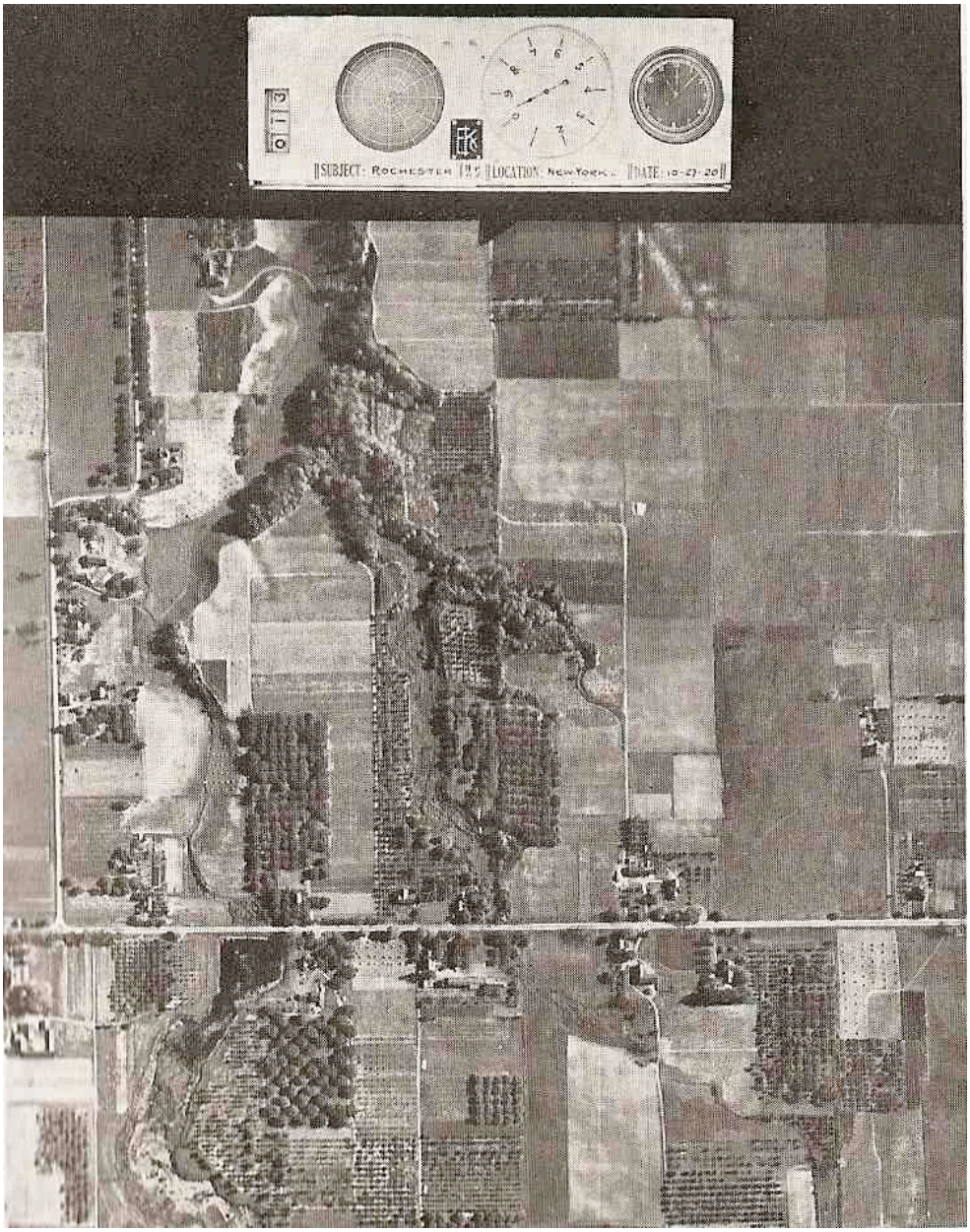

Fig. 11. A vertical aerial photograph

Recording the view, axis of lens, altitude, time of exposure, camera and film type, and series number.

Source: W. T. Lee, *The Face of the Earth as Seen From the Air; A Study in the Application of Airplane Photography to Geography,* New York: American Geographical Society, 1922, 3.

together should produce the effect of two eyes working in stereo. By looking at two overlapping images showing portions of the same landscape and arranging them side-by-side through a specifically designed set of lenses, the human eye is able to coordinate through parallax vision the three-dimensional depth of the landscape. Finally, if known points and elevations existed on the ground, stereophotogrammetry can calculate the topography of an entire landscape. As planes and cameras improved their ability to produce useable stereo images, stereoscopy evolved from a cumbersome set of lenses and drawing apparatuses to the massive multiplex projector, which allowed the operator to quickly and easily sketch the topography of the country based on a pair of photographs.[57] These advances were made at such a rate that by the end of the 1920s it was assumed the stereoscopic method would eventually allow topography to be determined to a large extent without the need for surveyors 'ground-truthing' the data gained from the air.

Choosing the best method to represent the earth required that surveyors assess the relative position of aerial images between the photograph and the map. During the 1920s, they did so largely according to the angle at which images were taken. The angle of the obliques looked more photographic, whereas the perpendicular view of the verticals looked more map-like. Using these parameters they framed both their support and critiques of the different methods available, and in so doing brought about a discourse surrounding the purpose of the air photograph as an object and its potential for accuracy. But after ten years of air photographic mapping in the 1920s, observers were questioning why 'the maps that were to have been made so easily by sailing over the country have not materialized in any number,' and increasing doubt

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[57] F. R. Wilcox, An introduction to mapping methods as used in map compilation from aerial photographs, *The Forestry Chronicle* 11 (1935) 294-299 (298; F. V. Thompson, Stereo-photo surveying, *The Geographical Journal* 31 (1908) 534-549 .

that true geographical information could be obtained using cameras mounted in airplanes.[58] According to A.S. McKinley, the top US specialist on the subject, the problem was simply how one thought of a map in the first place. If one considered maps representations of the surface of the earth, then 'every detail' of the area would be captured in detail by an aerial photograph. However, 'when a map is considered as an accurate location of points on the earth's surface, the work of the ground surveyor is more accurate.'[59] These paradoxes frustrated the aims of photogrammetrists hoping to map by images alone. As the respected British aerial survey pioneer M.N. MacLeod protested: 'the function of the air photograph is not to show primarily *what* an object is, but to show *where* it is.'[60]

Though the Canadian method was still widely used by the end of the 1920s, stereophotogrammetry began to dominate the discourse of aerial surveying, suggesting its capability to provide all the details of 'where' objects existed in photographs. Despite this, surveyors hoping to map with them still protested, partly because of all the excess photographic meanings the images insistently captured. Willis Lee of the US Geological Survey complained his camera gathered so much information because it was 'not concerned with the difficulties that the surveyor might encounter. It represents useful and useless details with equal accuracy.'[61] A great part of the problem in making maps from the air was that the base images produced, along with the 'where,' so much of the *what* that topographic surveyors did not want to see. Moreover, the detail they did capture was itself questionable, and air photos were notoriously difficult to

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[58] A. R. Hinks, Air survey: review, *The Geographical Journal* 71 (1928) 588-591 (588).
[59] A.S. McKinley and A.M. Narraway, *Applied Aerial Photography* [1929] quoted by G. Barrette in Editors, Discussion: Aerial photography as a map substitute, *The Canadian Surveyor Special Edition. Proceedings of Thirty-Seventh Annual Meeting of the Canadian Institute of Surveying held at the Chateau Laurier, Ottawa February 2nd and 3rd 1944*, (1944, 66.
[60] Macleod, Mapping from air photographs , 382.
[61] Lee, *The Face of the Earth* , 316-317.

interpret—the most cited origin of misinformation being the fact that depending on the angle of the sun in vertical air photographs, depressions could look like hills and vice versa, according to whether the shadows were falling toward or away from the viewer. At the same time, this abundance of information was a great discovery to others the dawn of the air age, as oil prospectors, forest engineers, and transportation planners discovered air images hoping to gaze at them to divine the resource value of remote areas only photographic renderings could show.

3.1.4 Geographical Imaginations, 1930s

By the 1930s the aerial photograph was bursting through the limits of what was expected of it as a singular cartographic record, threatening to collapse the accuracy of the map into descriptive qualities of the photograph. As aerial images grew more popular and saw wider uses, surveyors, foresters, and eventually geographers attempted to frame and circumscribe their use. The climate of knowledge production was different than fifty years earlier, however. Where the labouring presence of a surveyor in the scene had verified photographic objectivity in the nineteenth century, twentieth-century photogrammetry clearly legitimized the production of geographical knowledge through the precision offered by modern technology. This agrees with Denis Cosgrove's observation that the history of survey has seen the 'progressive shift away from the individual human body as a reliable agent for recording spatial information, towards dependence upon instrumentation as the guarantor of accuracy and objectivity in survey data.'[62] But Cosgrove does not explain what happened to those previously reliable bodies once 'the field' became dominated by technology. The surveyor, whose senses were no longer needed and whose body could find no place before the lens of the aerial camera, was gradually being replaced. Into

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[62] Cosgrove, *Geography and Vision* , 159.

that vaunted position of expert observer moved a laboratory expert skilled in reading 'living maps' from above, a subject able to respond to both the photogrammetric and the photographic information being produced by aerial surveys. (Fig. 12)

When Canadian Air Surveys director J.A. Fletcher first used the metaphor of a 'living map' to describe the landscape below during his first photographic reconnaissance flight in the early-1920s, he might have been speaking to Athos Maxwell Narraway, a junior office present for the same trip. With a few years, Narraway would rise to become chief surveys controller of Canada's Department of the Interior, and do far more than anyone else to press for the benefits of a modern aerial survey. In a 1933 speech he declared that all Canadians should reconsider what he called their 'geographical imagination.' The national locus of vision, he said, needed to be elevated from a perspective planted firmly on the earth to one far above it: 'We look at a map of Canada and quite subconsciously we read distances in terms of canoe or other ground means of travel, not realizing that our access to the air has completely revolutionized our position. We have not yet adjusted our thoughts adequately to the havoc which modern science is making of our old conceptions.'[63] To Narraway, air photography was changing the way people saw their country by granting visual access to the parts of it that had once seemed remote, and he urged Canadians to let their minds follow. The 'geographical imagination' he invoked through aerial photographs proposed a landscape open to exploitation that resonated with Canadian industry and politicians, expanding the horizon of Canadian sovereignty, fostering modern development and forging a new link between technology and nation.[64] Even the Surveyor-General of the

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[63] Narraway, The surveyor, the aeroplane, and Canada , 4.
[64] M. Cronin, Northern visions: aerial surveying and the Canadian mining industry, 1919-1928, *Technology and culture* 48 (2007) 303-330 .

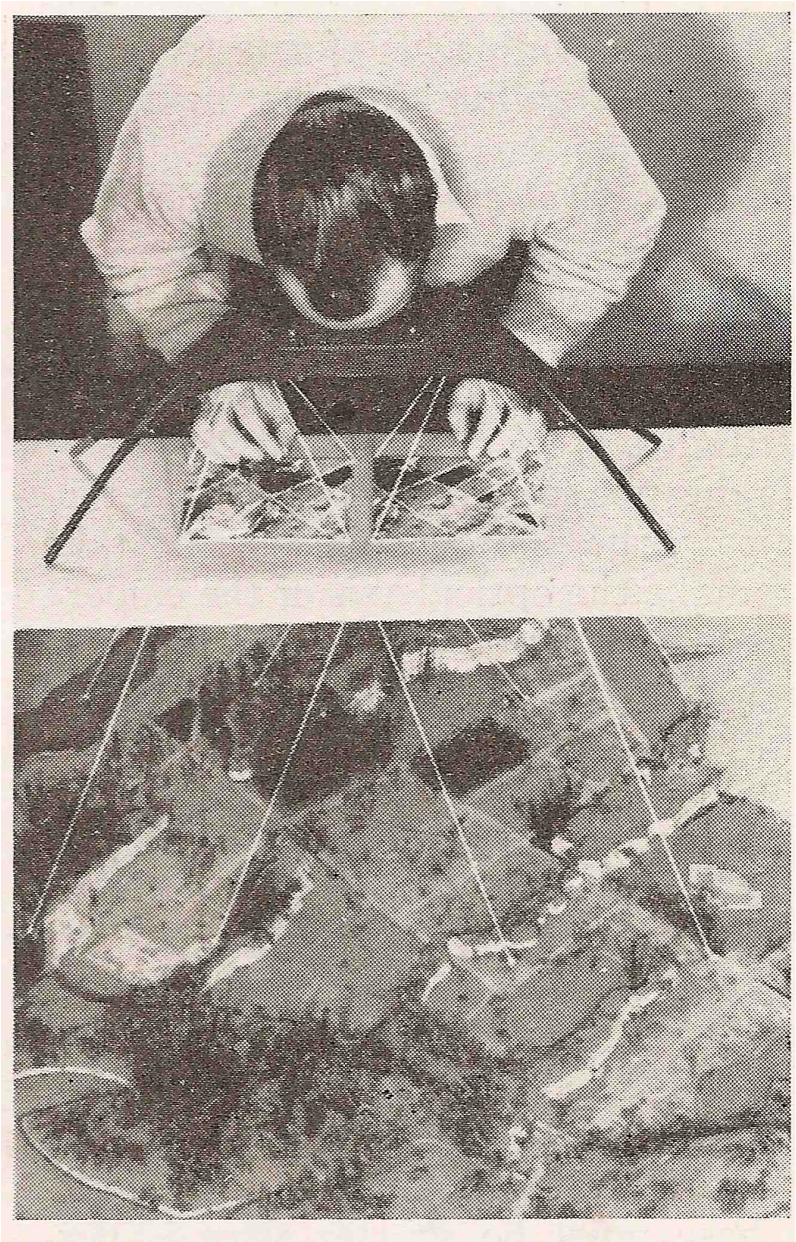

Fig. 12. Graphic showing the use of stereoscopic vision

The rays projecting down through the image illustrate the different focal areas of the two images.

Source: R. M. Colwell, Procurement of aerial photography, in: R. M. Colwell, American Society of Photogrammetry (Eds), *Manual of Photographic Interpretation*, Washington: American Society of Photogrammetry, 1960, [1954], 31. Reproduced with permission from the American Society for Photogrammetry and Remote Sensing, Bethesda, Maryland, www.asprs.org.

Department of Interior boasted how, '[i]n the earlier days it was the advancing agricultural settlement that was demanding more and better maps—now it is the prospector and those who follow him in the development of our metal mines.'[65] Canada was beginning to see itself from above, but it was not surveyors who would explain the view.

Narraway addressed his arguments to the Dominion Land Surveyors, the legendary group that had marked and divided the Canadian west for settlement and agriculture.[66] Though his speech celebrated their achievements, he also saw their importance waning. At the centre of his new imaginary lay the aerial photograph as a mechanically produced object for visualizing a new Canadian geography, in stark contrast to the rapidly antiquating survey crews. The group he now called 'ground surveyors' belonged to a different era and held less utility in modern Canada; if they had a future, it was envisioned behind stereoscopes and plotters deciphering machine-made high-altitude photographs, where they could make use of the 600,000 images recently deposited in the National Air Photographic Library established at Ottawa. Still, for Narraway, it was not the work they could to do there as interpreters, but the object itself that would bring Canada into the future: 'the aerial photograph is revealing to us the intimate secrets of our resources. It is becoming increasingly evident that the ether has no more national or other frontiers. There are no strategic barriers.'[67]

Narraway's address characterized the 1930s, where the debate over aerial photography moved from one of cartographic representation to the question of photographic interpretation as a substitute for work completed in the field. It was also suggestive of an underlying antagonism

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[65] F. H. Peters, Mapping Canada, *Canadian geographical journal* 12 (1936) 3-16 (16).
[66] J. G. MacGregor, *Vision of an Ordered Land: The Story of the Dominion Land Survey,* Saskatoon, SK, 1981 .
[67] Narraway, The surveyor, the aeroplane, and Canada , 4.

concerning the respective roles of the surveyors in relation to technology and images. The first test flights to use aerial image-making were quick to observe the method 'to a certain extent invades the premises of the surveyor of the old style' and that certain technologies were likely to displace once-valued skills.[68] As the potential to map using photogrammetry was refined the need for consistency became more pressing, since uniform flight conditions and camera settings were required to make stereoscopic images. Because the aircraft used were subject to unpredictable changes in speed and altitude caused by variations of wind and pressure, the union between the camera and the operator seemed easier to control and act upon. A popular manual on photography as a scientific instrument from the era included a chapter on aerial cameras, and discussed how 'the camera should fulfill certain requirements in order that any man, without previous photographic experience, might operate it with a minimum of instruction.'[69]

The search for reliable methods of long-distance control, transmission, and calculation of information is a key causal explanation in studies of the historical geographies of knowledge.[70] In the field of aerial photography, reverence for the technological instruments that carried this out bordered on fetishism. Throughout the 1930s, in survey and geography journals, articles proudly included a picture of a plotting device, stereocomparator, or field camera, but provided little explanation of the actual use or function of such machines, preferring instead to mention their size and cost. Nowhere was the intention of these instruments more clear than in the

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[68] Whitlock, Newcombe, Salmon, Brock, Holdich, Hinks, Hardy and MacLeod, Mapping from air photographs: discussion , 397.

[69] F. C. V. Laws, Aeronautical photography, in: A. Conrady, C. R. Davidson, C. R. Gibson, W. B. Hislop, F. Laws, J. Monypenny, H. Moss, A. S. Newman, G. H. Rodman, S. Sheppard, W. L. F. Wastell, W. M. Webb,H. S. L. Winterbotham (Eds), *Photography as a Scientific Implement*, London, 1924, 40; On the difficulties of holding a plane steady, see: A. Sandwell, *Planes over Canada,* London, 1938, 88-90.

[70] D. N. Livingstone, *Putting Science in its Place: Geographies of Scientific Knowledge,* Chicago, 2003; Law, On the Methods of Long Distance Control; Withers, *Placing the Enlightenment* .

advertisements of the private air surveys companies. When the premier Canadian firm, Fairchild's, showcased their intervalometer, a device for telling an automated airplane camera when to take pictures, they boasted that the removal of an 'additional observer-photographer' from this role would translate into more 'complete engineering data' including time of exposure, focal length, altitude, in such a way that 'the element of human errors has been completely eliminated.'[71] Designs to make the acquisition of measurements foolproof were crucial to establishing the quality of information from a distance, and expanding the geography over which the emerging scientific bureaucracy could claim legitimate knowledge.[72]

While survey controllers and technology companies celebrated technological advances, in the same journals surveyors announced their anxiety over the changing 'work' of making aerial images. A great deal of writing was devoted to how airplanes were different spaces from the older survey parties. At one time the chief surveyor may have hired 'every man as labourer' in a survey, from chainmen, cooks, and axemen, he was now surrounded by a Royal Canadian Air Force pilot, an aircraft mechanic, a specially-trained camera operator, each a 'picked man' responsible for attention to details, with the surveyor acting as navigator.[73] A British review of the Canadian surveys to consider its use in the cadastral survey of the colonies noted the 'close touch' and understanding among these survey teams, insisting that the quality of the Canadian photographic maps was derived from the relationship between the surveyor, camera operator, and pilot, and - most importantly - 'the personal knowledge of the surveyor and the information

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[71] Fairchild, Aerial photography , 51.
[72] S. Bocking, A disciplined geography: aviation, science, and the cold war in Northern Canada, 1945-1960, *Technology and culture* 50 (2009) 265-290 .
[73] J. McAree, The Relations between master and man on a survey party, *Proceedings of the Association of Dominion Land Surveyors at its Fifth Annual Meeting held at Ottawa, March 15th and 16th, 1888*, (1888, 117; G. H. Matthes, Oblique aerial surveying in Canada, *Geographical Review* 16 (1926) 568-582 (579).

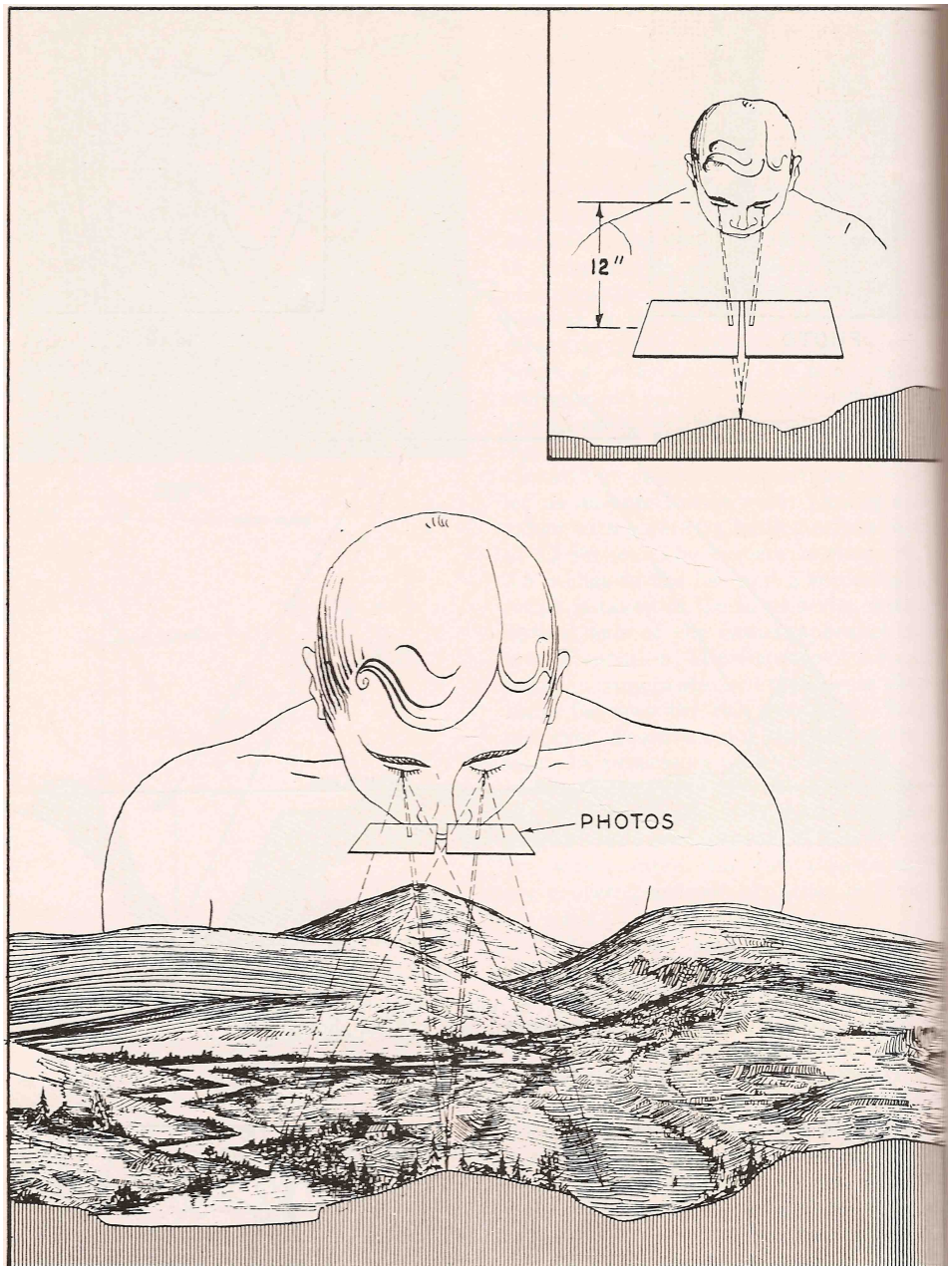

Fig. 13. The interpreter and landscape idealized

Source: E. L. Rabben, Fundamentals of photo interpretation, in: R. M. Colwell, American Society of Photogrammetry (Eds), *Manual of Photographic Interpretation*, Washington: American Society of Photogrammetry, 1960, 140. Reproduced with permission from the American Society for Photogrammetry and Remote Sensing, Bethesda, Maryland, www.asprs.org.

contained on the photograph.'[74] Arguments like these were meant to remind users of aerial images that, while the surveyor was not present within the frame, the quality and accuracy of the images still depended on his knowledge, labour, and skill.

As the mapping of Canada from the air proceeded in the first part of the twentieth century, securely delivering survey information into the records of the state grew in importance. This depended as much on the work of the survey crews as it did upon the ranks of librarians, archivists, and map-makers working with the image sets. After the National Air Photographic Library was established at Ottawa, any slides produced could be appropriately dated, indexed, and filed according to a master map.[75] This modern repository of high-altitude images did more than offer a stereo view of the landscape, it assembled under the aegis of one mission an emerging body of specialists back in Ottawa, allowing images to function as exchange media between disciplines. The value of aerial photographs, as Louis Woodward put it, is that the land only needed *one* survey, after which 'they may be viewed and studied at any time, for different purposes, by different types of engineers, scientists, and technicians.'[76] Rather than surveyors braving the environment, it was the expert interpreter, head down, at work in the laboratory that was beginning to figure in accounts. (Fig. 13)

An examination of the position of bodies in illustrations of stereoscopic ways of seeing reminds us again that vision is not only a natural process, but a statement about the observer, the thing observed, and the relationship between the two. Gillian Rose contends that the history of

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[74] Winterbotham, Surveys of Canada, 416 [quote; Whitlock, Newcombe, Salmon, Brock, Holdich, Hinks, Hardy and MacLeod, Mapping from air photographs: discussion, 399.
[75] Fletcher, Report of aerial topographic survey committee , 35.
[76] Woodward, Aerial photography as a map substitute , 15. For an illuminating history of archival practice and aerial photographic records, see J. Delaney, An inconvenient truth? scientific photography and archival ambivalence, *Archivaria* 65 (2008) 75-95 .

geographical knowledge-making, which has largely been presented as fieldworkers observing the environment, is deeply embedded in assumptions about the masculine spectator as witness to a docile feminine landscape.[77] In depictions of stereovision the laboratory or classroom observer is clearly masculine, perched in an abstract location high above the actual field. Rose calls these manoeuvres the 'distancing' of the observer from the situation of power they produce and in which they are embedded. Rose and other feminist theorists have demonstrated how the eye's retreat from 'situatedness' in the world in favour of technologies of seeing and visualizing from a distance reflect a landscape of power where the male observer's claim to knowledge is outside subjective doubt, an imposition of universalized reality that Donna Haraway usefully described as the 'God's-eye trick.'[78]

While aerial photogrammetry on one hand represented a new method of achieving universal vision, the vantage of the observer was also highly governed in its own right. Aerial photographs had always presented problems for 'untrained minds' learning to 'properly interpret' them, but from the 1940s and onward a renewed war in Europe and the reconstruction of national economies meant such requirements only increased importance.[79] As the role of the field surveyor in authoring the view was disappearing behind the mechanical objectivity of techno-scientific instruments, applied articles and manuals turned their attention from the practices and techniques of the good producer to the good interpreter of aerial photographs. Paradoxically, while limiting human influence over image-making in the field seemed to

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[77] G. Rose, Looking at landscape: the uneasy pleasures of power, in: D. Gregory, T. Barnes (Eds), *Reading Human Geography: The Poetics and Politics of Inquiry*, London, 1997 , 342-350.
[78] D. Haraway, *Simians, Cyborgs, and Women,* New York, 1991, 185-19; G. Rose, Situating knowledges: positionality, reflexivities and other tactics, *Progress in Human Geography* 21 (1997) 305-320 .
[79] Ives, *Airplane Photography*; Matthes, Oblique aerial surveying in Canada; Lee, Airplanes and geography, 313.

guarantee greater accuracy in aerial photographs, it was the implicitly human act of reading the image in the laboratory *after* its production that became the hallmark of objective science.

3.2 Aerial Photography, Geographical Vision, and the State

In the first run of *The Canadian Geographer* from 1954, the editors saw fit to publish a speech delivered to their association. In it, McGill geographer Kenneth Hare lamented how 'Canadian geographers are still struggling, not merely for greater professional and academic respectability, but for a clear-cut mission in the national life.' He explained that while established in schools and universities, and with a 'foothold, at least' in government, Canadian geographers were on the brink of something great, a mission 'of national priorities.' They were tasked with nothing short of the 'Re-exploration of Canada,' a project that would fill the blank spaces on the map for all time, opening the remote regions of Canada at last to modern development. 'How can this be done?' Hare posited, 'aerial photographic interpretation.'[80]

While Hare celebrated the value of the air photograph when used for photogrammetry, his 'mapping' of the national territory was a decidedly different endeavour. It would calculate resources, plan the best transportation routes, and assess the factors limiting and enabling human settlement. It was geographers, Hare proposed, who could map Canada best by reading the photographic qualities of aerial images. From a problematic by-product of excess detail in photogrammetry, interpretation expanded during the war from 1939-1945 into a full-blown science considered entirely apart from the principles of mapping. Unlike the Great War, when surveyors transferred the majority of their images into maps, during the Second World War the photographs produced by aerial sorties remained as images and were given to teams of

[80] F. K. Hare, The re-exploration of Canada, *The Canadian geographer* 1 (1954) 85-88

academics to be decoded, keyed and archived. Among the historians, urban planners, engineers, and other experts who provided such interpretative services, it was geographers who proved the least willing to relinquish their role after the war. They brought devices and methods used in air photograph interpretation during the war back into their classrooms and new university departments.[81]

Air photographic images found welcome reception in the schools where a generation of students had been raised on visual instruction and nature study in geography, twin pedagogies that taught through lantern slides and the interrogation of pictures. Through pictorial education, air photo interpretation found easy conduits into the elementary schools where before long it was openly suggested that the best way to teach students was to have them study low-level obliques in the primary grades, graduating to high obliques as juniors, and finally, for the advanced seniors, it would be on to vertical images viewed through stereoscopes.[82] In physical geography and related disciplines, air photograph interpretation was also making up ground. A series of textbooks were produced cataloguing landscape types in Canada, and students were expected to sit at rows of stereoscopes completing exercises that linked remotely sensed features with potential for mineral development.[83] The careful education of the observer meant cultivation for work in government or private industry, as Canada increasingly directed its attention toward land classification and development in the north.

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[81] R. R. Rawson and S. H. Beaver, Aerial photography and geographical studies, *Geography* 32 (1947) 131-134 (133).
[82] D. L. Linton, The use of air photographs in the teaching of geography, *Geography* 31 (1946) 129-134 , 130-132.
[83] C. L. Blair and R. I. Simpson, *The Canadian Landscape: Map and Air Photo Interpretation,* Toronto, 1967; J. D. Mollard, *Landforms and Surface Materials of Canada: A Stereoscopic Airphoto Atlas and Glossary,* Regina, SK, 1973 . A critical study of the role of Canadian geographers and earth scientists in establishing the framework for GIS during the 1960s remains to be written.

Producing a nation of aerial photograph viewers was important work, and practitioners could expect government employment after graduation. Different scholars have analyzed the pairing of geographical education and states after the Second World War in an effort to explain both the growing importance of the discipline and its increasing penetration in the social world of late twentieth-century society.[84] Matthew Farish has demonstrated how post-war human geography was induced to become the geopolitical logic of Cold War America's contestations with Russia.[85] In a parallel study, David Matless has shown how recognizing physical geography at the national scale grew to be an important marker of citizenship in reconstruction-era Britain.[86] Trevor Barnes has opened discussion on geography's disciplinary history in Canada, where he sees the development of a 'geographical state' after the war. Indeed, in post-war Canada many geographers wilfully imagined themselves as adjuncts to government nation-building with the special task of understanding and overcoming the country's unique physical challenges.[87] While these scholars are correct recognizing the links formed between geographers and governments in the post war period, the extent to which their utility depended on the role of objects and technologies in producing geographical knowledge must also be considered.

In a telling exchange in the *Geographical Review*, Harold Innis directly challenged geographers for what he saw as the dangerous strengthening of connections between academic

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[84] Schulten, *The Geographical Imagination in America* , 204-238.
[85] M. Farish, *The Contours of America's Cold War,* Minneapolis, 2010 .
[86] D. Matless, Visual culture and geographical citizenship: England in the 1940s, *Journal of Historical Geography* 22 (1996) 424-439; Matless, *Landscape and Englishness* .
[87] J. Warkentin and P. Simpson-Housley, The development of geographical study in Canada, 1870-2000, in: G. S. Dunbar (Ed), *Geography: Discipline, Profession and Subject since 1870. An International Survey*, Norwell, MA, 2001; T. J. Barnes, The geographical state: the development of Canadian geography, *Journal of Geography in Higher Education* 31 (2007) 161-177 .

geography and state militarism. Published just after WWII, his concern was how the 'specialization' of geography during that conflict had created a certain rigidity in interpretation of phenomena. For Innis, wartime cultural biases seemed to be circumscribing geographical understanding – he noted as an example how the newest topographic or climate maps now stopped at state borders, showing "scientific interest has been distorted to fit the mould of nationalism," and he chided that Horrabin and Mackinder's political geographies of England were barely distinguishable from wartime propaganda. But what alarmed Innis most was the promise that geographers had sacrificed their critical 'scepticism' in order to hold out a promise to the state: an objective truth of their interpretations, a certainty to observational truth, as though the laws of human and physical spatial patterns were about to be solved for all time. What he saw this thinking leading to was a "dangerous tendency to achieve finality" which had infected the democratic Allies during the war; they were keen to rely on geographic analysis "because it attempts to bridge the gulf between the natural sciences and the social sciences."[88] This bridging, Innis concluded, was not only human and physical, but ontological as well – it claimed the objective truth of geology and physical sciences, as well as the subjective truth of social interpretation. Aside from the necessity of war propelling these changes, Innis located one major factor in the entwining of geography and politics: the objects carrying geographical knowledge. For Innis, "mechanical devices such as charts and maps are useful only for the purposes for which they were constructed. But instead of being regarded as tools with the limitations of all tools, they become ends and accentuate finality."

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[88] H. A. Innis and J. O. M. Broek, Geography and nationalism: a discussion, *Geographical Review* 35 (1945) 301-311

With Innis's contemporary critique in mind, we may return to Ken Hare, who considered the aerial photograph a 'first-class geographical tool' that, with the right interpretation keys, could show 'a large part of both the physical and cultural landscapes.'[89] Though his inspirational argument that geographers 're-explore' Canada using aerial photographs may not have instigated transformations in the discipline, his enthusiastic embrace of photographic interpretation reflected the kinds of predetermined 'finality' Innis was sceptical of. Moreover, it reflected wider trends in the merging of geographical practice and national policy that had begun in the early-twentieth century and accelerated during the Second World War. By the 1950s and 1960s, the making of Canadian geographers had merged with the historical making of aerial photographs, creating a dialectical relationship whereby both where changed. Rather than an embodied view of the landscape, the new geographical vision repositioned both of the comprehensive qualities of aerial images and the position of geographers in relation to the archives and imaging technologies aerial photography was developing. It was likely Hare borrowed from colleagues in the UK and US like Frank Walker and George Stokes. Cambridge professor Walker's immensely popular *Geography from the Air* celebrated air photographs as the best geographical tool because they offered 'a perfect topographic model of the area in question.' Thinking back on his early education, Walker admitted geographers would 'ideally' be in the field investigating nature first hand, but the nature of the air photograph made observation different. As a perfect copy of any environment it would suffice and in certain ways out-do primary observations. Walker's central claim was that the air photograph and the geographer were naturally matched, because the former 'inevitably records all visible evidence of human

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[89] Hare, The re-exploration of Canada , 87.

activity in relationship to its physical setting' and the latter was trained in 'expert judgment,' able to parse the incidental and synthesize the valuable of information.[90] At the same time in the US, geographers were exploring the use of air photographs in social geography. In an article describing air images as 'a key to the cultural landscape' Stokes explained how such expertise could be applied to the air photograph in ways the map could not, such providing an analysis from above of the different urban patterns between 'White Residential' and 'Negro Residential' areas in several Louisiana towns.[91]

Geographers married approaches in the discipline with what aerial photographs were able to say. Not long after Richard Hartshorne's *The Nature of Geography* aimed a generation of social scientists at descriptive geography and areal differentiation, photo interpreters began looking for spatial laws in aerial images. In the same way photogrammetrists measured topography using the rules of perspective, human geographers scoured landscapes for the rules of nature. Besides the claim that they demonstrated pattern of human and physical sculpting of the landscape, aerial photographs were said to allow the 'direct apprehension of space-relations' and to offer them from a 'universal' position, meaning that through aerial photography anywhere on the earth was visible.[92] In Canada, where spatial science found fertile ground in regional analysis and area studies, the air photograph became emblematic of a new approach to doing geography. An illustrative example comes from *Canada: A Regional Geography,* where university students were presented with a map and oblique aerial photograph of Halifax Harbour: from the map, students were asked to interpret the value and rate of commodities exchanged at

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[90] F. Walker, *Geography From the Air,* London, 1953 , 9.
[91] G. A. Stokes, The aerial photograph: a key to the cultural landscape, *Journal of Geography* 49 (1950) 32-40 (35).
[92] Linton, Interpretation of air photographs , 90.

the port's terminal centres, before correlating mapped features with the aerial photograph, which was used to determine how the last period of glaciation affected the landscape in a way that made it ideal for settlement.[93] (Fig. 33) Air photographs became so central to education that the cover of pioneering geography teacher Neville Scarfe's regional textbook, the self-proclaimed *New Geography of Canada* from 1963, provided a vertical image of the prairie landscape near Champion, Alberta. (Fig. 14) The authors advised students to read the image as an allegory of Canadian surveying, the regional experience, and the air photograph as a geographical tool: 'This is an excellent example of man's effect on the landscape and in turn the limitations put on man by the existing natural conditions. The lines of the survey system are easily seen, but notice how many times they are interrupted by some land formation.'[94]

Re-orderings of the representational work accomplished by different tools of seeing landscapes found geographers explaining how Canada could be seen between the photograph and the map. They recovered the ability to read general characteristics from air photographs, but rather than vest objectivity in first-hand field experience they insisted that Canada's geographical imagination could be accomplished in image libraries and textbooks, thus enabling a range of new practitioners and interests to see Canada from a modern vantage – a laboratory view that was 'everywhere and nowhere' in the words of Jan Golinski.[95] This raises the question of how geographers understood and placed their craft in relation to the aims of the state and private enterprise during the post-war reconstruction period. To be sure, not all were as zealous as Ken Hare, but large amounts of trained photo-interpreters were entering government service. What

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[93] G. S. Tomkins and T. L. Hills, *Canada: A Regional Geography,* Toronto, 1962 .
[94] N. V. Scarfe, G. S. Tomkins and D. M. Tomkins, *A New Geography of Canada,* Toronto, 1963 , i.
[95] J. Golinski, *Making Natural Knowledge: Constructivism and the History of Science,* Chicago and London, 2005 , 80.

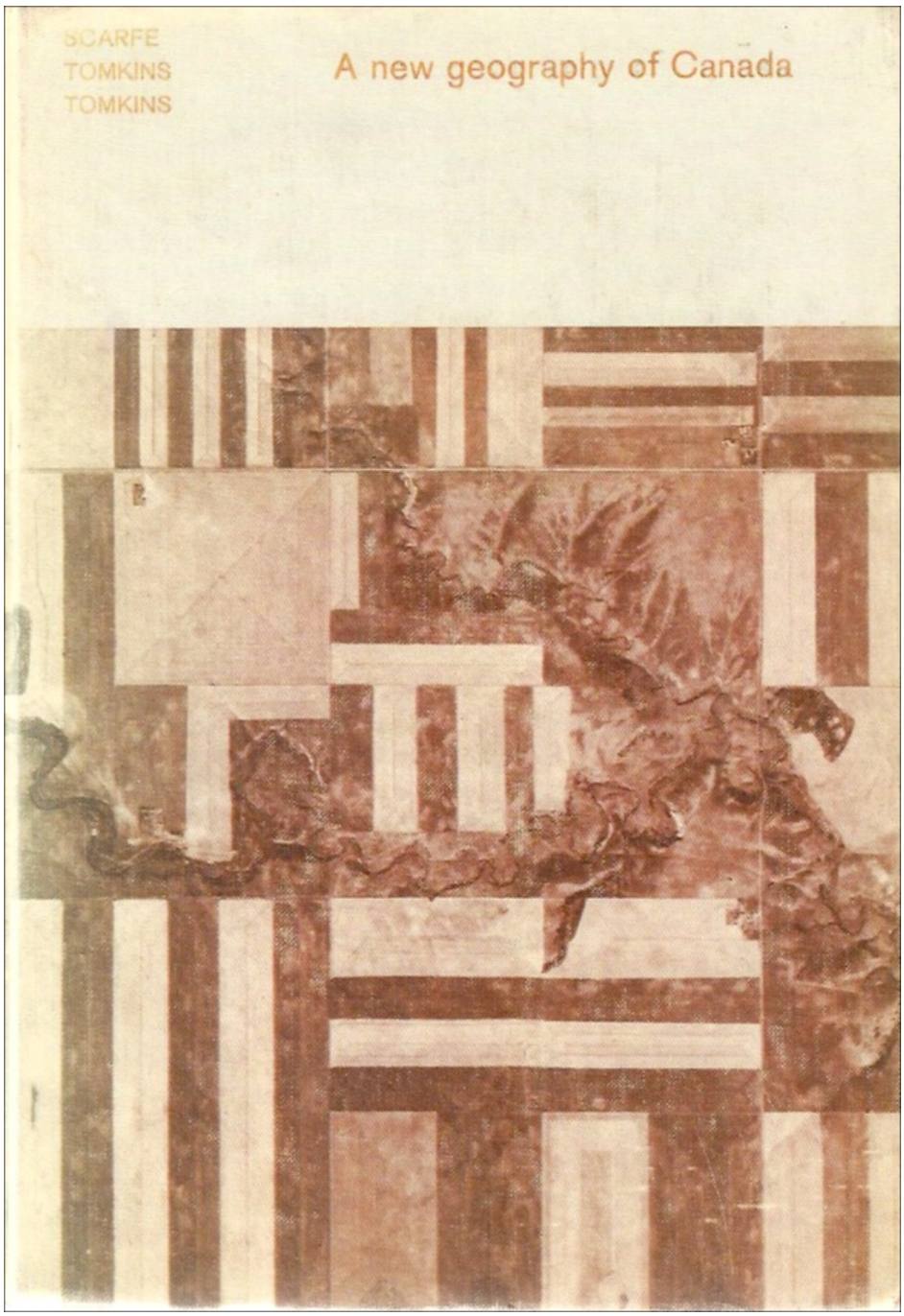

Fig. 14. Human and physical geography

Source: N. V. Scarfe, G. S. Tomkins and D. M. Tomkins, *A New Geography of Canada,* Toronto: W.J. Gage Ltd, 1963, cover. Public domain.

made their practice valuable to the state was the entwining of this new *object* - the aerial photograph, as a key to interpreting the past, present, and future of the national landscape - with trained geographical vision.

The re-making of the aerial photograph into a statement about human relationship with nature offers an example of what sociologist John Law describes as the multiple meanings emerging out of technoscientific objects in modernity. He describes the tools of modern science as both singular and plural, suggesting they have 'fractional coherence' because they are always 'more than one but less than many.'[96] The aerial photograph was always the result of a relatively straightforward process; it was a picture taken from a point high above the earth. However, as a material image it refused the cartographic orderings assigned to it and continued to speak to the many things it was increasingly thought to do, such as map forestry cover, discover geological deposits, manage wildlife, design for engineering, improve agriculture and, increasingly, provide clues about the present and past human geography below, were its plural effects. However, as fast its usages multiplied fractionally, a new authority arose to circumscribe each new use.

By the 1960s, Canadian geographers had appropriated a visual perspective developed through a century of debate about the uses of photogrammetry and the role of maps and photographs in the aerial reconnaissance of the country. Before World War II, it was the *cartographic* qualities of the air photograph and the mechanical role of instrumentation in producing photogrammetric images that was emphasized, whereas the post-war period saw the development of interpretation and geographers more willing to engage the *photographic* detail of the image as a key to the characteristics of landscape. These were claims about how to see

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[96] J. Law, *Aircraft Stories: Decentering the Object in Technoscience,* Durham, NC, 2002 , 3.

Canada, and at very particular levels they were claims to what ways of seeing were most useful: the cartographic or the photographic. The possibility of different ways of representing and seeing objectively depended greatly on the different meanings that could be invested in air photographs and competing claims to how they represented. This is the historical epistemology of the aerial photograph—how the way it produced knowledge was shaped and constituted. The historical ontology of the air photograph moves the making of the object to the centre of the story. The question of photograph or map was really about making a kind of observer – a subject that matched up with the type of knowledges the air photograph was believed to reveal. Making the country modern through aerial photography was not only, as A.M. Narraway suggested in 1933, about disciplining the 'geographical imagination' of Canadians. It was equally about imagining geographers who would be able to read the meanings emitted from the images. Every claim to what the aerial photograph actually was involved a claim about the way a subject would or would not be able to read information from it. Rather than bring the qualities of the photograph and the map to Canada, the aerial photograph allowed the deep projection of these representations into the minds of Canadians.

Chapter 4: Visualizing Geography

"I now require this of all pictures, that they domesticate me, not that they dazzle me."

- Ralph Waldo Emerson, *Essays*, 1841

"The child of today is confronted on all sides by the pictured world."

- Dean McClusky, *An Experimental Comparison of Different Methods of Instruction*, 1922.

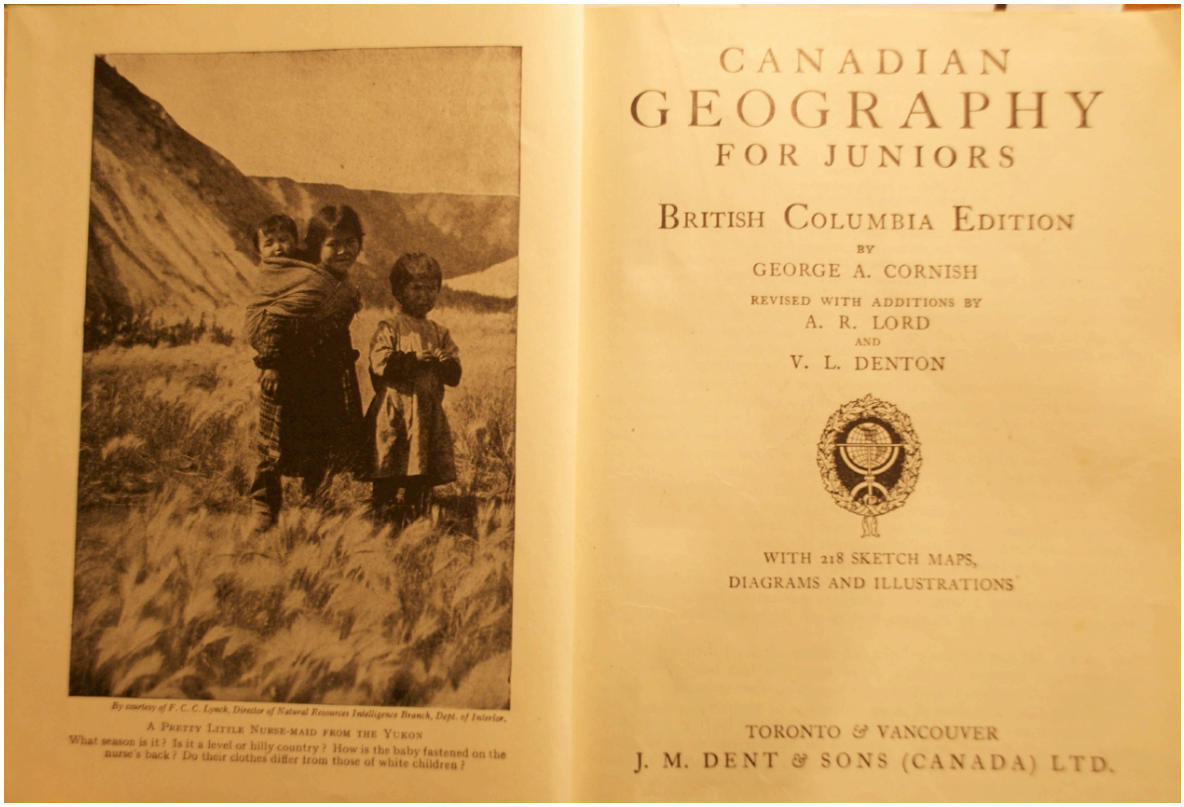

Fig. 15. 'A Pretty Little Nurse-Maid from the Yukon'

Source: G. A. Cornish, A.R. Lord and V.L. Denton, *Canadian Geography for Juniors,* Toronto and Vancouver: J.M. Dent & Sons Ltd, 1941, frontispiece.

4.1 'Confronted By Vision'

At the start of every school year, Canadian elementary students could look forward to new friends and classes, a different room and perhaps a new desk, a new teacher (for better or worse), and—in some subjects if they were lucky—a new textbook. The first proper geography reader many encountered was George Cornish's 1927 *Canadian Geography for Juniors*. (Fig. 15) Opening the cover page to investigate its contents, the young students would find their gaze resting upon an image. Few from southern Canada would recognize the scene, but could likely place its location from the title: "A Pretty Little Nurse-Maid from the Yukon." Looking at the picture they would see a young woman with a baby on her back. She stood amid a swath of wild barley swaying in the foreground, a treeless landscape extending behind her, and the ridge of a river bluff running into the distance. Beside her they would see a young girl in a white dress holding an unseen object in her hands as she stares into the distance, and find the young mother returning their gaze through the camera. All we are told about making of the image is in the caption – it appeared courtesy of F.C.C. Lynch, the director of the Natural Resources Intelligence Branch of the Canadian Department of the Interior. Beneath this acknowledgment there were a number of rudimentary questions, intended for discussion in class: "What season is it?", "Is it a level or hilly country?" and "Do their clothes differ from those of white children?" The image was not intended to draw attention to the encounter between a government official and First Nations inhabitants of the Yukon, nor was it meant to encourage children to marvel at the work of the Department of the Interior. Instead, children were directed to reflect upon the vegetation and topography of the landscape and ponder the dress of the subjects as they considered their own difference from these people. In this way, the children were being 'visually instructed.'

Images like the nursemaid do not appear in Canadian textbooks of an earlier vintage. Nineteenth-century illustrations offering 'pictorial' views of *general* places were replaced in the twentieth by pictures intended to deliver *specific* information about regions and their inhabitants. George Cornish selected the nursemaid image because it contained observable facts, such as information about climate and vegetation, or the physical geography of the earth, and since it offered children a chance to study the different 'races' that occupied the planet in relation to their environments. This chapter tells the spatial history of this new set of geographical teaching images that appeared in the early-twentieth century. It examines how and why certain kinds of depictions became freighted with new values relating to observation and truth, and where those values lie today. Beyond the burden on her back, the nursemaid standing in the Yukon still carries a larger message about the use of images in geography at the turn of the century. Her photograph on one hand represents a newly imagined role for geography as the study of relationships between environment and culture, envisioning 'the earth as the home of man' and able to synthesize understandings between landscape and region, citizenship and belonging.[1] On the other it represents a new role for pictures all together—the belief that geographical facts and relationships could first be vested in a image and later be taken in at a glance, elicited by the proper questions, and be revealed if one's eyes were trained to see the picture in the correct way. These are the spatial histories interpreted in the first part of this chapter: how geographical images were invested with new values and how geography students were expected to read them. The second part concerns the arrival of these new ideas for teaching in Canadian schools. I focus on textbook images to show that, even though they were developed elsewhere, when new

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[1] C. R. Dryer, What is geography?, *Journal of Geography* 4 (1905) 348-360; C. A. McMurry, *Special Method in Geography from the Third Through the Eighth Grade,* London, 1903, 8.

practices of 'visual instruction' arrived in Canada they had important effects on the regional model for the country Canadian geographers were developing.

4.1.1 Modernity and Truth in the Nineteenth Century

Between the 1900s and the 1930s, educational theorists in the United States, Britain, and eventually Canada discovered and elaborated upon the power of conveying information using images and representation. Schoolteachers were encouraged to explore the practice of 'visual instruction,' which promised that children's direct observational experience was the best means of acquiring and comprehending knowledge. To enable this, pictures and photographs were transformed from demonstrative and entertaining illustrations into modernizing drivers of education. Interpreting this transformation means peering through a window into this era of sweeping educational reform and the culture of modernity within which it was situated. Stephen Kern speaks of modernity as the dissolution of clear notions of space and time, when "the old forms of life and thought were cracking right down to their metaphysical foundations."[2] Modris Eksteins contends the birth of the modern involved the 'eclipse of certainty' over the legitimacy of authority, the nature of authentic experience, and the boundaries of what constituted truth.[3] These cultural historians offer a European view of modernity where the stability of old regimes was broken apart by the tremendous upheaval of the Great War. However, scholars have shown how the same questions of modernity dogged relatively peaceful North Americans, where contests over authenticity, truth, and appearance weighed on cultural mentalities.[4]

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[2] S. Kern, *The Culture of Time and Space, 1880-1918,* Cambridge, 1987, 183.
[3] M. Eksteins, *Rites of Spring: The Great War and the Birth of the Modern Age,* Boston, 1989; M. Eksteins, *Solar Dance: Van Gogh, Forgery, and the Eclipse of Certainty,* Cambridge, MA, 2012.
[4] Orvell, *The Real Thing*; K. Walden, *Becoming Modern in Toronto: The Industrial Exhibition and the Shaping of a Late Victorian Culture,* Toronto, 1997.

To pinpoint when or where modernity started and what it should mean is both a difficult task and dangerously teleological. Stuart Hall suggests we should consider 'modernity' as a series of 'formations' that best describe the emergent and often contradictory social processes that reshape societies. [5] Formations of modernity may also be great or small. Even George Cornish imagined his *Canadian Geography for Juniors* a 'protest' against those teachers who "too often continue in the old dull paths." Those he battled were the traditional teachers who considered learning using pictures a 'Sunday School' method that did more to obscure truth than reveal it. In defence of the old methods came men like H.F. Beckler, who expressed wholehearted disdain for the use of "devices which entertain and hold interest but do not secure results proportionate to the time consumed and which merely earn for the subject the epithets 'undignified' and 'unscientific'"[6] These disputes were much more than differing preferences in geography teaching. The question of the visual was at the heart of deeply modern debates about knowledge and reality: were images important pathways to knowledge, or were they merely ephemera in need of brushing aside to arrive at a true facts. Surveying these questions and pondering the changes in education they were precipitating, the leading architect of visual learning, Dean McClusky opined in the late 1910s that children were "confronted by vision." What was the nature of this confrontation? What was at stake? And what were the results?

There are at least three circumstances unique to the early-twentieth century that being 'confronted' by vision expresses. The first is that more than ever images made up the world. Classrooms were no exception to a culture obsessed with cartes-des-visites, snapshots, albums,

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[5] S. Hall (Ed), *Modernity: An Introduction to Modern Societies*, Cambridge, MA, 1996, 9.
[6] H. F. Beckler, *Canadian Geography for Juniors* by George A. Cornish. Review by: H. F. Becker, *The Elementary School Journal* 29 (1928) 236-237, 237.

stereoscopes, and film. In schools by the 1920s, North American geography students could expect 80% of the pages in their readers to have pictures, with nearly a quarter of these taking up the entire page.[7] This was possible because the popular craze for images also drove reproduction technologies, causing the price of reproducing a photographic plate to drop from $100 to $10 in the first decade of the twentieth century.[8] The amount and sophistication of these images led some even to predict that teachers would soon depart the classroom, replaced by volumes of photographs able to teach more about the world than any one person. Fears that characterize today's early twenty-first century Information Age, like the need to educate 'digitally literate' children, weighed similarly on parents and teachers at the last turn of the century, who pressed the need for a children able to negotiate an increasingly visual society. This connects to a second way children were 'confronted by vision'– that *seeing* began to be thought of instrumentally, as something that could be honed, developed, and manipulated. In vocational training, visual instruction rose to meet the demands of industrial society distrustful of book learning, after "the realization that all who went to school could not enter white-collar jobs implemented the growing demand for more practical curricula."[9] At technical schools boys learned woodworking skills using pictures, while *The New York Times* reviewed demonstrations where young girls learned through images to keep domestic space orderly.[10] During the Great War the Allied Armies employed visual instruction to quickly prepare troops for war in Europe, while in the 1920s the National Academy of Visual Instruction used the same methods for

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[7] I. R. Melbo and I. R. Waterman, Pictures in geography textbooks, *The Elementary School Journal* 36 (1936) 362-376, 364.
[8] P. Fox, Images in geography - great expectations, *Geography* 90 (2005) 3-17.
[9] R. Saettler, *The Evolution of American Educational Technology,* Greenwich, CT, 2004, 168.
[10] "Visual instruction is exhibited daily: girls in home-making classes serve meals at City Jubilee Exposition. Probation work shown boys operating lathes and presses demonstrate means of preventing truancy," *New York Times* (New York), 3 June 1923, E1.

'Americanization' of immigrants, employing images to teach foreigners about US notions of health and civic society.[11] Others argued visual instruction would lead the way to world peace because pictures familiarized distant people, enabling a global view of "the world as the home of the great human family."[12] Attention to vision, employed correctly, seemed to open new ways of seeing and a new world of possibilities for sight itself. Among these one defined all others, and goes furthest to explain what it meant to be confronted by vision at the end of the nineteenth century: the 'visual' became a measure of truth. Edison's dictum to "teach things, not words" was so alive in the Progressive Era that 'thought' and 'vision' seemed to lose their distinction. "Seeing is believing" came to epitomize a way of evaluating and knowing the world as objectivity and observation became equated with the eyes as both the primary and most natural record for measuring the difference between truth and falsehood.[13] The most important faculty to give children confronted by vision was the ability to observe the world truthfully because, as pioneering psychologist and educator G. Stanley Hall explained, "seeing is not only believing, but understanding, and a single judicious picture … often tells in a moment what it would take paragraphs to describe, if indeed words could ever give it at all."[14]

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[11] W. R. Duffey, *Visual Instruction Through Lantern Slides and Motion Picture Films,* Austin, 1918; National Academy of Visual Instruction, Proceedings, *First Annual Meeting of the National Academy of Visual Instruction*, (1922).

[12] A. V. Dorris, *Visual Instruction in the Public Schools,* Boston, 1928, 247.

[13] The importance of vision at the turn of the twentieth century has also informed cultural critics, and inspired Martin Jay's description of the era as 'occularcentic.' Jay suggest the proliferation of images and signs mediated social life to an extent those living through these fast paced changes confronted various 'scopic regimes of modernity.' The weight of these changes was not lost on contemporaries. Walter Benjamin even came to rest upon the language of the visual to launch his critique of progress in history through the 'dialectical image,' a means of interpreting the apparent accumulation of the past within modernity. M. Jay, The rise of hermeneutics and the crisis of occularcentrism, *Poetics Today* 9 (1988); Jay, Scopic regimes of modernity; Benjamin and Tiedemann, *The Arcades Project*, 462; N462a, 463.

[14] G. S. Hall, Foreward, in: C. N. Kendall (Ed), *Pictured Knowledge: Visual Instruction Practically Applied for the Home and School. Volume 1*, Chicago, 1917, xii.

To be 'confronted by vision' was to live through a change in the spaces of knowledge: where it was thought to be, its scale of truth and falsity, its retention in the mind, and how to map its coordinates onto the brain of the child. Geography both responded to and inspired these new ways of thinking, as the classification, order, and analytic methods of the nineteenth-century discipline gave way to ones prioritizing observation, inference, and synthesis. Many believed the new geography could be taught to students through pictures, and they were not alone: visual instruction grew out of Progressive Era momentum for reform. A wider attention to education helped produce a raft of professional journals in all subjects for teachers to draw from. Moreover, these changes were carried out across a number of spatial and subjective terrains—between the US, the UK, and Canada, as well as inside pictures themselves and the minds of students and teachers. These terrains form the first part of this chapter: how progressive reform, new methods in geography, and visual instruction formed in the late nineteenth and early-twentieth century and displaced the old order of things. The second concerns how these ideas later arrived in Canada and helped shape geographical thought and images there, where the language and practice of visual instruction in geography provided a vantage for the regional imagination soon to take hold.

4.2 The Old Order of Things

Compared to the wide fascination with the geographical expeditions of famous men like Stanley and Livingston forging into unknown continents, school geography in the mid-nineteenth century had the distinct reputation of being as dry as dust. In the eyes of many students it was an 'old bones' subject, its teachers tended to be unqualified or uninterested in the subject matter, and its textbooks were famous for reams of uninspiring factual information. For students,

studying geography could best be described as an exercise in memorization; a matter of recalling the tedious definitions of 'capes and bays' listed in the text. Looking closely at the textbooks used in nineteenth-century schoolrooms sheds light on why students may have felt this way. Because they provided information about the nation state, even the dry-as-dust schoolbooks also helped students 'imagine' themselves as part of a national community.[15] Other countries were judged according to the same social values to the extent that J.M. Blaut has argued geography textbooks perpetrated a colonizer's view of the world. Blaut makes an important case that any textbook is a cultural indicator, calling it "a vetted social statement of what is considered valid and acceptable for entry into the mind of the child."[16]

Following Blaut's approach, geography textbooks may be seen as expressions of social values in different countries. In England, Jonathan Smith traces the connection between geography and political rule offered in the private school system, suggesting the emergence of the educated gentleman, the public sphere, and the growing complexity of early modern states contributed to the belief that attaining geographical knowledge was a key to acquiring political power.[17] Some familiarity with geography textbooks laden with detailed economic data on the commerce of various European empires could thus be seen as an important practice of self-fashioning. Like their British counterparts, many American readers were presented with facts

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[15] J. Morgan, Imagined country: national environmental ideologies in school geography textbooks, *Antipode* 35 (2003) 444-462, 445.
[16] J. M. Blaut, *The Colonizer's Model of the World: Geographical Diffusionism and Eurocentric History,* New York, 1998, 46. cf. S. Bowles and H. Gints, *Schooling in Capitalist America: Educational Reform and the Contradictions of Economic Life,* New York, 1976; R. Henley, The ideology of geographical language, in: F. Slater (Ed), *Language and Learning in the Teaching of Geography*, London, 1989; R. A. Butlin, Historical geographies of knowledge and education, in: R. Kitchen, N. Thrift (Eds), *International Encyclopedia of Human Geography, Volume K*, Oxford, 2009.
[17] J. M. Smith, State formation, geography, and a gentleman's education, *Geographical Review* 86 (1996) 91-100, 91.

about physical and commercial geography, so students would know which countries were rich in coal and what others poor in wheat. These values were seen as important because they promised to "give all who are acquainted with them an advantage over those who do not possess such knowledge."[18] Education historian William Marsden has shown that while American texts were eager to make authoritative pronouncements on the qualities of other states and the character of their peoples, they were unique in emphasizing democratic nationalism and republican values.[19] In English-speaking Canada, where geography awaited an important social mission, textbooks were framed in only two different ways depending on the values of the author. They either outlined the geography of Britain and her colonies with a short section at the end on Canada the ever-loyal colony, or as was becoming the case towards the end of the century they reversed these roles.[20]

While educational cultures differed across the English-speaking world, they did share many similarities. First among these was probably the fact that nearly all geography textbooks had pictures. Geography did not become visual at the turn of the century with the introduction of visual instruction.[21] Textbooks promising a geographical education using pictures appeared as

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[18] S. A. Mitchell, *Mitchell's School Geography. New Revised Edition. A System of Modern Geography Comprising a Description of the Present State of the World, and its Five Great Divisions, America, Europe, Asia, Africa, and Oceana, with their Several Empires, Kingdoms, States, Territories, Etc., Embellished by Numerous Engravings. Adapted to the Capacity of Youth,* Philadelphia, 1860, vi.

[19] M. Bruckner, Lessons in geography: maps, spellers, and other grammars of nationalism in the early republic, *American Quarterly* 51 (1999) 311-343; W. E. Marsden, 'Poisoned history': a comparative study of nationalism, propaganda and the treatment of war and peace in the late nineteenth- and early twentieth-century school curriculum, *History of Education* 29 (2000) 29-47.

[20] In nineteenth-century Canadian schools, geography was rarely required and often not taught in senior grades. Warkentin and Simpson-Housley, The development of geographical study in Canada, 1870-2000.

[21] Indeed, a very illuminating debate on Gillian Rose's question, "How, exactly, is geography visual" revealed deep historical connections. Rose and others' collective conclusion was that geography as a visual discipline is also 'disciplinary of vision.' Rose, On the need to ask how, exactly, is geography "visual"? . On disciplining vision in Canada, see B. Braun, Buried epistemologies: the politics of nature in (post)colonial British Columbia, *Annals of the*

early as 1657 from the Czech teacher John Amos Comenius. His *Orbis Sensualium Pictus* used woodcuts to show 'earth pictured for the senses' and sought to carry students on a visual journey through the orders of the early modern world. Each plate was labeled and indexed so that students reviewing 'reptiles and beasts that walk upon the land' could look at the animal with the number beside it and know both the Latin and vernacular name. (Fig. 16) Though some of his depictions may seem fanciful today, including his depictions of cyclopes, unicorns, and the basilisk "that killeth with his eyes," the *Orbis* was valuable enough to be reprinted in England well into the nineteenth century. By that time other textbooks were in use, and although geography had broadened its base of knowledge and was aspiring to the ranks of higher education, the general disciplinary methods presented to elementary students remained very similar. Geography was an inventorial practice concerned with the identification and organization of things as they appeared in the world. This approach guided both the layout of information in the texts and their use of pictures. While information about the world grew and textbooks proliferated in the age of print and universal education, *how* that content was delivered remained virtually unchanged. Visual material in geography textbooks were dominated by classification, the analytic method, and pictorial presentation—three longstanding approaches that progressive reformers would eventually slate for demolition to make way for 'visual instruction' at the end of the century.

Association of American Geographers 87 (1997) 3-31; Braun, Producing vertical territory; McTavish, Learning to see in New Brunswick, 1862-1929.

Fig. 16. 'Serpentes & Reptilia'

Woodcut 33 from Comenius's geography textbook from the seventeenth century. Before Carl Linnaeus, one way to classify animals was by their behaviour – things that 'creep' were put together. Note the dragon (9) and the winged basilisk (10).

Source: J. A. Comenius, *Orbis Sensualium Pictus: Visible Word: Or, A Nomenclature, and Pictures, of all the Chief Things that are in the World, and of Men's Employments Therein; In Above 150 Cuts*, London: S. Leacroft, 1777 [1657], 40.

4.3 Classification

Understanding how and why visual instruction mavens considered their method such a sweeping alternative to older ones requires a closer look at how education was delivered visually. Most image use in the nineteenth century shared a common element in that the composition of the picture was determined by the information presented in the text. The knowledge was located in the tables, names, and descriptions of geographical fact, whereas the picture worked to reflect or exemplify – a relationship visual instruction eventually tried to change. This lesser place for images is illustrated most clearly by the most popular technique used in nineteenth-century schools: classification. Philpot Sutton's 1837 reader printed in Lower Canada, *A Systematic Arrangement of Modern Geography Upon the Classification System*, is the best early adoption of the method. Sutton insisted that the best way to teach geography was to have children learn to recognize groups of things in the world, which required study in a systematic arrangement from large to small. The sequence began with the boundaries of each country on the map then, "the divisions, capitals, population, &c., next the bodies of water, capes, rivers and islands."[22] When this information was successfully stored in the mind, they could work with the atlas. In this system, it was seen as important that students not only knew the names of the Canadian great lakes, but also that their size in area proceeded from Superior through Huron, Erie, and Ontario and finally the length, breadth, common depth, and circumference of each.[23]

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[22] J. P. Sutton, *The Student's Guide and Teacher's Text Book: Being a Systematic Arrangement of Modern Geography upon the Classification System Adapted to the most Approved Atlases Now in Use,* Montreal, [1837], 1842.
[23] T. Ewing, *Canadian School Geography,* Montreal, 1843, 20.

Fig. 17. 'Pictorial Illustrations of Various Geographical Terms'

These pictures did not represent anywhere found in Canada. Instead they attempted to portray the lists of general physical features students recited in the text, presenting students with a world ordered by scales and objects within them.

Source: J. G. Hodgins, *Easy Lessons in General Geography, with Maps and Illustrations: Being Introductory to 'Lovell's General Geography'*, Montreal: J. Lovell, 1863, 16.

In order to accomplish the task of systemic ordering, students were provided with classification tables that outlined the differences between hills and hummocks, what were bays and inlets, and how to tell towns from settlements. The recommended exercise for committing these to memory was simple recitation of the different landforms or bodies of water, always descending from the largest, and therefore most significant, to the smallest and least. As guides to the learning, the images used in textbooks demonstrated these categories. A finely crafted image from the popular Canadian textbook, *Lovell's General Geography* provides a particularly rich example of how illustrators sought to capture and visualize the tables and lists provided in the text. (Fig. 17) The sketch depicts a continent ringed by an ocean with high mountains looming on the horizon. Students could outline the landmass by learning the size and shape of what constituted a sea, a gulf, a straight, inlet, bay, or sound. Rivers, prairie, deserts, and forests give the major types of land cover, while the strata of human activity is seen in the bustling trade between the capital city and exchange port near the isthmus, where full-rigged tall ships crowd the harbor. This imaginary isle and its geography did not show the world outside; rather, it reflected the tables found in the books. Its function was to display and support the authority of the text and aid the teacher in the organization of that knowledge.

While classification tables and images were useful for teaching because they were able to organize and portray a wide array of geographical concepts to the student, they also held other purposes. For instance, the physical layout of the geography matched and informed the political layout of the book. If the biggest mountains and lakes were always listed first, then the same followed for different nations. Schoolchildren reading Ewing's 1842, *Canadian School*

Geography found the first half of their book outlining the geography of British possessions in North America, listing the boundaries of sovereignty and, within each territory, the chief physical features and common resources. The textbook then proceeded through the nations and states clearly behind Britain in the colonial race. Classification systems in geography textbooks implicitly ordered the world according to empire, highlighting naming and knowing as key aspects of legitimate ownership and arranging the world according to hierarchies of place and race. By providing the imaginary landmasses where these systems were visualized, images supported and reflected value systems arranged in the text. (Fig. 18) The goal presented in school geography was being able memorize and identify classes of things that that could be found in a real landscape according the system, not to explain why there were there – a domain generally attributed to God.[24] As a result, Canadian students *using Lovell's Intermediate Geography* encountered pictures not much different from those used by Comenius 300 years earlier.

Classification was in many ways an entirely adequate system: to identify concrete landforms and places in the world students first required a set of abstract ideas and concepts they could assign to them, which they could acquire by remembering the hierarchies of similar things. On the other hand, to many the tremendous drawback of classification was revealed not by the concepts themselves, but what information was deliberately left out of the texts. For instance, in writing his immensely popular *Geography for Young Beginners* (1874) John Langler proudly

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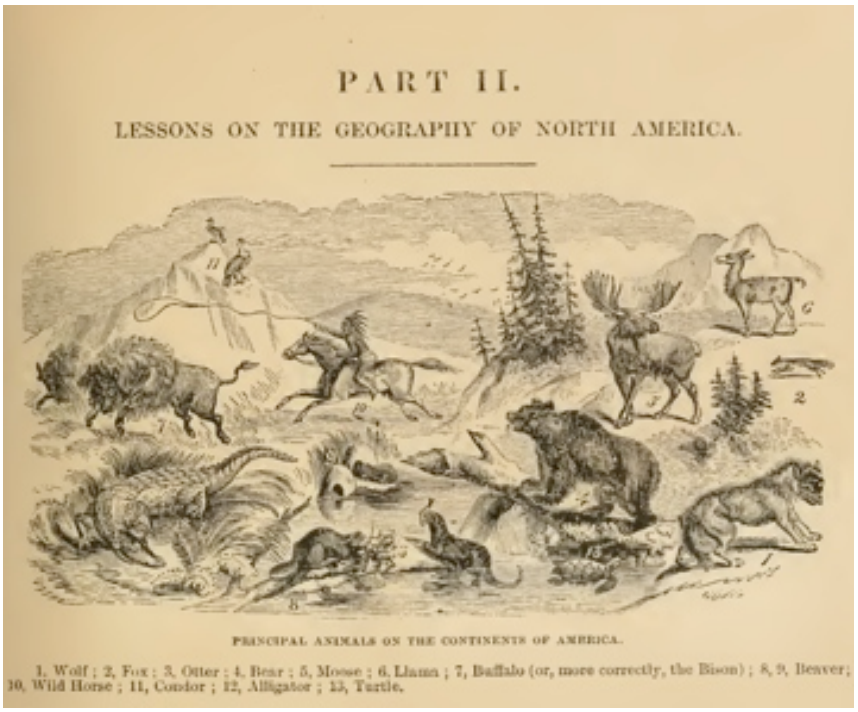
[24] Sutton gave advice to teachers on exactly what order students should recall their lessons in: "The method here given of describing the Amazon, should be applied to all the largest rivers on the globe: Amazon rises in Columbia, South, and flows East 4,500 miles through Columbia and Brazil into the Atlantic Ocean." Sutton, *The Student's Guide* , preface.

Fig. 18. 'Stages of Society'

The same approach to classification used in Mitchell's popular American textbook, *A System of Modern Geography*. It emphasized the connection between geography and imperial rule by presenting students with a visual rubric outlining the 'stages of society,' placing Caucasians at the pinnacle of civilization and in reference to the races and nations of the world that were thought to be the least advanced. The relation between these different groups was less important that the classificatory differences separating them inside systems of order. Thus successful

students were able to separate ‘barbarous’ from ‘savage’ nations by noting the later were “bloodthirsty and revengeful, often eat the flesh of the enemies they take in war, and treat their women as slaves.” The furthest they went toward establishing any relationship was a loaded moral question: “which is the most noble of the five races?”

Source: S. A. Mitchell, *Mitchell's School Geography. New Revised Edition. A System of Modern Geography Comprising a Description of the Present State of the World, and its Five Great Divisions, America, Europe, Asia, Africa, and Oceana, with their Several Empires, Kingdoms, States, Territories, Etc., Embellished by Numerous Engravings. Adapted to the Capacity of Youth,* Philadelphia: E.H. Butler & Co, 1860, 41-42.


PART II.

LESSONS ON THE GEOGRAPHY OF NORTH AMERICA.

PRINCIPAL ANIMALS ON THE CONTINENTS OF AMERICA.

1, Wolf ; 2, Fox ; 3, Otter ; 4, Bear ; 5, Moose ; 6, Llama ; 7, Buffalo (or, more correctly, the Bison) ; 8, 9, Beaver; 10, Wild Horse ; 11, Condor ; 12, Alligator ; 13, Turtle.

Fig. 19. ‘Principal Animals on the Continents of America’

Here the purpose is not to classify according to genus or family, but according to geographical region. The *way* the image contains and communicates knowledge remains unchanged.

Source: *Lovell's Intermediate Geography, with Maps and Illustrations; Being Introductory to Lovell's Advanced Geography*, Montreal: John Lovell, 1879, 27.

claimed to emphasize the 'what and where' of geography and omitting the 'dry and repulsive' question of *why* things appeared where they did.[25] In providing what they considered the important geographical facts about the earth and omitting others, the texts also made statements about what the best methods of acquiring knowledge: Langler saw the emerging study of causation in geography as threatening. Many textbooks demoted causal relationships and processes and prescribed taxonomic and cartographic knowledges, guiding their use of pictures around this belief. The images were useful communicators of abstract orders and concepts, but the final stage of learning was always to identify 'what and where' in the atlas. This epistemology formed the basis of the analytic model in geography.

4.3.1 The Analytic Method

Analytic *methods* can be traced through Western thought beginning in classical geography, the age of the European Enlightenment, and the quantitative spatial science revolution of the twentieth century.[26] The problem of analysis is how to reduce complexity into manageable components for the purpose of knowledge and explanation. But while schoolchildren were not privy to such deep matters of methodology, their textbooks were at least replete with information about the analytical *model* – much of it delivered in visual format. Before students reached the lists of different seas or pictures of animals inhabiting different continents, the first chapter of their textbook dealt with the universal aspects of the whole earth. Books began with the position of the earth and sun and the orbits of the larger planetary system, discussed the motion of the earth, and then explained the appearance and effect of the moon.

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[25] J. R. Langler, *Pictorial Geography for Young Beginners with One Hundred and Seventy-Eight Illustrative Engravings,* London, 1874.
[26] Livingstone, *The Geographical Tradition*, 185.

Next they moved to time and its divisions, the uses of hemispheres, the operation of compasses, and finally to the formation of continents and seas. Descending to earth they next explained the firmament before interpreting the distribution of ocean and landmass, the location of the major continents, the location of landforms and resources within them, the political boundaries, the major cities, and so on down to the discrete position of points on the surface of the earth.[27] Visual references guided them through the process of disassembling the complexity of the whole earth into analytical units of comprehension.

Canadian schoolchildren opening books by Lovell's, Grafton, or the large series by the Toronto Publishing Company were treated to a familiar routine of narrowing down from the globe to political divisions, following illustrations that mirrored and narrated this same analytic trajectory.[28] Pictures of the earth floating in the celestial sea greeted children in Lovell's *Intermediate Geography*, who as they turned the pages of their book saw the earth demystified by meridians, degrees, compass points, and manageable areas. (Fig. 20) Grafton's took a more stylized approach, beginning with a polished chrome globe that was gradually disassembled through the textbook. (Fig. 21) While the images offered a shorthand visual analogy of the material in the text, they also represented the dissection of space and arrangements called for by the analytic method. Once the general laws governing the earth were known, the abstract categories and divisions of the earth could be memorized for later placement on the map or identification in the real world. Analysis, by means of text and pictures working together, guided students from the abstract to the concrete through a process of dividing the large and complex

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[27] *Lovell's Intermediate Geography, with Maps and Illustrations; Being Introductory to Lovell's Advanced Geography,* Montreal, 1879; Ontario Department of Education, *Modern School Geography and Atlas Prepared for the Use of Schools in the British Provinces,* Toronto, 1882.
[28] Ontario Department of Education, *Modern School Geography and Atlas*.

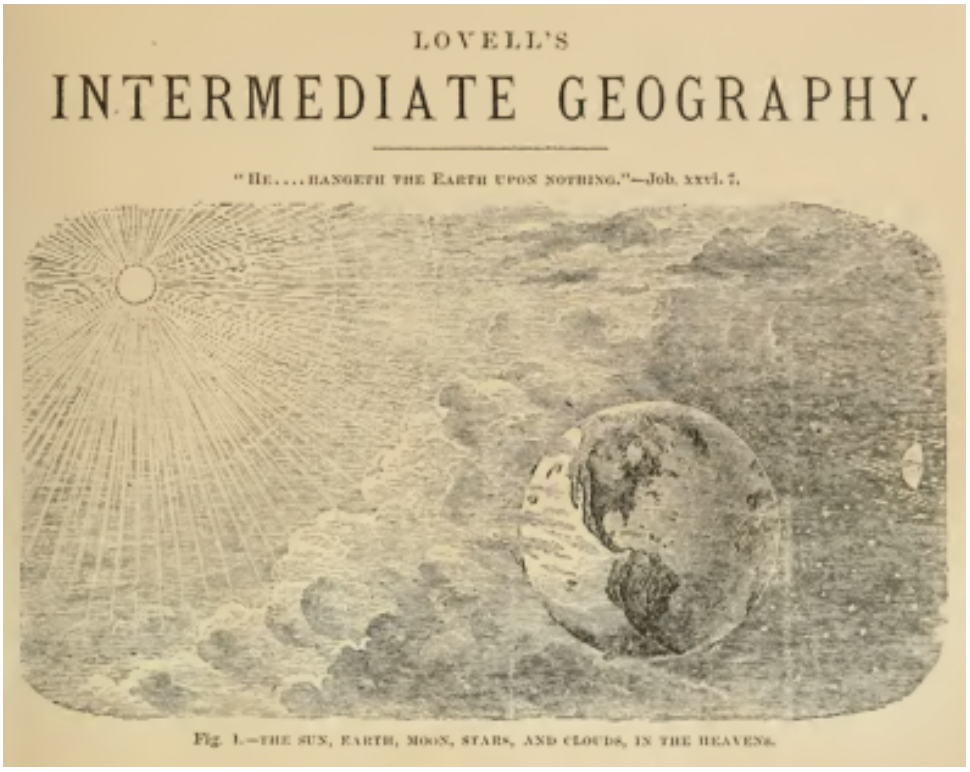


Fig. 20. 'The Sun, Earth, Moon, Stars, and Clouds, in the Heavens'

Cultural geographer Denis Cosgrove has identified a number of different 'globes' within the tradition of geographic representation. The pre-modern 'emblematic globe' portrayed power of Catholic doctrine and the domination of heaven in earthly matters. By the enlightenment, globes signified knowledge, exploration, and aristocratic secular learning. Cosgrove describes the modern globe of the eighteenth and nineteenth century using three spatial metaphors: the "interior *penetration* of continental and telluric space; axial *advance* along the meridian to the polar ends of the earth; and *encirclement* of the latitudinal arc."[29] School textbooks often narrated this story of the development of analysis visually by beginning with the emblematic globe (Fig. 20) and proceeding to carve it up into the spaces Cosgrove describes (Fig. 21).

Source: *Lovell's Intermediate Geography, with Maps and Illustrations; Being Introductory to Lovell's Advanced Geography*, Montreal: John Lovell, 1879, 5.

[29] Cosgrove, *Apollo's Eye: A Cartographic Genealogy of the Earth in the Western Imagination*, 207.

CONTINENTS OR GRAND DIVISIONS. 5

4. Continents or Grand Divisions.

Each of the great highlands in the world ridge forms the backbone of a large body of land. These lands are North America, South America, Eurasia and Africa. Southeast of Eurasia lies a great body of land called Australia.

Which of these bodies of land are north of the equator? Which are crossed by the equator?

There are two parts of Eurasia,—Asia on the east, and Europe on the west. Which part is the larger?

North America, South America, Europe, Asia, Africa and Australia are called *continents*, or *grand divisions*.

Which of these continents is wholly south of the equator?

Behring (Bering) strait cuts through the primary highland and separates the *Old World* from *America*, or the *New World*.

Which continents are in America? Which are in the Old World?

What isthmus connects the two parts of America?

Where is the isthmus of Suez? What seas does it separate?

Which is the larger,—Africa or Eurasia? Africa or North America? Australia or North America?

Which continent is farthest from your home?

Write as many facts as you can about the continents and oceans, using the map on this page.

Key to Map of World Ridge.

leys. In many places it is hundreds of miles in width.

On both sides of the primary highland, the land slopes away to the shores and there dips beneath the sea. Most of the longer slopes are on the inner side of the horseshoe-shaped highland.

These slopes make wide plains between the primary highland and the sea. There are few large rivers on the outside of the world ridge. Why?

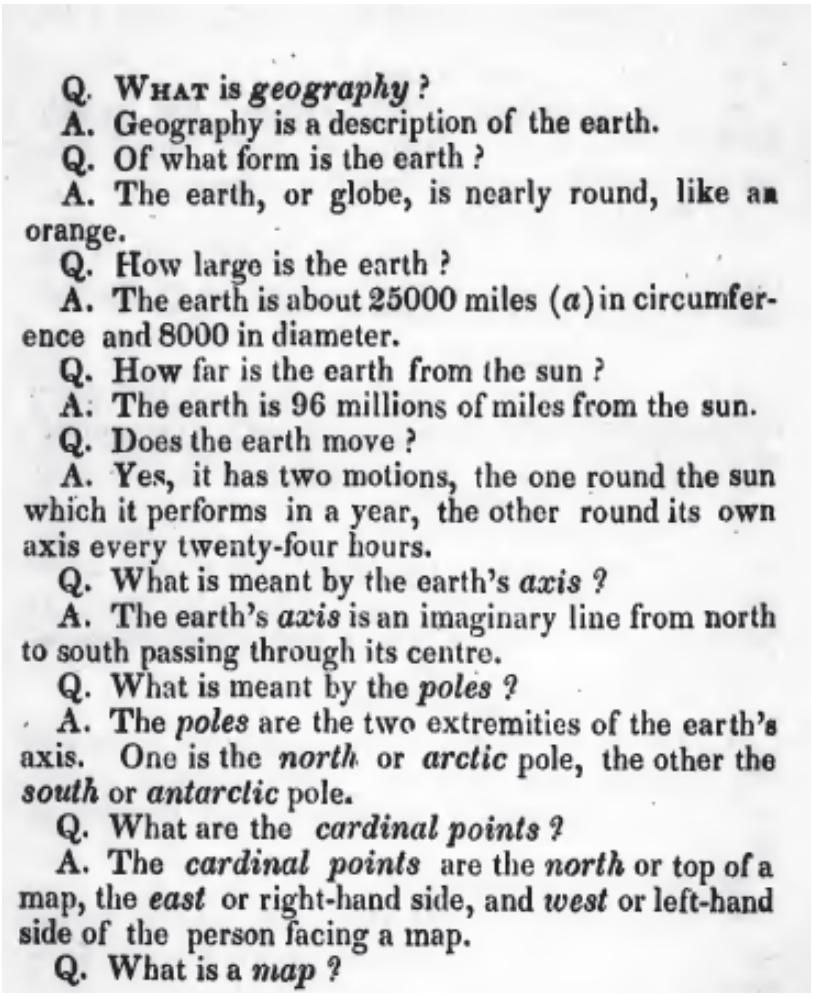
On which side of the equator are the ends of the primary highlands?

Fig. 21. 'Continents or Grand Divisions'

The reader provides a theory for the 'world ridge' – a highland region drawn by mountains running the circumference of the major continents of the world. Twentieth-century plate tectonics and continental drift would soon put an end speculation over the theory. Geographers were proud to describe their texts as nothing but "a substantial body of geographical fact" best approached by understanding the mathematical proportions of the globe itself.[30]

Source: *New Canadian Geography: Specially Adapted for use in Public and High Schools*, Montreal: F.E. Grafton, 1899, 5.

[30] G. Chisholm, *Longman's School Geography,* New York, 1903, v.



Q. WHAT is *geography* ?
A. Geography is a description of the earth.
Q. Of what form is the earth ?
A. The earth, or globe, is nearly round, like an orange.
Q. How large is the earth ?
A. The earth is about 25000 miles (*a*) in circumference and 8000 in diameter.
Q. How far is the earth from the sun ?
A. The earth is 96 millions of miles from the sun.
Q. Does the earth move ?
A. Yes, it has two motions, the one round the sun which it performs in a year, the other round its own axis every twenty-four hours.
Q. What is meant by the earth's *axis* ?
A. The earth's *axis* is an imaginary line from north to south passing through its centre.
Q. What is meant by the *poles* ?
A. The *poles* are the two extremities of the earth's axis. One is the *north* or *arctic* pole, the other the *south* or *antarctic* pole.
Q. What are the *cardinal points* ?
A. The *cardinal points* are the *north* or top of a map, the *east* or right-hand side, and *west* or left-hand side of the person facing a map.
Q. What is a *map* ?

Fig. 22. Textbook learning by method of question and answer

Often long streams of question and answer exchanged were used to deliver this information to students. A single page from Ewing's 1841 *Easy and Concise Introduction to Modern Geography* shows a model of knowledge emerging in an exchange between a curious student and a wise teacher. The complexity of 'What is geography?' is gradually disassembled as knowledge about the earth emerges. A hallmark of nineteenth-century education positioned the teacher as authoritative sage and the student a kind of sponge thirsting for knowledge.

Source: *An Easy and Concise Introduction to Modern Geography: Containing an Enlarged Acocunt of the British North American Colonies, particularly Lower and Upper Canada, for the use of Canadian Schools*, Quebec, 1841, 3.

into the small. (Fig. 22) The epistemological message reflected in the pictures was that knowledge began in the abstract and was made concrete through classification and location led by the authority of the teacher. Progressive reform and visual instruction would challenge the positions at the turn of the century.

4.3.2 Pictorial Illustration

During the nineteenth century a series of 'pictorial geographies' were also produced in Canada, America, and the United Kingdom.[31] These books followed the analytic method and used classification to teach, but also promised a departure from the old bones methods of commercial and physical geography by actually picturing places found on the earth.[32] Pictorial geography images were not teaching tools in and of themselves, however. Instead they were glimpses into what could be found on different parts of the map: Grafton's 1899 *New Canadian Geography* stated plainly that pupils were meant to "study this book" but "look at" the pictures. (Fig. 23) Like their classification counterparts, nineteenth-century pictorial images treated pictures only as 'illustrative' of the more important text or map. For these reasons, when geography textbooks did show pictures of actual places they aimed mainly to please the reader and as a consequence tended to present the children with wonders to gaze upon. Usually drawing

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[31] S. A. Goodrich, *A Pictorial Geography of the World, Comprising a System of Universal Geography, Popular and Scientific, Including a Physical, Political, and Statistical Account of the Earth and its Various Divisions, with Numerous Sketches from Recent Travels, and Illustrated by more than One Thousand Engravings, of Manners, Costumes, Curiosities, Cities, Edifices, Ruins, Beasts, Birds, Fishes, Reptiles, Trees, Plants, Fruits, &c, with a Copious Index Answering the Purpose of a Gazetteer,* Boston, 1840; B. Steill, *Steill's Pictorial Geography of England,* London, 1844; T. Milner, *The Gallery of Geography; A Pictorial and Descriptive Tour of the World,* London, 1864; Langler, *Pictorial Geography for Young Beginners*; *Longman's Pictorial Geographical Readers,* New York, 1901.

[32] Langler, *Pictorial Geography for Young Beginners*, preface.

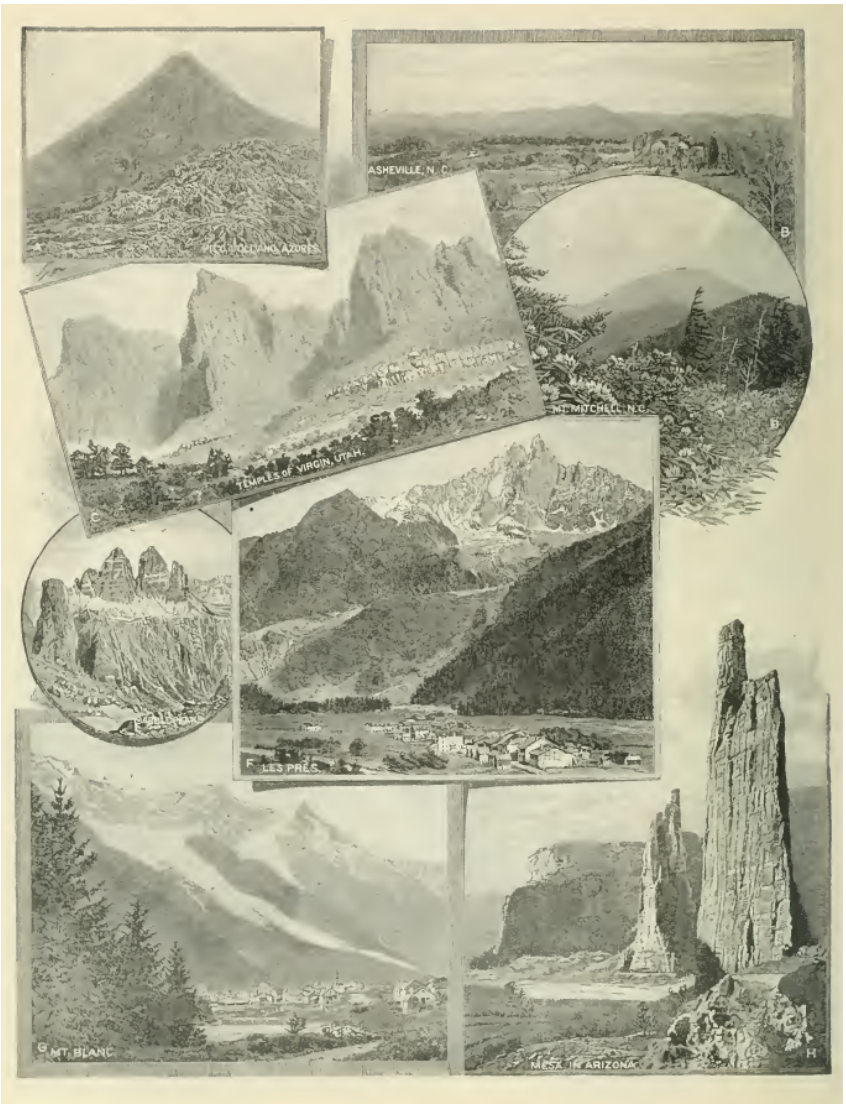

Fig. 23. Example of a textbook page devoted to pictorial geography

New Canadian Geography promised the "illustrations are the finest ever used in any Canadian school book, and they cannot fail to give clear and definite conceptions in regard to the most important elements of true geographical study." However, treatment of the images suggested that the extent of knowing about geography was to marvel and appreciate scenery. Pictorial geographies drew from Palladian and pastoral themes: looking downward at dusk, expressing light and dark, suggesting the sublime chaos of nature and the beauty of architectural order, reminiscent of classical antiquity, these were framed as landscapes and complete with signs of bourgeois leisure. (Fig. 24) Art historians and cultural geographers have developed the shared

belief that pictorialism offered a colonial 'way of seeing' that worked in unison with imperial conquest, dividing new land into the ordered spaces of European presence and the dark sublime represented Native savagery or the terrifying landscape.[33]

Source: *New Canadian Geography: Specially Adapted for use in Public and High Schools*, Montreal: F.E. Grafton, 1899, iv.

on conventional sights from the fashionable aristocratic practice of taking a 'grand tour' of the Mediterranean, pictorial geography depictions were open to any landscape or structure deemed intrinsically worth seeing in and of itself: the pyramids, Niagara or Victoria Falls, the Great Wall of China, the face of Matterhorn, or impressive government buildings dominated the pages. (Fig. 24) Grafton's 1899 Canadian text was unique for using photographic etchings to present dramatic landscape views, presenting learners with something akin to a traveller's photo album or cartes-des-visites collection from the mid-nineteenth century.[34]

While it is clear that through their textbooks students were exposed to environmental nationalism, international capitalism, and racist ideologies in ways that made them seem natural, it is more difficult to recover the experience of reading these books. Thinking about the position, use, and discourse around pictures helps broach a gap noted by David Matless in the "history of the provision of teaching equipment in geographical departments as a way into the culture and politics of geographical learning."[35] How images were deployed reveals information about the culture of knowledge that actually undergirded ideologies and knowledges: information flowed

[33] For a very good overview of these claims, see S. D. Hoelscher, Landscape iconography, in: R. Kitchen, N. Thrift (Eds), *International Encyclopedia of Human Geography, Volume L*, Oxford, 2009.
[34] Milner, *The Gallery of Geography*.
[35] Matless, Gestures around the visual, 222.

Fig. 24. Images from John Langler's *Pictorial Geography*

Scholars studying the cultural context of images in the late-nineteenth century are eager to point out that photography had a profound affect on social notions of space and time by appearing to collapse distances between places.[36] Langler promised to take advantage of this by sending children on pictorial 'voyages' or 'tours', so they would know far more "than Grandpapa did when he was a little boy." Pictorial geographies portrayed the remarkable feats of civilizations past and present as though they belonged in albums of an aristocratic tour or Thomas Cook promotional booklet.

Source: J. R. Langler, *Pictorial Geography for Young Beginners with One Hundred and Seventy-Eight Illustrative Engravings,* London: Virtue, Spalding, and Co., 1874, 12.

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[36] D. B. Clarke and M. A. Doel, Engineering space and time: moving pictures and motionless trips, *Journal of Historical Geography* 31 (2003) 41-60.

from teacher to student, analysis and classification of factual information guided thought, and reasoning proceeded from the abstract to the concrete. It is also clear that images only reflected these ideas and were not thought of as possessing knowledge or delivering information to the student in their own right – they were subservient to the text, offering only characteristic and not truth. These beliefs changed through progressive educational reform, which challenged the old methods and proposed a new and greatly expanded role for images.

4.4 Geographical Education and Progressive Reform

While the Progressive Era is most commonly associated with anti-capitalist reform movements in the United States between 1890 and 1920, progressivism as a political philosophy was broadly situated in modern western thought. Progressivists sought to address late nineteenth-century social problems associated with mass populations living in crowded cities such as inequality, health epidemics, and under-education. They were united by the general belief that science, economic prosperity, and liberalism could solve these woes and be utilized in ways to improve the general human condition. An important part of why the progress called for seemed possible was the resurrection of the humanistic belief that individuals carried within them the inherent capabilities to self-develop and better themselves, if only properly guided.[37] For these reasons, education was suddenly vaulted into a position of great importance towards the end of the nineteenth century as an important tool of social reform.[38] This important new social role for education proved to be a major testing ground for progressivist theories, inspiring new beliefs about the roles and responsibilities of teachers. The result within geography was traditional methods like classification waning in favour of first-hand observation, while learning

[37] J. Dewey, *Experience and Education,* New York, 1938, 21.
[38] J. Howlett, *Progressive Education: A Critical Introduction,* London, 2013, 211-244.

by memorization was challenged by humanistic approaches that hoped to stimulate curiosity in children. New practices came backed by the belief they better equipped children for the challenges threatening them in modern world—offering them the ability to gauge truth and falseness, tell right from wrong, and therefore be able to develop and progress. The old methods seemed increasingly out of step with these new goals, and early educational reformers began to preach that forcing students to memorize abstract concepts did them disservice because it obstructed the important skill of learning on their own. Teachers, said the American feminist Lucretia Crocker in 1884, "should *tell them nothing that they can naturally find out for themselves."*[39]

Progressive ideas did not just envision new kinds of teaching and learning; they also demanded new kinds of students and new methods. In geography, exactly what these new students should look like was constantly discussed in a slew of new scholarly periodicals including the pioneering *Journal of School Geography* (1897) established by Richard Elwood Dodge in the United States, *School Science and Mathematics* (1900), the *Bulletin of the American Bureau of Geography* (1901), *The Geographical Teacher* (1903), and the *Annals of the Association of American Geographers* (1904).[40] These journals sampled the latest sociological and psychological theories as they attempted to justify and exposit the purpose of teaching elementary geography. Many of the concepts they discussed – observation, the value of concrete experience, and the importance of locality – fell under the more general headings of 'home study' or 'nature study.' These two streams of progressive thought were developed

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[39] L. Crocker, *Methods of Teaching Geography. Notes of Lessons,* Boston, 1884, 7.
[40] R. E. Dodge, *Home Geography and World Relations,* Chicago, 1904; R. E. Dodge, *The Teaching of Geography in Elementary Schools,* Chicago, 1913.

concurrently in the UK and the US, but eventually arrived in Canada. Following their intellectual origins in progressivism is essential to understanding the eventual shape of visual instruction, and the effect it would have on Canada and conceptions of regionalism when the latter method arrived. Home study and nature study were integral to the spatial history of the geographical image because they provided the basis and necessity for a new belief that knowledge could be instilled and transmitted through images.

4.4.1 Home Study in the UK

In Great Britain two Scottish educators led the progressive charge into the new style of teaching: the geologist Sir Archibald Geikie and the geographer Arthur John Herbertson. Both took aim at classification as an outdated religious viewpoint while urging that geography was ready for a Darwinian interpretation of the earth, which they found in Charles Lyell's demonstrations that geologic strata explained topographic processes.[41] Geikie wrote geological accounts of the Scottish landscape that he called 'the history of scenery' wherein he attempted to explain the way nature's tools sculpted the earth. Ever the provocateur, he listed the biblical story of Genesis under 'popular misconceptions' in his 1887 *Scenery of Scotland.*[42] In the pages of *The Geographical Journal,* Herbertson expressed his ideas that the categorizations and subdivision of different spaces according to human-derived categories was a waste of time: "Why should Southern Canada be treated separately from the Northern United States" he asked, when geology and biology provided such clear evidence that their regional characteristics were

[41] J. S. Keltie, *History of Geography,* London, 1913, 144-145. A. Geikie, *Geology,* London, 1874; for divine classification cf. Goodrich, *A Pictorial Geography of the World*, 20-21.
[42] A. Geikie, *Scenery of Scotland Viewed in Connection with its Physical Geography,* London, 1887, 3.

derived from physical geography rather than political boundaries.[43] Not content with 'what and where,' Geikie and Herbertson were using geologic history to focus geographical teaching on the question of 'why,' bringing them directly into conflict with the classification system. Their hope was geography would turn from this role as the 'summary of nature' into the scientific basis for evolutionary thinking.

Geikie and Herbertson were high-minded academics, but along with others they pressed for a school method that would prepare schoolchildren with the fundamentals of geographical study by having them address these 'why' questions. The solution, known as the causal method, came from a man not typically associated with progressivism, but whose ideas nonetheless reinforced many of their claims—the zoologist, geographer, politician, and educational theorist Halford Mackinder. His aim was to transform geography from a set of *knowledge about* the world into a way of *thinking about* it. In Mackinder's view, all the major geographical fields – physical landforms, cartography, commercial geography, and regional description – shared in their commitment to classifying and ordering an unfortunate indifference to history. He was not a 'historian' concerned with narratives and past societies, but 'history' for him meant causal knowledge of the ongoing processes that were shaping the earth and the way people occupied it. His idea was that providing a geopolitical account of spatial distributions would rest on these understandings.[44]

Mackinder believed that the best way of 'thinking geographically' came from direct observation of the world, which meant beginning with 'home' or 'local' study in schools. In

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[43] A. J. Herbertson, The major natural regions: an essay in systematic geography, *The Geographical Journal* 25 (1904) 300-310, 301.
[44] H. J. Mackinder, Geography in education, *The Geographical Teacher* 2 (1903) 95-101, 98.

home study, rather than recite tables from the textbooks, teachers were expected to take students out into the landscape to understand geological forms. A visit to the yard to look at grass and shrubbery was to be followed the next week by a longer walk to a creek next to school, and fields on the outskirts of town the one after, progressing from the local to the universal by means of direct observation. Mackinder suggested this allowed students to learn from a natural state as 'young savages' immersed in their environment.[45] According to his contemporary geographer and biologist Patrick Geddes, a great public champion of 'the observational technique,' local study treated the environment as 'an abstract syllabus' of object lessons that could not be broken into types or categories.[46] Even if the method was different, ideology still informed practice. The cultural geographer David Matless has identified how schools played a major role in connecting 'landscape and Englishness' through these sorts of tours by asking students to read the landscape in ways that appealed to sense of pride in place.[47] Likewise, historians of geography Teresa Ploszajska and Hayden Lorimer have even shown how the geographical benefits of field-work introduced as a teaching method in late-nineteenth-century Britain were rapidly overshadowed by its connection to moral and civic benefits.[48]

While home study may have delivered the same patriotic values, the method of teaching was marked by a series of major departures, especially from the basis of analytic geography. Rather than take the earth as a whole to be subdivided, students were supposed to look at the parts of the environment around them and make inferences from there. The process of analysis

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[45] H. J. Mackinder, The development of geographical teaching out of nature study, *The Geographical Teacher* 2 (1904) 191-197, 194.
[46] P. Geddes quoted in W. M. Webb, The 'Nature-Study' exhibition, *Nature* 66 (1902) 324, 324.
[47] Matless, *Landscape and Englishness*.
[48] T. Ploszajska, Down to earth? geography fieldwork in English schools, 1870-1944, *Environment and Planning D: Society and Space* 16 (1998) 757-774; Lorimer, Telling small stories.

was thus reversed into synthesis. In other words, the ideal thought process of disassembling complexity for analysis using abstract concepts became a problem of how to assemble unique parts in order to synthesize a systemic whole. Very few geographers expressed their philosophies in terms of the analytic vs. synthetic debate *per se*, but the names they gave their new methods spoke to the idea all the same: these included the 'associative' (pairing geography with the lessons of other disciplines such as history, biology, or geology); 'grouping,' (which aimed to classify facts of the same kind); and the 'constructive' method, which originated from the German school of scientific geography pioneered by Karl Ritter based around the encyclopedic assembly of all available facts.[49] The overriding theme of each was that teachers were to aid children in synthesizing their own understandings by showing them methods for investigate the geography of the earth and distribution of people across it. This reimagined role for the educator revealed another shift in the historical geography of knowledge: it was no longer in textbook and the teacher, but in the land itself that modern knowledge resided. The educator's task became how to teach them to recognize it.

4.4.2 Nature Study in America

'Home study' in the United Kingdom matched a new movement called 'nature study' in the United States, which together shared ideas about observation, causality, and synthesis. Neither was isolated to its country of origin and both were liberally employed across the English-speaking world, eventually informing the development of visual instruction and the re-imagined use of pictures in Canada. Nature study was aided by synthesis becoming the norm in the United States geographical thought. Susan Schulten has argued in *The Geographical Imagination in*

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[49] T. G. Rooper, On methods of teaching geography, *The Geographical Teacher* 1 (1901) 4-10.

America, that university geographers seized upon the idea of synthesis in order to retain academic strength as their institutions pressed them to become useful and scientific.[50] In the US academic culture where disciplines were circumscribed by fields of investigation, the study of 'the earth' was not specific enough. Rather than choose something specific, geographers plied theirs as a 'synthesizing' discipline that brought all others together. The major thinkers of the day were able to demonstrate this, like Ellen Churchill Semple and Ellsworth Huntington, whose concepts attached physical geography to geopolitics, sociology, and behaviouralism, and who rose to fame in a discipline seeking to prove its synthesizing abilities.[51]

This turn to what would become known as environmental determinism in America presented a mandate for more first hand study and observation of the world, to see how the surface of the earth affected human spatial patterns. This was introduced to elementary students using 'nature study,' a method that became fashionable in teaching at the turn of the century, attracting a wide array of well-known prophets like E.T. Seton and John Muir. If teachers followed the times, they took their classes to the field with notebooks and magnifying glasses to observe the behavior of chipmunks and wrens, or to study the pattern in alder leaves, and let them push their hands into the cool soil. Guided by the belief nature was truly the best teacher, the educators role was to inspire a love of learning and promote the "habit of observing and thinking for oneself and at ones best, without books or help, in the presence of the facts and in the open air."[52] Listening to, smelling, touching, and most importantly seeing nature reflected a core progressive idea that 'doing' was an important part of learning because it exposed students

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[50] Schulten, *The Geographical Imagination in America*, 72-83.
[51] E. C. Semple, *Influences of Geographic Environment on the Basis of Ratzel's System of Anthropo-Geography,* New York, 1911; E. Huntington, *Civilization and Climate,* New Haven, 1915.
[52] Webb, The 'Nature-Study' exhibition .

to concrete objects, rather than ideas alone. It also made sense that they began to synthesize their experiences in nature using portions of the earth "which the children can see with their bodily eyes."[53] In targeting the physical and sensing body of the child by ensconcing them in the local environment, encouraging feeling and curiosity, nature study hoped to expose students to deep truths. For Anna Comstock, the leading American advocate of the method, these practices were an opportunity to restore value to civic society: "All things seem possible in nature" she explained in her 1911 *Handbook of Nature-Study*, "yet this seeming is always guarded by the eager quest of what is true. Perhaps, half the falsehood in the world is due to lack of power to detect the truth and to express it. Nature-study aids both in discernment and expression of things as they are."[54] The teacher, she insisted, must learn how to say "I do not know" to the questions of students, re-directing their view of knowledge from authority of man to the authority of nature.

Truth mattered in progressive America because it was believed to encourage better kinds of citizenship. A good example of this logic is educator Charles McMurray's 'type study' idea of 1903, an adaptation of nature study that probably went the farthest to demonstrating exactly how truth could be apprehended through direct observation. According to McMurray, nature study used in geography delivered "the interested and concrete intensity of a particular or personal or conspicuous object" which revealed "to the thoughtful person the clear outline of a general truth."[55] Type study followed, but took a programmatic approach to the learning: the

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[53] H. McCormick, *Suggestions on Teaching Geography,* Bloomington, IL, 1899, 37., 37.
[54] A. B. Comstock, *Handbook of Nature-Study for Teachers and Parents, based on the Cornell Nature-Study Leaflets,* Ithaca, NY, 1911, 1.
[55] C. McMurray quoted in W. E. Marsden, *The School Textbook: Geography, History, and Social Studies,* London & Portland, OR, 2001, 18., 18. cf. C. A. Phillips, The development of methods in teaching modern elementary geography, *The Elementary School Teacher* 10 (1910) 501-515.

teacher directed the attention of pupil to a concrete object, and encouraged them to drawn generalities about all objects of that type. In his pioneering textbook, McMurray showed how a close study of the Hudson River could be treated as a type – "a representative object, not in a narrow technical sense" – that demonstrated truths about all other rivers such as their important to trade, transportation, and defense.[56] Beginning with the specifics of the Hudson, like its physical contours, its proximity to resources, and its connection to in transportation networks, the students synthesized a larger picture of what rivers in general did. Rather than begin with abstract ideas of *what* rivers were followed by *where* they could be found, students began with a concrete example and broadened this into general understandings of the value of riverine landforms to the nation.

In the UK and the US between the 1890s and the 1920s, progressive ideas and new concepts in schooling led educators to nature for access to 'truth.' In geography, a subject already linked with the environment, classification and analytic geography were denigrated as overly abstract. Useful knowledge instead came from direct observation of what were called 'concrete' facts. Here, however, University of Illinois professor Henry McCormick summarized a widespread problem when he suggested that most teachers were limited to showing their local environments. To learn facts about places farther abroad, he claimed the educator relied on second-hand observations of another, such as that in a textbook. As such, the information acquired by the students not only carried the potential of falsehood (since it was a step removed from direct observation), the students missed the crucial task of connecting their primary

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[56] C. A. McMurry, *Type Studies from United States Geography,* New York, 1904; C. A. McMurry, *Larger Types of American Geography, Second Series of Type Studies,* New York, 1907.

observations to questioning and inquiry that would place them on the road to truth.[57] Here, pictures would act a fundamental part in assuring that concrete truths found in natural environments could be captured in an image and delivered to children in an unmediated way. Images were central to making new geographies of knowledge and inventing new kinds of knowing that began to shape Canadian approaches to regional study.

4.5 The Birth of Visual Instruction

In the late nineteenth and early-twentieth century, geographers raised questions about how best to teach children about the causal forces changing the earth and how to observe nature and synthesize explanations about its spatial distributions. They worried about these things since their aim was to help children become good geographers, and also because teaching them to think correctly could prepare them to face the tumult of the modern world where they were 'confronted by vision' in numerous ways. In geography, to face this confrontation meant learning how to see landscapes in ways that matched progressive goals: to properly gauge truth from falsehood and to tell reality from illusion. Unsurprisingly many geographers chose a visual metaphor to describe the task: it was the "picture in the child's head" they were responsible for. Henry McCormick summed up this view for many when he said "the making of correct mental pictures lies at the base of all true study of geography." The American McCormick was not alone in choosing this kind of language. In the UK during the 1910s, Halford Mackinder promoted an understanding of geographical thinking as a 'special habit of thought' by using the language of visualization. For him, correct mental pictures meant "the mind has an eye as well as an ear, and it is possible to train this eye by appropriate methods to as

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[57] McCormick, *Suggestions on Teaching Geography*, 93.

much accuracy and readiness of thought as may be imparted."[58] In the first decades of the twentieth century, the connection between modernity and vision was deepening and expanding – the mind and the eye appeared to meld into one.

An important part of establishing the correct 'mental image' in the child's mind was thought to be exposure to things "real and concrete."[59] While nature study and home study argued this was best accomplished by immersion in the environment rather than textbook learning, others took an opposite view. Many believed that the benefits of first-hand observation of nature were not 'mediated' by images, but could be shared in schoolrooms and textbooks through the use of images and pictures. They hoped visualization could instruct children in 'geographical thinking' by showing them the *whys* and *hows* of earth processes in accordance with the new concepts in geography. The best would show the deterministic qualities of earth processes, showing animals and men in some kind of action demonstrating the influence of their surroundings.[60] While the use of pictures proliferated after the turn of the century, by the 1920s the practice would achieve widespread notoriety under the heading of 'visual instruction.' The belief that *all* aspects of teaching and learning geography could be accomplished through pictures was what made this new pedagogy unique.

Visual instruction was essentially the sum of two parts. The first was how to make proper observers. Educators debated the proper means of teaching children how to view and interpret images, and create the right 'mental pictures' from these practices. According to Dean

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[58] H. J. Mackinder, The teaching of geography from an imperial point of view, and the use which could and should be made of visual instruction, *The Geographical Teacher* 6 (1911) 79-86, 80.
[59] L. H. Halverson, Pictures in the teaching of geography, *Journal of Geography* 29 (1929) 357-367, 358.
[60] E. M. Sanders, A method of teaching geography by means of pictures to little children, *Geography* 14 (1927) 136-141, 137.

McClusky, who wrote a benchmark dissertation on the practice in 1922, visual instruction was "instruction as to represented or actual physical objects through the sense of vision."[61] Lyman Leroy Standley, a nationally renowned professor who developed visual education for American elementary schools, distinguished it as a pedagogic method by its emphasis on 'seeing as learning.'[62] While the first addressed the student's means of vision, the second required placing knowledge in the image for the students to see. Visual instruction argued that images themselves could be created or used in a way that would communicate concrete facts or demonstrate what it meant to effectively 'see something.'

Promoters of visual instruction had to overcome vocal arguments that these 'Sunday school methods' that had no place in the classroom.[63] For Scottish geography teacher H.J. Findlay, it seemed evident "these mere appeals to the eye must be kept in a subordinate place, or intellectual vacuity will become even more rampant than it is."[64] To others, visual instruction raised the fear that schools were becoming factories for the industrial production of students, with the teacher "little more than a mechanic manipulating the apparatuses."[65] The onus was therefore on those who wished to use 'teaching pictures' to show how such images could actually impart knowledge, provide the role of instruction, and deliver the social benefits they

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[61] F. D. McClusky, An Experimental Comparison of Different Methods of Visual Instruction, Ph.D Dissertation, University of Chicago, 1922, 2.
[62] L. LeRoy-Standley, Visual instruction, *The Phi Delta Kappan* 11 (1928) 12-14, 19-21, 12. "Known teacher dies," *Manitowoc Herald-Times* (Manitowoc, WI), 25 June 1964.
[63] W. G. V. Balchin, *The Geographical Association: The First Hundred Years,* Sheffield, 1993, 3. The allusion to Sunday school methods is telling. Cultural historian David Morgan has traced the relationship between images and devotional American Protestantism, noting how the history of mass-mediated production of images took a central place in the ritualization of prayer and devotion because "the visual reproduction was considered by many believers to be transparent, capable of offering the viewer the aesthetic qualities and moral effects available in viewing the original." D. Morgan, *Protestants and Pictures: Religion, Visual Culture, and the Age of American Mass Production,* New York, 1999, 7.
[64] H. J. Findlay, The scope of school geography, *Scottish Geographical Magazine* 30 (1914) 133-137, 134.
[65] J. J. Cortez, Visual instruction movement, *Encyclopedia of the Social and Cultural Foundations of Education*, Thousand Oaks, CA, 2001, http://sage-ereference.com/view/foundations/n395.xml.

claimed. Looking at the ways that geographical teaching argued for and tested these two new functions of pictures through visual instruction explains a great deal about the spatial history of knowledge in Canada. Although most of the theory and method came from America, Canadian schools and textbook authors use their methods to explore ways of observing landscape and spatial patterns not possible in the traditional methods of teaching. The visual instruction movement expresses how images and viewers were re-aligned in the early-twentieth century in ways that informed understandings and uses of pictures in Canadian teaching.

4.5.1 Making Proper Observers

Examining the belief that concrete examples of geography could be placed in pictures sheds light on the historical geography of knowledge: at the turn of the century, pictures became Latourian 'immutable mobiles' assigned new powers to bring remote landscapes into the classroom or textbook.[66] Students learned about geography by *looking* at these landscapes in order to observe and experience the geography that characterized them and the spatial patterns they revealed. However, a large part of visual education was *how to look*. This included not just the foundational geographical purpose of studying the earth as the home of man, but how to imagine oneself as a viewer and understand the importance of establishing the right 'mental picture.' As visual instruction pioneer Alfred Abrams explained to the National Council of Geography Teachers, the picture carried the knowledge, but "what the teacher and pupil get from a picture depends upon the previous experience and the thoughtful effort that are brought to bear upon its analysis and interpretation."[67] Visual instruction promoters gave clues about how students should behave around the new images, by means of how to become proper observers.

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[66] Latour, *Science in Action*.
[67] A. W. Abrams, Visual instruction in teaching geography, *Journal of Geography* 30 (1931) 145-150.

This reflects a central claim I make in studying the spatial history: that new objects designed to carry and move knowledge are co-produced with the subjects able to access that knowledge. As American geographer and naturalist Anne Goebel claimed in a 1933 essay, for the new kinds of images to work, students needed to be able to read "pictures as they read the printed page."[68]

A rather remarkable allegory for the type of seeing required to 'read pictures' was provided in a 1917 manual titled *Visual Instruction Through Lantern Slides and Motion Pictures,* prepared for the University of Texas by the American land economist George S. Wehrwein. A close friend of progressive reformer Richard T. Ely and the eminent conservationist Aldo Leopold, Wehrwein's brief bulletin was supposed to be a pedagogic aid for circulation to schools around North America. It part promotional material, part instruction manual, it described the technical specifications for installing projection tools in classrooms.[69] When it came to the value of visual instruction, the authors made the then familiar argument that, "where opportunity for actual observation is lacking, pictures must be used… Without pictures, rivers are mere black lines across a map instead of surging streams, and, to a child of the prairie, mountains are mere crooked marks."[70] But what made the claim especially compelling was the image they used to display this to prospective client schools. (Fig. 25) It displays a teacher employing visual instruction in the schoolroom by operating a magic lantern projector from the back of the class. The children are focused on the image she portrays upon the wall; presumably busy identifying elements of the picture in order to put it together or answering questions posed by the teacher.

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[68] A. M. Goebel, The use of pictures in the teaching of geography, *School Science and Mathematics* 33 (1933) 473-478, 473.
[69] "George Wehrwein Inducted, 2002," *Wisconsin Conservation Hall of Fame*, last modified accessed 4 March 2013, http://www.wchf.org/inductees/wehrwein.pdf.
[70] N. L. Hoopingarner and G. S. Wehrwein, Visual instruction through lantern slides and motion pictures, *The University of Texas Bulletin* 1730 (1917), 6.

The massive screen at the front of the class signified the power of the new method, offset by the old globe resting small and silent in the shadows on the bottom right. What is remarkable about the picture is what the students are observing at the front of the class: the projected image is a student engaged in study of his surrounding environment with the help of the teacher, likely some form of nature or home study. The children in the picture are looking at a picture of a child learning. Another way to express this paradoxical situation may be that the children are learning through visual instruction how to learn through visual instruction.

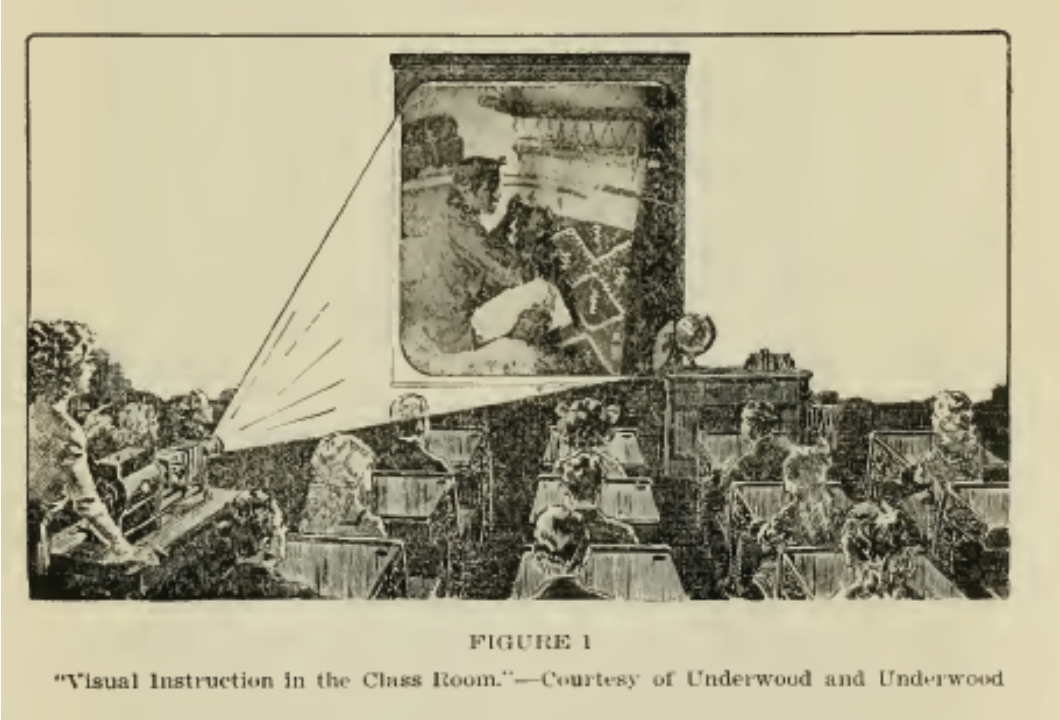


FIGURE 1

"Visual Instruction in the Class Room."—Courtesy of Underwood and Underwood

Fig. 25. 'Visual Instruction in the Class Room'

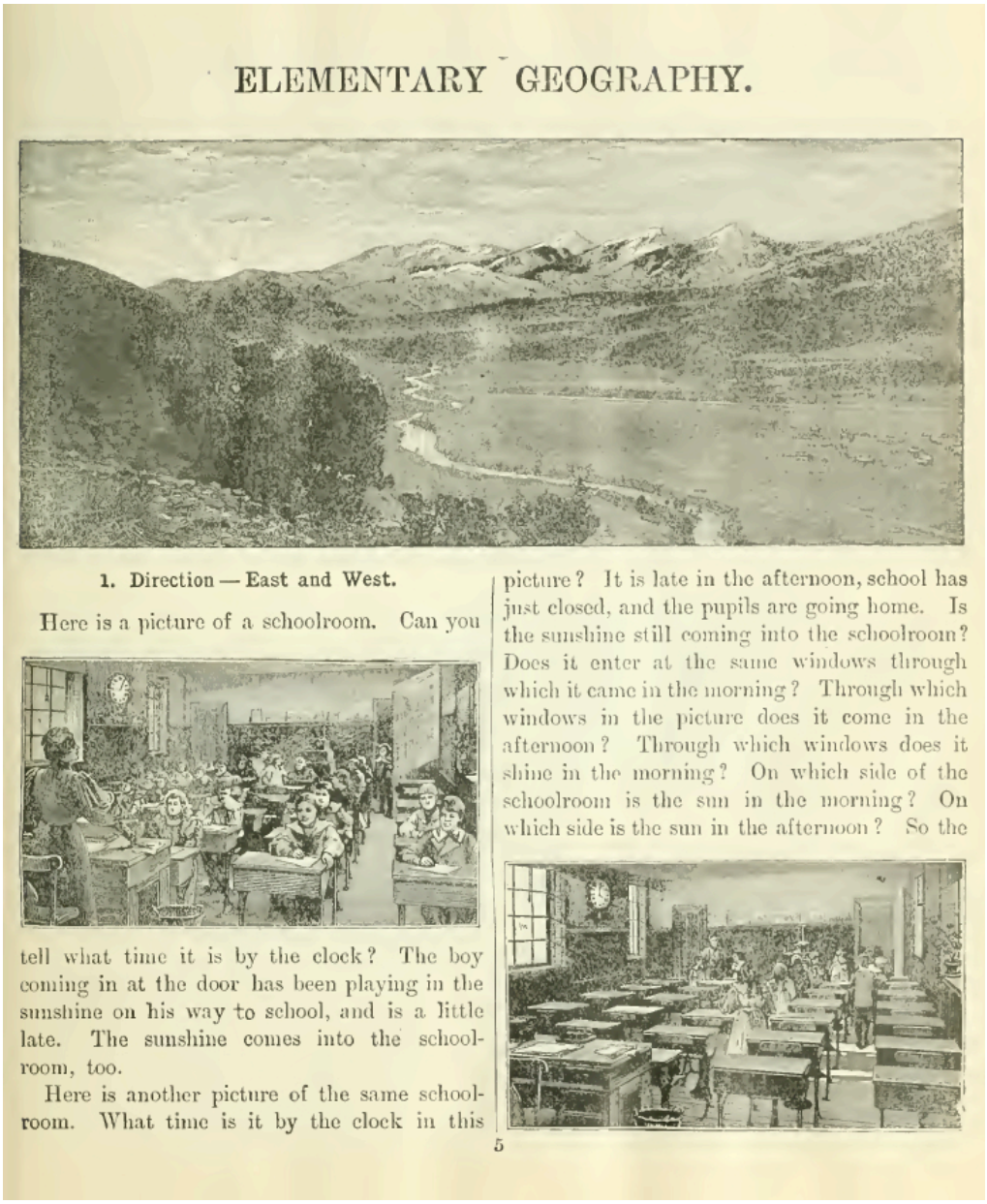
Part of the craze for visual instruction may be seen as technologically determined. Twentieth-century advances in magic lanterns, film projectors, and photo-reproduction made it easier to use pictures in textbooks or show them in classrooms. Hoping to capitalize on the new demand for projection slides, educational publishers began making slide-sets like the Keystone '600' set of 1906, distributed widely throughout North America. One of the major shareholders in the

company was Underwood & Underwood, makers of stereoscopic slides and providers of the image above. The Pennsylvania-based Keystone company hired leading educators to prepare image sets on subjects boasted like history, English, agricultural, vocational guidance, industrial art, heath, and the fine arts. Underwood & Underwood produced the actual sets, which were then sold or rented to schools. An opposing view taken by the cultural critic Raymond Williams suggests that rather than technological change producing social affects, social demands create the need for new technologies.[71]

Source: N. L. Hoopingarner and G. S. Wehrwein, *Visual Instruction Through Lantern Slides and Motion Pictures*, Austin: The University of Texas, 1917, 6.

Although Canadian geography textbooks did not aspire to the same kinds of representations as American visual instruction manuals, some clearly asked students to think of themselves and their classroom differently. One of the important ways they did this was the repositioning of the space of the classroom itself in the making of knowledge. The Toronto Educational Book Company's *New Elementary Geography* from 1915 attempted to show this to students by establishing relationships between their classroom and the world outside. (Fig. 26) The opening page of the text is dominated by a landscape scene comprised of low mountain foothills covered in boreal forest, a river valley and floodplain with a small settlement in it. Framed as a landscape view, the purpose of the image was to express a wide variety of physical features for the students to identify. The instruction in the text ignores the picture, however, and begins by asking students about the pictures of the classroom, juxtaposed with the mountain scene. The activity suggested by the book is to use the light entering the room to understand how the revolution the earth around the sun and different times of day. The difference between

[71] R. Williams (Ed), *Television: Technology and Cultural Form. 2nd Edition*, London, 1990.



ELEMENTARY GEOGRAPHY.

1. Direction — East and West.

Here is a picture of a schoolroom. Can you tell what time it is by the clock? The boy coming in at the door has been playing in the sunshine on his way to school, and is a little late. The sunshine comes into the schoolroom, too.

Here is another picture of the same schoolroom. What time is it by the clock in this picture? It is late in the afternoon, school has just closed, and the pupils are going home. Is the sunshine still coming into the schoolroom? Does it enter at the same windows through which it came in the morning? Through which windows in the picture does it come in the afternoon? Through which windows does it shine in the morning? On which side of the schoolroom is the sun in the morning? On which side is the sun in the afternoon? So the

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Fig. 26. The classroom and the local environment as tools of visual instruction

Rose's Canadian geography textbook used the same approach. Rather than furnish them with globe or map of the whole earth, teachers presented students with a yardstick and had them measure first the length of their pencil, then the width of their desk, then the area of the room itself. Next they would measure the distance between the school and the courthouse, the church, their home, and then add the physical features of the landscape they discovered. Once they

children reached the limits of local exploration, they returned to the textbook to learn the dimensions of different counties, regions, provinces, and eventually the nation and continents. The intention was to draw connections between the measurability of the world they lived in and the observable nature of geographical facts like spatial patterns and earth processes.

Source: *New Elementary Geography,* Toronto: Educational Book Co., 1915, 5.

New Elementary Geography and mid-nineteenth century textbooks is marked by the absence of the abstract globe and its hemispheric divisions ready for analytic geography. Instead, the observations of the students using the very space around them guide observation and synthesizing study.

The idea that children needed to be taught visual literacy was not lost on geographers, and many books and articles were produced on exactly how to employ the new visual aids becoming available.[72] Perhaps the most well known and widely circulated was the 1916 four-volume set, *Pictured Knowledge: Visual Instruction Practically Applied for the Home and School*. Edited by New York school superintendent Calvin Kendall, the volume boasted means of learning that went beyond words, which were "only symbols of ideas" and had "no meaning until real mental pictures are associated with them."[73] The guide to this kind of visual learning was geography, and Frank McMurray introduced the encyclopedic set with essays on the meaning of the discipline and 'The Earth as a Picture Book.' McMurray, a geographer and professor of pedagogics at Columbia University, developed the connections between

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[72] C. C. Carter, Amateur photography as an aid in teaching geography, *The Geographical Teacher* 1 (1901) 27-31; R. H. Whitbeck, Visual geography. a practical pictorial method of teaching introductory geography, *Bulletin of the American Geographical Society* 46 (1914) 699; H. Wilburg and W. E. Russell, An experiment in the use of visual methods of instruction, *General Science Quarterly* 12 (1928) 480-484; C. C. Crawford and L. P. McDonald, *Modern methods in teaching geography,* Boston & New York, 1929; E. S. Price, The lantern and the geography room, *Geography* 15 (1929) 294-298; S. G. Davis, Visual aids to the teaching of geography, *Geography* 22 (1937) 213-215.

[73] Kendall (Ed), *Pictured Knowledge*, xii, 490.

observation, synthesis, experience, and the value of seeing 'concrete' truths about the world through images. In *Pictured Knowledge*, seeing was framed as a geographical endeavor, but the volume contained information about math and science, history, psychology, anatomy, and many different types of trades and industry, all taught through images. Students approached these other disciplines using geographer's methods: never to look at a whole picture, but to begin with some part of it, reasoning from the specific to the general, bringing observations together into groups, and "in this way you can acquire the ability to think."[74]

The ability to think in *Pictured Knowledge* consisted of using sight to interpret the world, but the volume also told students "it is the mind and not the eye that really sees."[75] To demonstrate this, it presented the world as if seeing and geographical inquiry were synonymous – as though the discipline had a special claim to truthful observation – and even used analogies from geography to frame the kind of observers students should become. They illustrated this claim in 'What Strange Land is This?,' a section displaying the human body as a "remarkable community of millions that is not even mentioned in your Geography or history."[76] Using images it surveyed the 'geography' of anatomy like the respiratory system, the passage of food through the digestive system, and the pumping of the heart as different regions of a land. Each image showed the 'native inhabitants' at work: children manipulating and inspecting food as it entered the mouth, or scrubbing air in the throat. In an image titled 'A Look Into Headquarters' it was clear that the eye was ranked first in this imaginary hierarchy of sensory knowledge. (Fig. 27) The illustration shows desk workers and archivists 'thinking' by dealing with the multitude

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[74] Kendall (Ed), *Pictured Knowledge*, 492, 496.
[75] Kendall (Ed), *Pictured Knowledge*, 492.
[76] Kendall (Ed), *Pictured Knowledge*, 246.

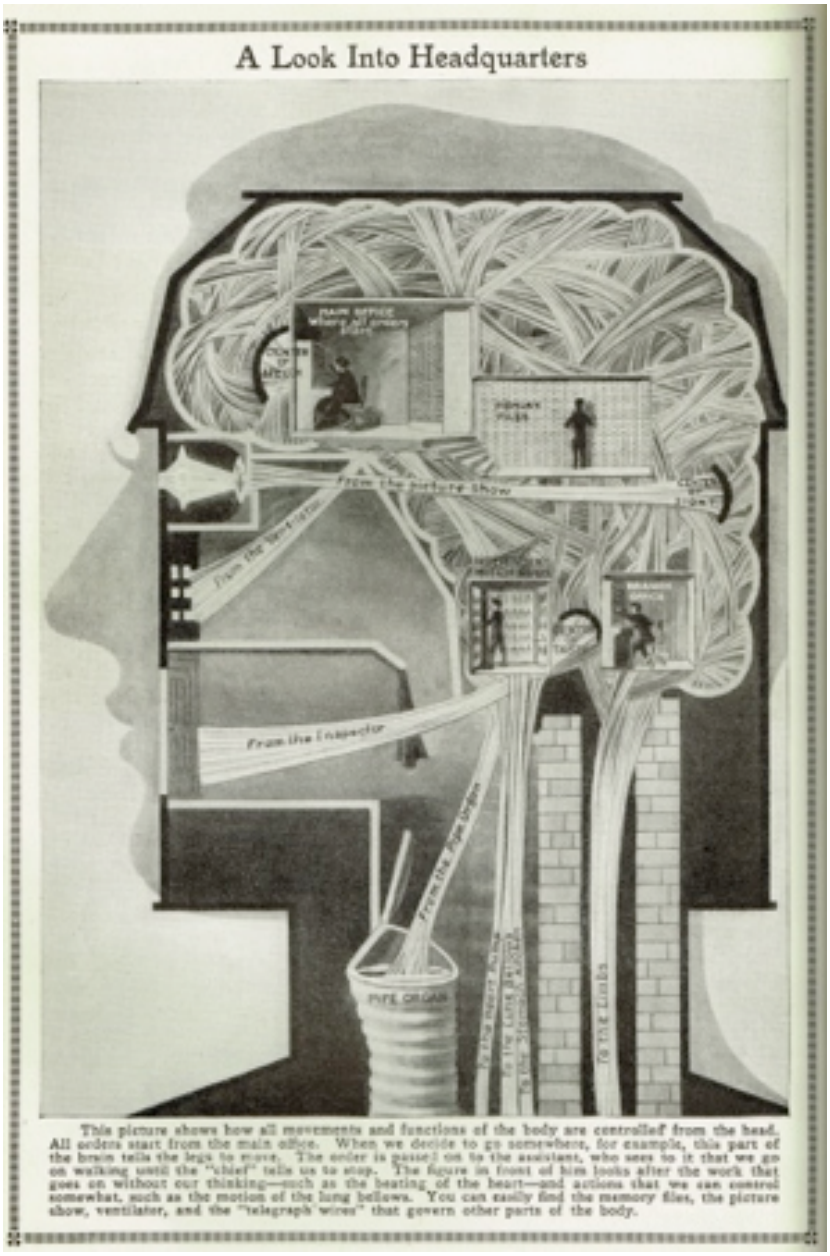

Fig. 27. 'A Look Into Headquarters'

This visual-anatomical microcosm of society reveals a strong vocational hierarchy between those assigned to do tasks and those who performed the role of overseers. The functions of the body were regularized into ideas about society, where or eyes and white blood cells are "machines run and repair themselves, cameras that pictures in colours, [and] policemen that never fail to do

their duty."[77] Through these visual lessons, children were taught to imagine the same hierarchies among their mental faculties. The archivists working to store visual data as mental images for the mind were clearly bourgeois, while the 'Community Mill' of the mouth was clearly staffed by blue-collar workers. Picturing knowledge meant turning the body into a geographical site – a place where the observational properties of the child were meant to transform visual information into knowledge, but the scenes depicted were also a representation of that action.

Source: C. N. Kendall (Ed.) *Pictured Knowledge: Visual Instruction Practically Applied for the Home and School. Volume 1.* Chicago: Compton-Johnson Co., 1917, 266.

of information the eye received: "As soon as the picture is taken it is sent to the Information Bureau which puts it in the hands of the Interpretation Bureau whose helpers store it in the library to be used by the Intelligence Bureau." Using these images, *Pictured Knowledge* presented children with a view of themselves as visual thinkers.

4.5.2 Placing Knowledge in the Image

New ways of representing knowledge–making also suggests that new kinds of subjectivities were imagined out of modernity – people well equipped for the confrontation with vision in contemporary society. New ways of seeing enabled ways of ways of being in and knowing the world, suggesting that when we change our pictures, our pictures of ourselves also change.[78] But pictures did much more than reflect learning to students. In geography they were relied upon to carry truthful knowledge from the natural environment to the eyes of the beholder in the classroom. Visual instructors argued this was possible by theorizing *how* images spoke to

[77] Kendall (Ed), *Pictured Knowledge*, 247.
[78] D. M. Levin (Ed), *Modernity and the Hegemony of Vision*, Berkeley and Los Angeles, 1993; G. Doy, *Picturing the Self: Changing Views of the Subject in Visual Culture,* London, 2004.

students, by changing the way they were deployed as learning devices, and by making claims about the way they transported knowledge.

Initially, the nature study movement had rejected both textbooks and images as 'mediated' information because they reflected the observations of another and could not provide the benefits of primary observation and experience to students.[79] This sheds light on why some geographers felt it so necessary to discuss the effects images had on students. In *The Teaching of Geography*, designed for US and Canadian teachers, methodology specialists Mendel and Frederick Branom argued that the usefulness of the picture would depend on the geographic quality of the image, the natural curiosity of the child and the aptitude of the instructor:

> When a picture of the Niagara Falls is presented, this great scenic feature immediately assumes an element of reality. Now, by virtue of the interest aroused through what the vision reports, the great sheet of water is seen to fall. Its thunder as it strikes the rocks one hundred and sixty feet below is heard. The descent to the Cave of the Winds can actually be made, and, through skillful teaching, the children will almost gasp for breath as they are drenched by the falling spray.[80]

Though surely an exaggeration, claims that pictures viscerally affected students were not uncommon. In a promotional volume by the Keystone '600' teaching picture company, Frank McMurray warned teachers that children looking at the projected image of a gorge may recoil in fear that they were about to fall in. McMurray was interested in the psychology of students viewing pictures, basing his interpretations around Progressive Era icon Oliver Wendell Holmes' view that reproductions gave "a semblance of reality as to produce in the child's mind the same

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[79] McCormick, *Suggestions on Teaching Geography*, 93.
[80] M. E. Branom and F. K. Branom, *The Teaching of Geography, Emphasizing the Project, or Active, Method,* Boston & New York, 1921, 111.

reaction that would follow the actual sight of the thing photographed."[81] To McMurray the pedagogics professor, these matched assertions in the 'systematic education' theory of William Bagley, who argued the best teaching happened when the child "put himself into the pictured situation – actually to *feel* that he is there in close contact with the objects or taking an active part in the processes that are portrayed."[82]

The idea of students being roused and motivated by the material was an important means of countering claims that pictures mediated true knowledge. However, the real purpose of these images was not to delight, but to teach cornerstones of modern geographical thought like how to observe and synthesize. The most common kinds of teaching pictures found in geography presented students with interesting scenes and human or physical features of the earth. William Sutherland demonstrated how the method worked in his *The Teaching of Geography,* a teaching manual praised by Richard Ellwood Dodge.[83] Shown an image of a Whaleback freighter passing through the lock at Sioux St. Marie, students were first asked to identify features of the image or things that stood out to them.[84] Next, they tried to explain what those things existed in the scene and what relations there may be between them. Sutherland claimed pictures were able to bring "into focal consciousness the required idea as quickly and easily as the original would if exposed to view," but the scene still needed synthesis. The final step was to draw the parts of the image up into an interpretation of the whole. Because Sutherland was interested in economics, he

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[81] F. M. McMurray, How to study stereographs, in: Keystone View Company (Ed), *Visual Education Teacher's Guide to the Keystone '600 Set'*, Meadville, PA, 1906 [1922], x; O. W. Holmes, The stereoscope and stereograph, in: Keystone View Company (Ed), *Visual Education Teacher's Guide to the Keystone '600 Set'*, Meadville, PA, 1906 [1922], xv.
[82] W. C. Bagley, Correctness in education, in: Keystone View Company (Ed), *Visual Education Teacher's Guide to the Keystone '600 Set'*, Meadville, PA, 1906 [1922], vii.
[83] R. E. Dodge, *The Teaching of Geography* by William J Sutherland, *Bulletin of the American Geographical Society* 42 (1910) 376; Obituary: Mr. William J Sutherland, *Geographical Review* 1 (1916) 148.
[84] W. J. Sutherland, *The Teaching of Geography,* Chicago, 1909, 193.

directed their 'observations' to trade and transportation factors, though he clearly also required the students to speculate: "Where is the freighter going? What cargo does it have? What are the soil types in neighbouring Duluth? What is the regional rainfall? Why is the lock necessary?"

As the use of pictures in geography classrooms grew more popular, the images were called upon to do more and more – some being assigned teaching duties previously the responsibility of the teacher or the textbook. Clearly studying the commercial productivity of states was still important, but lessons no longer included memorizing the export tables of various regions. For example, children given instruction on agronomics were shown images of crop fields and asked to guess soil types, to infer climate from weather patterns, see drainage from the contours of the land, and know that a train passing in the background suggested connection to international markets. Once these facts were established, they were meant to synthesize higher-level understandings in geography. This meant the best pictures would always show humankind adapting to the environment, "so that students may work out hypotheses at least as to relationships involved."[85] Canadian students using George Chase's *High School Geography* from 1904 were assigned a similar task using the image of Long Lake in the interior of British Columbia. (Fig. 28) They were meant to ponder the similarity between the spit of land separating what is present-day Wood Lake from Lake Kalamalka to the north as they considered causeways and dams of human design. It was believed that carefully chosen pictures could exemplify the relationships between humans and the environment, expressed by Chase's caption: "What man thus does nature has ever been doing." Being able to observe these nature-culture interactions was also taught as a part of good citizenship. McIntyre's *The Canadian West* from

[85] Halverson, Pictures in the teaching of geography, 357.

1904 noted the deficiencies of traditional geographical methods like enumeration and classification when it noted that, "[i]t is not enough to-day, when our woods and our wild animals are disappearing, to say merely that the wild animals of Manitoba and the North-West Territories are the deer, the bear, and the wolf. These are the days when nature study should be evidence in such natural history as geography finds necessary to use for its own purposes."[86]

Fig. 28. Showing the interrelationships between man and the environment

Another geographer reader introduced in 1899 boasted that its images and maps came from Geological Survey of Canada geologist G.M. Dawson while its theories were derived on the

[86] A. McIntyre, *The Canadian West, A Geography of Manitoba and the North-West Territories,* Toronto, 1904, 2.

work of Alexander von Humboldt, Archibald Geikie, Thomas Huxley, and Francis Wayland Parker , who collectively demonstrated "all the causes that affect the earth as man's home."[87]

Source: G. A. Chase, *High School Geography,* Toronto: Canada Publishing Company, Limited, 1904, 182.

While the image from Long Lake taught through something geographically unique, sometimes images were seen as useful because they focused attention on the everyday world. Teachers using Rose's textbook reader in geography were assured the images were chosen "to encourage a habit of close observation of commonplace facts and everyday occurrences."[88] Each of the Canadian provinces had images "chosen for their teaching and illustrative value" which amounted to a series of different environments. In each case, students learned from their observations and participated in exercises in the classroom that afforded them a first hand nature study analogue of processes found in the real world. The book opened with a scene of an Alberta bridge and the inviting question, "who is not fond of a ramble in the country?" while children were supposed to 'observe and name the principle points of interest' in the scene before making guesses about the seasons. (Fig. 29) After looking at an image for a New Brunswick swamp, and describing the objects generally found there, students recreated the hydrologic system on a moulding board then sprinkled water down it to "watch the course of the rills, creeks, and rivers, and the formation of the lake."[89] In other sections children learned how to make British Columbia's mountain cordillera using white paper cardboard and used the school sandbox to craft the hills and valleys of Ontario and Quebec. Understanding each region's

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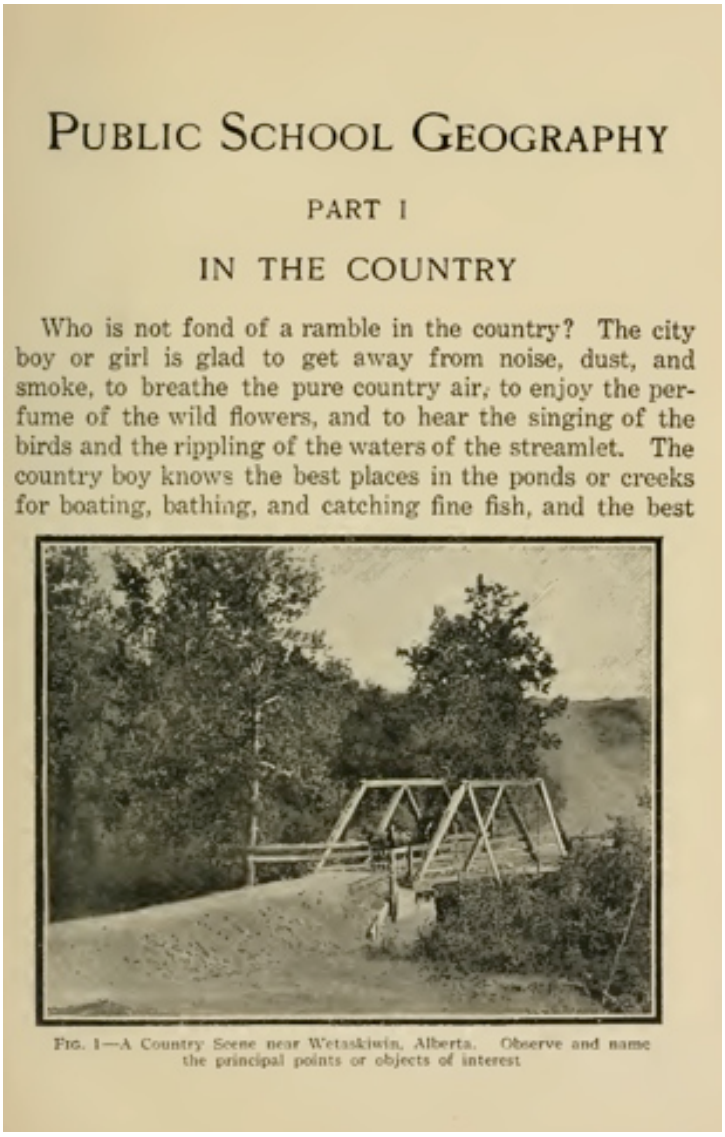
[87] *New Canadian Geography: Specially Adapted for use in Public and High Schools,* Montreal, 1899, iii.
[88] D. A. Rose, *The Earth, Its Familiar Objects: With Numerous Maps and Diagrams Illustrating the Text, Together with many Illustrations taken from Photographs of Actual Scenes,* Toronto, 1905, 7.
[89] Rose, *The Earth, Its Familiar Objects*, 31.

unique physical geography began with the observation then modeling of the landforms in the picture.



PUBLIC SCHOOL GEOGRAPHY

PART I

IN THE COUNTRY

Who is not fond of a ramble in the country? The city boy or girl is glad to get away from noise, dust, and smoke, to breathe the pure country air, to enjoy the perfume of the wild flowers, and to hear the singing of the birds and the rippling of the waters of the streamlet. The country boy knows the best places in the ponds or creeks for boating, bathing, and catching fine fish, and the best

FIG. 1—A Country Scene near Wetaskiwin, Alberta. Observe and name the principal points or objects of interest

Fig. 29. Observing a bridge at Wetaskiwin, Alberta

Source: Rose, D. A. *Rose's Public School Geography. The Earth: Its Familiar Objects, with Numerous Maps and Diagrams Illustrating the Text, Together with many Illustrations taken from Photographs of Actual Scenes*, Toronto: Canadian Book Co, 1905, 9.

The types of learning Canadian students accomplished building models and other constructions from photographs was informed by ideas in the UK and US Historical geographer Teresa Ploszajska has studied the use of models in English schools, noting that like images, they "provided tangible illustrations of geographical phenomena which were said to transform abstract notions into concrete realities."[90] However, while English students were supposed to make judgments about other places as possessions from what Halford Mackinder called an 'imperial point of view,' Canadian students learned lessons about the characteristics of different regions that made up the whole of the nation.[91] After the turn of the century, textbooks that had once listed Canada among Britain's colonial possessions began to be organized around the unique geographies of different provinces. Rather than learn about the nation by listing the principal bodies of water and rivercourses of each region, or by ordering the importance of various resources, progressive textbooks presented Canada's movement from 'colony to nation' not as a political change but as way of seeing that united the country. Perhaps the most emblematic of this was Gage's 1922 *New Dominion Public School Geography* – a text reprinted for use by every provincial school board. The opening chapter was titled 'An Aeroplane Journey over Canada' where the authors took students on an imaginary trip across the nation, drawing inspiration the two CAF pilots who had completed the trip two years prior. (Fig. 30) Like A.M. Narraway, they noted the Canadian experience of space and time had changed, and

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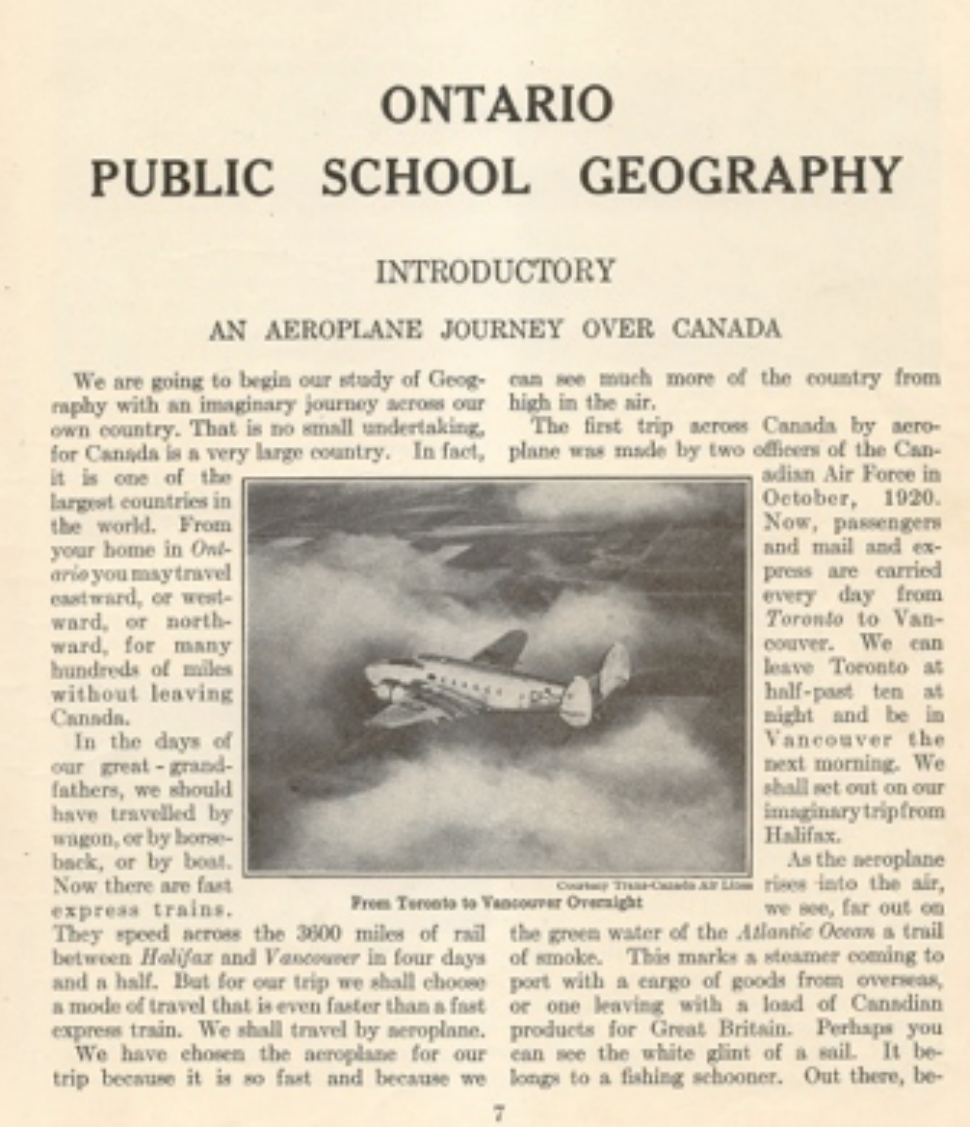
[90] T. Ploszajska, Constructing the subject: geographical models in English schools, 1870-1944, *Journal of Historical Geography* 22 (1996) 388-398, 393.

[91] Mackinder believed both those at home and in the colonies would soon no longer identify themselves as Scots, Brits, Indians, or Canadians, but would adopt an 'imperial attitude' of shared citizenship. Rejecting analytic geography for this role, he called for a synthesized understanding of the British Empire, "which is far more complex than its component parts, and therefore demands higher powers of visualization." Mackinder, The teaching of geography from an imperial point of view, 83.

that the wagons, horses and boats of the past were not suited to the 'geographical imagination' of the present era. The plane took off in Atlantic Canada amid cargo ships bringing goods from Britain and a fishing schooner. Flying over New Brunswick, 'a province of trees', it crossed the St. Lawrence River and sped low along the landscape between Quebec City and Montreal, noting the banks of the river becoming lower as the plane roared up the river. Passing over the farms and factories of southern Ontario imparted an opportunity to study the large cites and towns that dotted the countryside. This trip would certainly have challenged the 'geographical imagination' of the students: furnished by aerial photographs supplied by the Air Board, the children were shown a perspective on familiar places like Citadel Hill in Halifax or the new General Hospital in Toronto from a viewpoint few had ever experienced. As the plane crossed the country each new place or landscape came with an image, like the oblique aerial view of a forested lake in Northern Ontario, where the Department of the Interior was beginning their operations in the photogrammetric reconnaissance of the country. Once the aircraft landed in British Columbia, the authors used landscape images taken from ground level to move back through the country to engage how character of different people in the country. The images emphasized relationships between cultural and natural landscapes, or "man's adjustment of his activities to the natural environment."[92] The text presented a Canada full of citizens shaped by their geography, from 'The Men of the Frozen North' through "Men who Live by Lumbering and Mining.' These journeys by air and land stitched the country together as both a visual montage and a visual experience. They were guided on one hand by the belief that knowledge could truly be carried

[92] Halverson, Pictures in the teaching of geography, 357.

from these places through pictures and photographs, and that if students were exposed – and taught to look correctly – they would be able to synthesize an understanding of the country.



ONTARIO
PUBLIC SCHOOL GEOGRAPHY

INTRODUCTORY

AN AEROPLANE JOURNEY OVER CANADA

We are going to begin our study of Geography with an imaginary journey across our own country. That is no small undertaking, for Canada is a very large country. In fact, it is one of the largest countries in the world. From your home in *Ontario* you may travel eastward, or westward, or northward, for many hundreds of miles without leaving Canada.

In the days of our great-grandfathers, we should have travelled by wagon, or by horseback, or by boat. Now there are fast express trains. They speed across the 3600 miles of rail between *Halifax* and *Vancouver* in four days and a half. But for our trip we shall choose a mode of travel that is even faster than a fast express train. We shall travel by aeroplane.

We have chosen the aeroplane for our trip because it is so fast and because we can see much more of the country from high in the air.

The first trip across Canada by aeroplane was made by two officers of the Canadian Air Force in October, 1920. Now, passengers and mail and express are carried every day from *Toronto* to Vancouver. We can leave Toronto at half-past ten at night and be in Vancouver the next morning. We shall set out on our imaginary trip from Halifax.

Courtesy Trans-Canada Air Lines

From Toronto to Vancouver Overnight

As the aeroplane rises into the air, we see, far out on the green water of the *Atlantic Ocean* a trail of smoke. This marks a steamer coming to port with a cargo of goods from overseas, or one leaving with a load of Canadian products for Great Britain. Perhaps you can see the white glint of a sail. It belongs to a fishing schooner. Out there, be-

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Fig. 30. 'An Aeroplane Journey over Canada'

Source: *New Dominion Public School Geography*, Toronto: W.J. Gage, 1922, 7.

4.6 Vision and the Spatial History of Canadian Regionalism

By the 1930s, the promise of visual instruction was waning. As 'traditional' methods became the distant past, it was no longer vogue to write articles decrying the dry textbook and the somber lecturer by championing the need for teaching pictures. It was also becoming apparent that instilling mental images by training students to view concrete truths in pictures was a difficult task. One British study exposed a large group of children to three physical landscapes – a natural causeway, a mountain range, and a Devonshire pasture. It was found the children exhibited preference only for images they could imagine themselves in, and when asked to describe the pictures talked about taking a hike, playing in the snow, or lying in a field. The results led to the damning conclusion most teachers already knew: "the 10-year-old child accepts landscape, represented photographically, as it is, and evidences, in general, little natural curiosity as to the cause of its formation."[93] When the geographer and education theorist Neville Scarfe ran the same tests on students in Winnipeg two years later, he noted they refused to synthesize the 'whole picture.' Children identified bushes as dividing lines between fields, noting railway tracks, fences, and rivers, but said nothing about how the landscape came to be. Worse, he discovered the Canadian children fared far worse in identifying geographical features and making connection between physical process and landscape formation than their English counterparts. Arguments for visual instruction quietly faded away into 1940s, when pictures in geography were being treated once again as practical tools for teaching geography rather than world-changing things.

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[93] I. L. M. Long, Children's reactions to geographical pictures, *Geography* 38 (1953) 100-106, 105.

This was the context of George Cornish's 1927 illustration of the Yukon nursemaid. (Fig. 15) Even though he described his book as a 'protest' against the old methods, it fit well enough into the establishment to published and used in all Canadian provinces into the 1950s. By that time a new set of Canadian textbooks emphasizing that Canada was in fact a 'nation of regions' was entering geography classrooms. This new set of textbooks was not concerned with establishing patterns of thought or instilling mental images, but with presenting the nation as a comprehensive set of distinct areas influenced by spatial setting. Lewis and Josephine Robinson's *Geography of Canada* from 1950 emphasized this approach. Their goal was not to show environmental determinism, but to show how regional cultures interacted with their environments; to "locate places within certain important distribution patterns which influence their character."[94] While the Robinson's offered no theory or method about the use of pictures, illustrations, or of photographs in teaching children, they nonetheless adapted the language and imagery of visual instruction. Indicative of this, the textbook began with a series of oblique aerial photographs displaying the surface geography of Canada. Not satisfied with the airplane an emblem of the power of geographical imagination, the Robinsons' invited children to fancy themselves in "rocket-ship which will shoot us high into the atmosphere" looking down at the landscapes below.

The Canadian government Geographical Branch, headed by N.L. Nicholson and staffed by eminent geographers Trevor Lloyd, R.T. Gajda, and J. Wreford Watson was also backing visual claims that Canada was a nation of regions. Also in 1950 they produced a filmstrip for exhibit and use in schools the geographical regions of Canada showing "a modern approach to the

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[94] Robinson and Robinson, *The Geography of Canada*, ix.

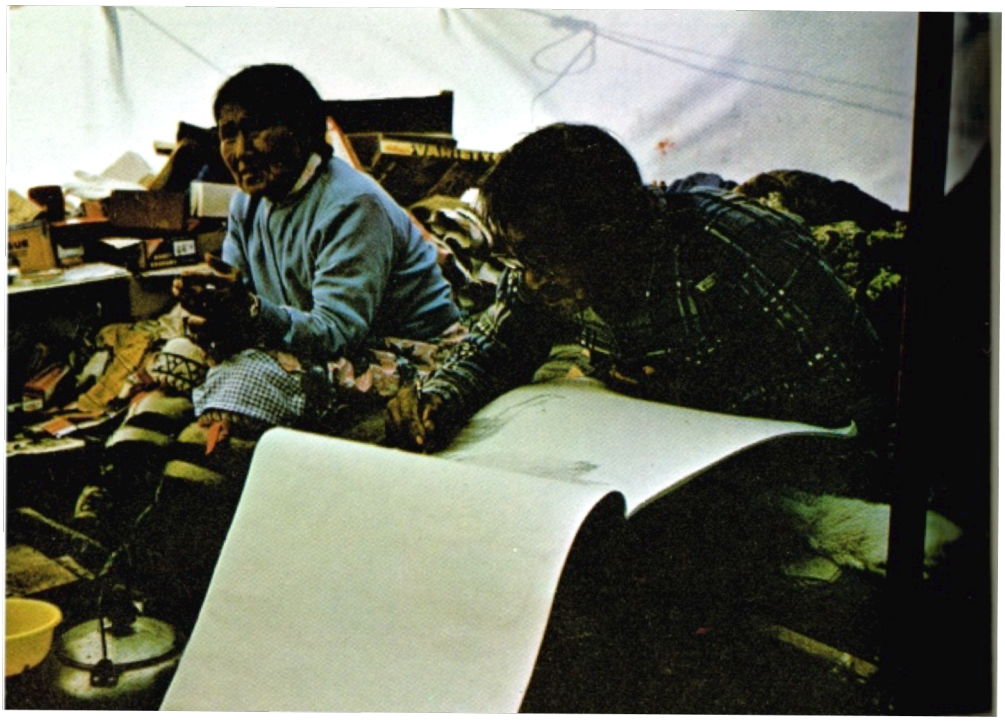
Fig. 31. Gathering images for the Geographical Branch's *Regions of Canada* film

Source: G. Hewelcke, Eleven regions of Canada, *Canadian Geographical Journal*, 41 (1950) 84-89, 87. Each region needed careful consideration as to which pictures were included. The government drew from 86,000 stills of the National Film Board as well as the photogrammetric archives, presenting a reverential archive of this kind of information, eventually settling upon a series of illustrative shots for the 'Gulf Region' that included a fishing village at Pouch Cove, NL, a log drive in New Brunswick, and an apple harvest in Annapolis Valley, NS.

presentation of geography in a manner that will be strikingly new to many Canadians. For the maps transgress provincial boundaries. They do not emphasize the mountains, highlands and lowlands of the familiar relief maps. Instead they concern themselves with the community of interests of the people resulting from the physical features of Canada which affect them."[95] The key to reading this new regional 'map' was through the pictures of each region, which were carefully chosen from the government image archives to represent different cultural landscapes of Canada. (Fig. 31) Displaying regional variation through images also set the tone for a string of textbooks produced throughout the 1960s. For instance, Krueger and Corder's 1968, *Canada:*

[95] G. Hewelcke, Eleven regions of Canada, *Canadian geographical journal* 41 (1950) 84-89, 84.

A New Geography chose images along same lines Cornish had in 1927, and encouraged much the same ways of looking and investigating. In demonstrations of the arctic region, the authors invited the children's gaze inside an Inuit summer home, where they were instructed to visually parse divisions between objects native to the arctic environment and those "the Eskimo has purchased from the white man."[96] (Fig. 32)



An Eskimo works at a drawing inside his summer home. List all the items you can see in the photograph that this Eskimo has purchased from the white man.

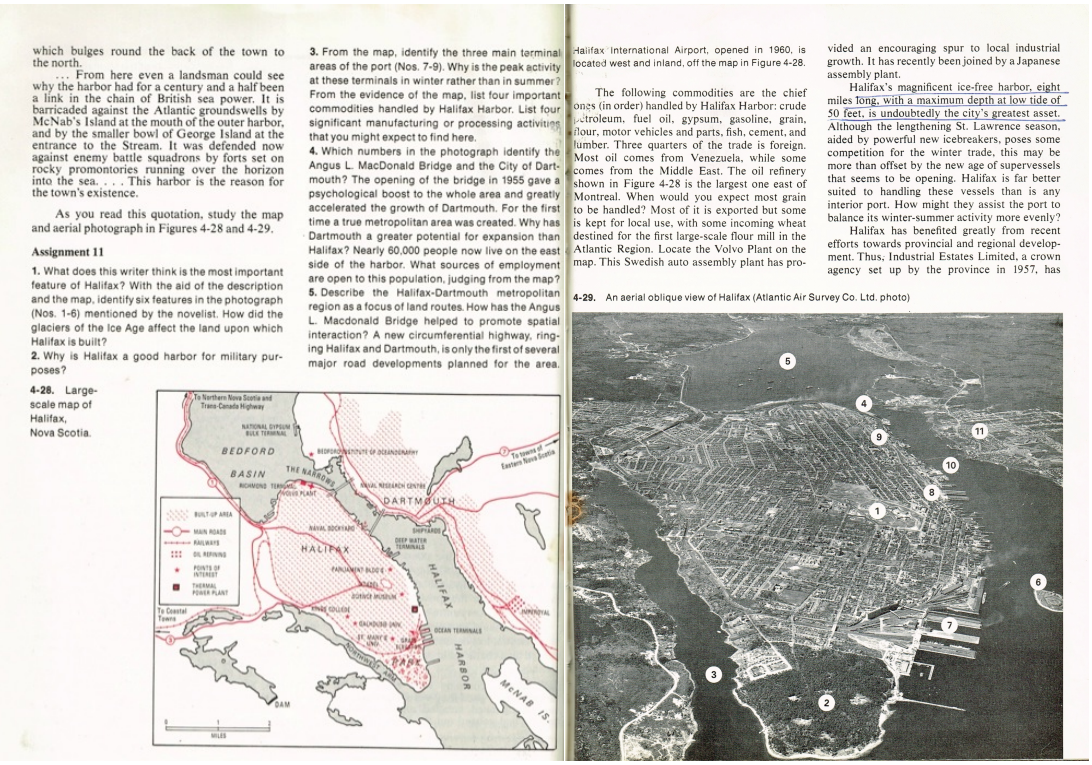
Fig. 32. Visual instruction methods used in the 1960s

Source: R. R. Krueger and R. G. Corder, *Canada: A New Geography*, Toronto & Montreal: Holt, Reinhart and Winston of Canada, Limited, 1968, 216.

[96] R. R. Krueger and R. G. Corder, *Canada: A New Geography,* Toronto & Montreal, 1968, 216.

In the second half of the twentieth century, Canadian geography textbooks used the kinds of images and instructional techniques of the earlier progressive era without claims that students needed to be immersed in these environments in order to learn, nor was there any discussion of directing observation or the synthesis of facts. Instead, the object of using images was to understand how regional variation comprised Canada. This can partly be explained by perspective: nature and home study methods indeed seemed inappropriate for use with the type of image that overwhelming dominated visual teaching in these volumes: the aerial photograph. Children were being 'confronted' by vision again. This time they were asked to adopt the geographical vision of the state, which saw land forms in terms of resource value and increasingly in terms of national defence, reading the images both for their photographic characteristics and for the objective cartographic facts they contained. Different regions were considered in terms of their contributions to these factors. A student assignment from Tomkins, Hills, and Weir's *Canada: A Regional Geography* first published in 1962 reflects the kinds of tasks students were required to perform. An aerial photograph of Halifax Harbour is provided, with numbers above various landforms and built environments. In the instructions, the first task assigned the students is using the map provided to locate where site could be found in the corresponding aerial image, such as the main terminals of the port or the bridges crossing the harbor. Next, from the characteristics revealed in the photograph, students were instructed to judge the map again with a view to how topography and seasonal weather patterns may affect the sites labeled, or consider the image and ask why Halifax is a good harbor for military purposes. Another part of the learning involved reading a short passage from Nova Scotia novelist Hugh MacLennan's *Barometer Rising* describing his experience growing up on between the 'Stream' and the 'Narrows' sections of the harbor, identifying MacLennan's cultural geography in the

image. Guided by the methods of visual instruction, students learned to interpret the aerial photograph both as a map designating the spatial distribution of geographic information and as a key into the cultural experience of landscape and the character of life there.[97]



which bulges round the back of the town to the north.

. . . From here even a landsman could see why the harbor had for a century and a half been a link in the chain of British sea power. It is barricaded against the Atlantic groundswells by McNab's Island at the mouth of the outer harbor, and by the smaller bowl of George Island at the entrance to the Stream. It was defended now against enemy battle squadrons by forts set on rocky promontories running over the horizon into the sea. . . . This harbor is the reason for the town's existence.

As you read this quotation, study the map and aerial photograph in Figures 4-28 and 4-29.

Assignment 11

1. What does this writer think is the most important feature of Halifax? With the aid of the description and the map, identify six features in the photograph (Nos. 1-6) mentioned by the novelist. How did the glaciers of the Ice Age affect the land upon which Halifax is built?

2. Why is Halifax a good harbor for military purposes?

3. From the map, identify the three main terminal areas of the port (Nos. 7-9). Why is the peak activity at these terminals in winter rather than in summer? From the evidence of the map, list four important commodities handled by Halifax Harbor. List four significant manufacturing or processing activities that you might expect to find here.

4. Which numbers in the photograph identify the Angus L. MacDonald Bridge and the City of Dartmouth? The opening of the bridge in 1955 gave a psychological boost to the whole area and greatly accelerated the growth of Dartmouth. For the first time a true metropolitan area was created. Why has Dartmouth a greater potential for expansion than Halifax? Nearly 60,000 people now live on the east side of the harbor. What sources of employment are open to this population, judging from the map?

5. Describe the Halifax-Dartmouth metropolitan region as a focus of land routes. How has the Angus L. Macdonald Bridge helped to promote spatial interaction? A new circumferential highway, ringing Halifax and Dartmouth, is only the first of several major road developments planned for the area.

4-28. Large-scale map of Halifax, Nova Scotia.

Halifax International Airport, opened in 1960, is located west and inland, off the map in Figure 4-28.

The following commodities are the chief ones (in order) handled by Halifax Harbor: crude petroleum, fuel oil, gypsum, gasoline, grain, flour, motor vehicles and parts, fish, cement, and lumber. Three quarters of the trade is foreign. Most oil comes from Venezuela, while some comes from the Middle East. The oil refinery shown in Figure 4-28 is the largest one east of Montreal. When would you expect most grain to be handled? Most of it is exported but some is kept for local use, with some incoming wheat destined for the first large-scale flour mill in the Atlantic Region. Locate the Volvo Plant on the map. This Swedish auto assembly plant has provided an encouraging spur to local industrial growth. It has recently been joined by a Japanese assembly plant.

Halifax's magnificent ice-free harbor, eight miles long, with a maximum depth at low tide of 50 feet, is undoubtedly the city's greatest asset. Although the lengthening St. Lawrence season, aided by powerful new icebreakers, poses some competition for the winter trade, this may be more than offset by the new age of supervessels that seems to be opening. Halifax is far better suited to handling these vessels than is any interior port. How might they assist the port to balance its winter-summer activity more evenly?

Halifax has benefited greatly from recent efforts towards provincial and regional development. Thus, Industrial Estates Limited, a crown agency set up by the province in 1957, has

4-29. An aerial oblique view of Halifax (Atlantic Air Survey Co. Ltd. photo)

Fig. 33. Textbook use of aerial views of Halifax Harbour

The approach to Canadian regionalism was undergirded by a visual literacy developed during the progressive era that was stripped of its progressive goals like the ability to tell truth from falseness or investigate the underlying causes of the topography of landscape.

Source: G.S. Tomkins and T.L. Hills, *Canada: A Regional Geography*, Toronto: W.J. Gage, 1962, 72-73.

[97] Tomkins and Hills, *Canada: A Regional Geography*, 72-73.

Historians of geography have insisted that the discipline's claim to an objective 'view from nowhere' needs to be 'placed' in order to understand the role of vision in disciplining geographical knowledge and practice. Hayden Lorimer suggests looking to the 'particularity and mundanity' of everyday sites of geographical practice will reveal the "doing and writing of geography as it happened."[98] What the 'mundanity' of pictures and images in the everyday site of schoolrooms and textbooks reveals is that many geographers of the early-twentieth century believed their discipline had undergone a dramatic shift from an abstract and analytic classifying endeavor to an observational and synthesizing science. Borrowing from progressive education and visual instruction, they re-invented pictures and photographs as things that could *reflect* knowledge to things that *contained* knowledge. In the picture a new frontier of investigation lay open to the observer: whether these were the geographic qualities of cause and affect, spatial distributions; the establishment of 'mental pictures' in children's heads that reflected synthesized understanding of things in the world; or the power to derives truths about the world observing its 'concrete' objects. But while the philosophy behind visual and synthetic geography that precipitated these changes believed images could participate in social reform, in Canada the frontiers of the image were the regional landscapes that seemed to characterize the country. As they pushed into a regional understanding of the country in the mid-twentieth century and a new perspective of Canada was offered through an aerial view, these geographers adopted the language and practice of visual instruction in order to make their images speak.

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[98] Lorimer, Telling small stories, 200; F. Driver, Geographical traditions, *Transactions of the Institute of British Geographers* 20 (1995) 403-422; B. Latour, *Pandora's Hope,* Boston, 1999; C. W. J. Withers, Towards a history of geography in the public sphere, *History of Science* 37 (1999) 45-78; S. Shapin, Placing the view from nowhere: historical and sociological problems in the location of science, *Transactions of the Institute of British Geographers* 23 (1999) 5-12; Shapin, *Never Pure*.

Chapter 5: Visualizing History

5.1 'The Collective Memory of Mankind'

> To gain the 'experience,' to assimilate 'the collective memory of mankind' we learn to read, we purchase ten feet shelves of books that we hope some day to have the leisure to read, but we never seem to reach that day and the books go unread. We seek an education that we may find the truth, but truth is so elusive the only thing that there is for us to get is 'experience' and the only way to get it truthfully is by pictures, 'there are a thousand languages, and a picture speaks them all.'
>
> Ernest Brown, "The Collective Memory of Mankind"

It is difficult to pick up a book on the history or geography of Canada printed between 1910 and 1960, turn to the section on the West, and not 'experience' a picture supplied by Ernest Brown. For illustrations of the early fur brigades, of frontier ranching, the mighty ramparts of the Mackenzie River, a Blackfoot warrior in ceremonial dress, or the metropolitan bustle of Winnipeg, an image from Brown's collection was sure to fit the needs of authors and publishers. Supplying these images was his livelihood. Brown's advertisements to publishers promised "[w]e can supply you with pictures to illustrate everything of importance to the Province or the West." [1] Once customers specified a topic, he would select the appropriate depictions to be mailed out, along with an invoice and instructions for use. Failure to credit him as provider would send Brown into a vigorous assertion of his copyright; so well guarded was his hold on the visual past of the Canadian West that he often claimed, "[i]f it's an old-time picture, it's mine."[2] Brown had collected images his entire adult life, and when he agreed to sell his precious collection to the Province of Alberta in the 1940s, the Edmonton-based photographer-

[1] Provincial Archives of Alberta (PAA), Ernest Brown fonds, PR1965.124, file 34a, Personal Correspondence – 1928-1948.
[2] G. McNeil, "Collection of photos of Old West subjects interesting memorial," *Free Press* (London), 1 June 1960.

historian possessed a one-of-a-kind image collection including many images dating from the 1880s. The quality that drew authors to his individual images was the same that interested the province in the whole collection: the photographs depicted the transformation of Western Canada from a state of nature thought to be dangerous 'Indian territory' into a modern settlement landscape marked by well-ordered farms and booming urban communities.

Now residing in the Provincial Archives of Alberta, Brown's images continue to speak powerfully to narratives of the Western Canadian past.[3] Beyond history and geography books, they have been circulated widely in magazines, window displays, films, walking tours, plays, museums, or websites.[4] Archival photographs have also been an instrumental resource in framing values and understandings of the West within settler society: they privilege white males as agents of progress while pacifying the domestic role of women; they narrate progress and development by charting the taming of wilderness, romanticizing the fur trade and idolizing machinery; they focus a colonial gaze upon Plains aboriginal groups. It is important to recognize the ways in which colonialist imagery endures in old photographs, often providing uncomplicated ideological orderings and projecting historical imbalances of power.[5] This is clear to those who investigate the structures, symbols, and messages conveyed through photographic representation by reading the images 'against the archival grain' of their production

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[3] M. Dyce and J. Opp, Visualizing space, race, and history in the North: Photographic narratives of the Athabasca-Mackenzie River Basin', in: S. Carter, A. Finkel,P. Fortna (Eds), *The West and Beyond: New Perspectives on an Imagined Region*, Edmonton, 2010

[4] Fort Edmonton Park, "Ernest Brown Historical Photography," *Fort Edmonton Park*, last modified accessed 5 October 2013, http://www.fortedmontonpark.ca/plan-your-trip/attractions/ernest-brown-historical-photography/; *Historic Walking Tours of Downtown Edmonton,* Edmonton, 2004; K. Simonson and D. Cheoros (s.n.), The Unmarried Wife, The Passion and Photography of Gladys Reeves and Ernest Brown,

[5] M. A. Sandweiss, *Print the Legend: Photography and the American West,* New Haven and London, 2002; D. Poole, *Vision, Race, and Modernity: A Visual Economy of the Andean Image World,* Princeton, 1997 .

and use.[6] However, mapping the representational arc of Brown's images tells only half the story. In the early twentieth century, as his images helped represent a mythic imagery of Western Canadian pioneer society, Brown found value in their materiality; these were not only things to be seen, but also 'experienced,' touched, listened to, and held. In his dreams he saw his images in different forms, whether handled in museums, puzzled over in classrooms, and exchanged as teaching picture cards, and over his life he attempted to turn these visions into reality. Moreover, for every different material object the photographs became, Brown imagined them storing and communicating the history and geography of the Canadian west in different ways. Ultimately, Brown prized these images more as archival objects consisting of factual data – where they were from and how they were taken – than as images with representational qualities – what they showed.

These values, these other histories of the collection, are not available at the Provincial Archives of Alberta. Instead, users find individual images are accessible in a digitized card catalogue, searchable by keyword, where the images are valued for their individual content. The ways in which they functioned in Brown's original archive, and the various material forms they were given are hidden. Thus his images must be read 'along the archival grain' not just against it. This kind of analysis, proposed by Ann Laura Stoler, requires looking for the assemblages and epistemic hierarchies that gave Brown's images credibility, and identifying what allowed them to become history.[7] This chapter seeks to recover the lost historical geography of knowledge constituted by the image archive and by Brown himself. Though Brown let his

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[6] V. Harris, The archival sliver: a perspective on the construction of social memory in archives and the transition from Apartheid to democracy, in: C. Hamilton, V. Harris, J. Taylor, M. Pickover, G. Reid,R. Saleh (Eds), *Refiguring the Archive*, Dordrecht, 2002 , 135-136.
[7] Stoler, *Along the Archival Grain*.

images speak for the West, he maintained rigid control over both the geography of their circulation and the space of the archive that gave them voice. While he described his material as 'the collective memory of mankind,' he alone managed – and managed assiduously – the messages that his collection conveyed.[8] He read deeply into literature on progressive education and visual instruction, and incorporated their methods to strengthen the impact of his pictures. According to commentators, "he foresaw that he held history in his hands with these photos. He kept careful files, and if asked about an incident after four or five years, could come up with the necessary information in minutes."[9] Through these means Brown not only built an archive of the Western Canadian past—he mobilized his archival objects to help *create* a geographical region of the same name. When he sold his collection to the Province of Alberta in 1947, he offered not only a record of the historical development of the West, but a key to turn-of-the-century society's understandings of representation, knowledge, and place. This chapter investigates these themes by exploring the twin lives of Ernest Brown and his images. The three parts of this interrogation are: the early establishment of Brown's collection; Brown's work transforming it into a Pioneer Museum; and Brown's creation of a 'teaching pictures' series of educational photographs. In each of these instances, Brown sought and invented ways to show time and space to Edmonton and the West as he attempted to visualize geography and history. Ernest Brown's efforts reveal a spatial history of how archives, teaching practice, and the regional imaginations of geographers came together early in the twentieth century to construct both the Canadian West and the character of the citizens who occupied it.

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[8] PAA, Ernest Brown fonds, PR1990.0601, file 71, "Canadian Kodak to E. Brown, 1928," 'The Collective Memory of Mankind'

[9] A. Iris, "22 truckloads of history: Ernest Brown's cameras made a unique pictorial record of Alberta's early growth," *Family Herald* (Edmonton), 28 July 1960 , 21.

5.1.1 Making the Archives

With the conclusion of a legal transaction in 1949 Ernest Brown's collection became Alberta's first major acquisition of a pre-existing archive "such as the successive archivists of the province for the past 41 years, have not been able to accumulate."[10] By Brown's estimation it was his commitment to documenting and storing the history of the province that made the collection so valuable, a devoted effort that included battles with "flood, fire, and depression." In correspondences over the sale of the holdings, he often pointed out that anyone could have accomplished what he did, but he was the only one who tried. The materials were intact, important, original, and vast, consisting of 70,000 prints, 150,000 negatives and a collection of documents that, Brown assured the province, contained "historical data and social and economic facts indispensable to their archives."[11] In acquiring the immense visual record for public use, Albertan officials believed they were gaining ownership over the collective memory of Western Canada, as they envisaged authority over the photographic narrative passing out of Brown's hands and into the purview of the province. Upon accessioning the images, however, they learned, conversely, that this ready-made 'archive' was not easily integrated into the classificatory systems of the government. Brown's filing systems were exhaustive and confusing, with much of the material arranged according to his own ideas about history, the value of images, and the importance of memory. The province expected a simple index using major themes illustrative of a clear provincial past, but were taken aback to discover that no such index existed. An idea was proposed where a history student from the University of Alberta

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[10] PAA, Ernest Brown fonds, PR1965.124, file 145a.i, "Alberta Government Purchase of Photo Collection, 1945-1947," 'Archives.'
[11] PAA, Ernest Brown fonds, PR1965.124, file 145a.i, "Alberta Government Purchase of Photo Collection, 1945-1947," E. Brown to D. Campbell, 18 January 1945.

might catalogue the negatives for her PhD thesis, but it was decided that such a 'herculean' task would take a 'lifetime of work.' Much of the challenge perceived by government archivists derived from the interweaving of Brown's life and the life of his archive: the idea was to separate the two in order to make the history for all Albertans. However, considered along the archival grain, the connection between Brown and his collection offers a pattern that reveals much about the cultural place and use of images in the early-twentieth century.

Born in England, Ernest Brown began his study of photography in the 1890s under James Bacon of Newcastle-on-Tyne. Such practical training was as costly and time consuming as becoming a doctor or lawyer – anatomy, optics, and chemistry were compulsory subjects.[12] After graduating and getting married, Brown decided to head to Canada where he and his wife eventually made their way to the Northwest Territories. There in 1903 Brown planned to profit by selling images of the landscape and Native peoples of the region. Unfortunately for Brown he was not the first photographer to reach Edmonton with the same ideas. The firm of Boorne and May had been operating in the region for 20 years, and their one-time employee Charles Wesley Mathers was running a successful studio. Moreover, the influx of new technologies like the easy-to-use Kodak camera was rapidly changing the societal role of professional photographers. With cameras in the hands of everyday people, practitioners were forced to find new definitions for themselves and market the value of their higher-quality images.[13] For his part, Brown turned his attention from taking photographs to collecting them: after working for C.W. Mathers for a short time, he purchased his former employer's business, photographs and all his slides in 1908. The move proved profitable, and by early 1914 the 'Brown Block' was erected on Jasper

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[12] T. H. Sutherland, The muster roll, *STET: A University of Alberta Students' Union Publication* 2 (1949) 17-20 , 17.
[13] B. Newhall, *The History of Photography, from 1839 to the Present Day,* New York, 1968

Avenue, a 66-foot frontage that included the owner's studio. Yet the outbreak of the First World War that August meant the very same year Brown was going broke, and by 1920 he had been evicted from the building that bore his name. Brown then moved out of the city to Vegreville where he founded the 'Art League' to sell pictures to schools and publishers, a business venture likely the invention of his younger mistress, Gladys Reeves. Undaunted by earlier failures, Brown continued to fill the shack outside his Vegreville cottage with pictures, assiduously documenting their origins. He would scribble notes to himself on his shirt cuffs when away from the collection, then later transcribe them onto his photographs. Despite a fire that destroyed 4,000 of his original prints, his fortunes began to change in 1927 when the Hudson's Bay Company contacted him with an offer of $750 for views of their early forts. As his collection grew in the interwar years, Brown realized that he had a large degree of control over the way visual narratives of the Western past were presented and remembered. In addition to selling his images for profit, he spent the 1920s arranging them into educational albums following different branches of Western Canadian history, which he intended for sale to schools and government offices. During the 1930s this work expanded and he ran a free photographic teaching museum called 'Pioneer Days' at Haddon Hall in Edmonton, which attracted 3,000 visitors a month, including at least 50,000 students over the exhibit's lifetime.[14] He spent the same period trying to sell his photographic teaching albums, now dubbed 'The Birth of the West' series. However, at the outbreak of another war in 1939 the Canadian forces commandeered his museum building and, ruined again, Brown attempted to give away copies of 'The Birth of the West' albums to pay off his debts, even as he prepared to sell his collection to the province. When the

[14] PAA, Ernest Brown fonds, PR1965.124, file 156a, "Correspondence re: 'Pioneer Days Museum.'

Government of Alberta finally purchased Brown's collection in 1949, they paid enough to provide for him, his wife and his mistress to live modestly. Brown died soon after in 1951.

When Alberta acquired Brown's images, they were arranged in unlikely schemes, with negatives grouped according to the name of the original photographer and the date Brown acquired the slides, and with copious notes on the historical details surrounding the picture. Brown had been keen to use these stories in illustrated lectures to make his images speak: "Long before the days of progressive education," said one commentator, "Brown was … 50 years ahead of his time."[15] Beyond this documentation of their provenance, the photographic sets were also indexed through a set of imperatives that revealed Brown's view of the spatial history of the West: he categorized them by landscapes, including regional impressions of the West; he organized some based on their value for visual learning, selecting images that would teach children about the role of their pioneering forbearers; and yet others he arranged in order to teach the history and geography of Western Canada as a unified subject.[16] The archive had been fundamentally transformed a number of times over Brown's lifetime as he ordered and re-organized his holdings in successive efforts to transform them into teaching tools that would give a first-hand account of the growth of the West.

Brown's archive was the sum of a vast collection of photographs of Edmonton and the surrounding region. The sheer volume of material -- sufficient to dominate views of the early West – still gives it value and meaning. However, a closer look shows how this totalizing effect was also the result of the careful organization of many of the individual images. On this matter, the highly original discussion of archival organization by artist and critic Allan Sekula is useful.

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[15] Iris, "22 truckloads of history," 21.
[16] PAA, Ernest Brown fonds, PR1965.124, file 148a, "Filing System and Negative Procedures."

He asks how an archive either creates or destroys forms of social memory. He posits that deposition in an archive 'liberates' material from the contingencies of its original use, and then describes the photographic archive as 'the cleaning house of meaning,' – as a place where items enter and emerge with different values assigned to them. Inside the archive, images may be given new and sometimes conflicting meanings. In Sekula's view it is not uncommon for the photograph archivist to be "torn between narration and categorization, between chronology and inventory."

Sekula sees the initial unity of an archive as imposed through ownership and organization. The archive constitutes a 'territory of images' where "not only are the pictures in archives often *literally* for sale, but their meanings are up for grabs."[17] In Edmonton, Brown remade meaning as he developed his collection by incorporating the work of other photographers, beginning with Boorne, May, and Mathers, then later adding the collections of pioneer photographers Charles Morton Tait and August Frasch. He also inherited the organizational scheme of each photographer, but because many of their pictures were sold as illustrations for books, magazines, teachers, or government offices, they tended to classify their pictures according to the theme or subject matter they presented. In the custody of professional photographers, the images meant something different. They were arranged for customers, who looked through a printed list of image titles, using captions like "Indian Dwellings" or "Railways – CPR" to make their choices, and placed their order by mail. Upon receiving the order, the photographer would consult his records for the appropriate slides, enlarge them and send the prints to the client. The purpose of the studio collection was not to claim a larger corpus of

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[17] A. Sekula, Reading an archive: photography between labour and capital, in: B. Wallis (Ed), *Blasted Allegories: An Anthology of Writings by Contemporary Artists*, New York, 1987 , 115.

meaning, but to offer impressions of particular scenes or events. Even the 'view registers' indexing the images is suggestive of this fact – that what was important was the surface appearance of the scene, with each image simply labeled in numerical order according to when it was taken.

While Brown acquired other photographers' collections hoping to reproduce them for profit, his organizational schema reveal that for him these were not 'views' or representations, but material remnants of history. He derided earlier photographers like Mathers, who simply "numbered his residences from No1 and his farm views the same way," while championing his own method of 'grouping' images according to their historical and geographical sequence.[18] The system began by reproducing a similar scheme for the content. Brown's included "1. Indians, 2. Eskimos, 3. Far North, 4. Buffalo, 5. Gold Klondyke, 6. Police and King Murder Trial, 7. CPR Construction Days, 8. Mountains and Banff, 9. Bridges and Ferries, 10. Transportation."[19] From there, Brown's spatial and temporal concerns became evident. He added a letter, from A through Z, that when affixed to the image expressed the place and the direction the photograph was taken from -- looking northward, looking downhill, from behind or in front, and so on, -- to his index. The final element in the system arranged the image according to the moment in time it chronicled. Unlike the 'view' of earlier photographers concerned with just the represented subject, Brown assigned historical and geographical coordinates to the images. As he crafted his own archive, this system of meaning-making would guide the public use he eventually imagined for the images, which was to recreate a spatial visualization of the Western past.

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[18] PAA, Ernest Brown Index Files [unpublished manuscript], volume 1, page 66.
[19] PAA, Ernest Brown fonds, PR1965.124, file 148a, Filing System and Negative Procedures.

Yet another important part of this classification included the role of the photographer, so Brown developed a shorthand for recording the provenance of each image.[20] The origins of one, titled "Traders running the Rapids at Second Portage at Smith, Slave River," were documented as "Photographer. B&M, CWM, EB. Bought Neg" indicating the firm of Boorne and May took the original image before it passed into the hands of Charles Wesley Mathers, and eventually to Brown. His association of the work of the photographer alongside the historical and geographical position of the images is indicative of the interweaving of personal and archival, and suggestive of some of the ways he understood the mythic and mnemonic implications of his own collecting. Brown was obsessed with the question of preservation of the social record: his files are stocked with clippings and personal correspondences over the matter of how to preserve the passing of time, meditations on the crumbing of civilization, and the fragility of media sources. Equally fascinating to Brown was the collection of and storage of knowledge. He pondered how the union of information and material form gave rise to understanding, as when a "fur trader in the vast spaces of the West, would ask a direction of an Indian, he would promptly draw a map with burnt wood on a piece of birch bark, the picture would be mentally impressed in an instant." To Brown this seemed to be a deep and lasting way of allowing knowledge to enter the mind, which he contrasted with his own 'mechanical age' in the early-twentieth century, where society is "limited by our capacity to remember" and suffering from "the short memory span of the average mind."[21] In Brown's own mind the forces of change and modernity, which he championed, were at war with society's imminent loss of its ability to remember – and even record – history.

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[20] PAA, Ernest Brown fonds, PR1965.124, file 148c, Filing System for Negatives.
[21] PAA, Ernest Brown fonds, PR1965.124, file 246, "The Collective Memory of Mankind."

Brown's views of memory may also be situated historically. Memory has many forms. We may speak of individual memory as the set of meanings and narratives people attach to places and events in their past. Together, groups of individuals constitute public or collective memory networks: these are the stories that society tells about itself, myths that embody rules for behavior, morals and lessons not to be forgotten.[22] As humans we all can remember, but Matt Matsuda in his *Memory of the Modern* points out that a particular view of 'memory' arose as a category of analysis in the nineteenth century to articulate new understandings of history, the power of the state, and modern subjectivity. Matsuda cautions that while memory may be innate, we can also think of the meaning of 'memory' as a changing, socially constructed practice distributed in different ways for different reasons. Placing nineteenth-century Darwinian views on the origin of species and Freudian theories about the subliminal mind alongside new 'memory technologies' like passports, photo identification cards, and government population statistics, Matsuda argues that fin-de-siècle understandings of memory were based around a set of dualisms. The first questioned whether memory was an organic and mysterious human trait, or if it was a technical process similar to the possibilities for record keeping achieved by mechanisms like the camera or filing cabinet. The second concerned whether the pace of progress and the proliferating technologies modern society used to 'remember' things would actually lead to social forgetfulness: "The continuous disappearance of the passing moment will thus produce a dual effect: it will be experienced both as Baudelaire's celebration of modernity as 'the transitory, the fugitive, the contingent,' *as well as* Friedrich Nietzsche's tirade against the

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[22] M. Halbwachs, *On Collective Memory,* New York, 1980; P. Connerton, *How Societies Remember,* Cambridge, 1989; P. Nora, *Les lieux de memoire,* Paris, 1997; S. Boym, *The Future of Nostalgia,* New York, 2001; A. Gordon, *Making Public Pasts: The Contested Terrain of Montreal's Public Memories, 1891-1930,* Montreal and Kingston, 2001; E. Zerubavel, *Time Maps: Collective Memory and the Social Shape of the Past,* Chicago, 2003 .

'burden of history.' … [T]he 'crisis' of nineteenth-century memory is that there is simultaneously too much and too little."[23]

The tensions Matsuda identifies between memory as organic or mechanical, and between concerns over loss and preservation, marked Brown's own divided view of modern progress and informed his archival work. While he summarily celebrated the rapid development of Edmonton in the first decades of the twentieth century, his scrapbooks contained prophetic newspaper accounts with titles such as: 'When they Dig Us Up,' which speculated how future historians excavating buried skyscrapers in a distant future "will think we worshipped enginery." An article Brown likely wrote himself under the pseudonym "A.F." for the local Edmonton daily titled 'The Town Bell-Man' asked whether future civilizations would imagine the 1920s antiquated or not. The author noted that unlike Quebec and Ontario, there was an alarming lack of permanence to architecture in Alberta: "We are not building, in fact, for the future. If a house stands for twenty or thirty years nowadays we are well content, and even our big office buildings are being constructed with the likelihood of a tearing-down and replacement long before they reach the century mark."[24] What was the point of progress for posterity's sake, Brown asked, if it was carried out at the expense of preserving history?

Brown found his answer in a memory technology that was deeply human and highly mechanical. The camera could resolve the conflict between permanence and transience, and mediate relationships between the past and the future. Presaging ideas in the communications work of Harold Innis, Brown elaborated on the connection between technologies of record and

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[23] M. K. Matsuda, *The Memory of the Modern,* New York & Oxford, 1996 , 16.
[24] PAA, Ernest Brown fonds, PR1990.0601, file 70, "Canadian Kodak to E. Brown, 1929." "When they Dig us Up' and 'The Town Bell-Man.'

stages of development, valorizing the camera as the apogee of civilization, even if it did have great faults: "not even the pictures we make nowadays, being printed on paper, are likely to last, for records on paper such as we have today will perish. The brick and clay tablets of Egyptian and Assyrian times have endured until now; few of our documents will ever reach any such length of years."[25] In this schema the photograph was not just a record of the past, but a window into understanding society and a key to the past that those yet to come would be lost without. Unlike the changing landscape or architecture, which could succumb to ruin, an image was able to preserve the past, at least for a time: "it is truth .. it shows the stages of development," he assured, and "[f]rom what has gone before can the future be judged, history repeats itself."

Brown struggled to reveal the connection between memory and the stages of civilization in his own photographs. Taking two images from his archive: 'Indian Encampment for the Edmonton Fair" from 1904 and "City" from the 1910s, he stitched together a visual narrative, titled "Time Marches On." (Fig. 34) In the collage, a Cree camp occupies the foreground in front of the HBC Big House at Fort Edmonton and trading post. Not so long ago, as we reckon the flight of time, [he wrote] … the scene here depicted was a familiar one to the Edmonton folks of that day." Above this Brown superimposed an image of the same scene ten years later: "The Fort is seen nestled in the shadow of the magnificent architectural pile, the Alberta Parliament buildings. Spread out on the landscape, and fading away into the distance we see the city of to-day. The dream has come true."[26] " The hovering visage of progress, represented by the new city, both insists upon and laments the passage of the Aboriginal people from the scene. Here, subjects from two of Mathers' older images from the 1890s appear in the foreground of the

[25] PAA, Ernest Brown fonds, PR1990.0601, file 71, Canadian Kodak to E. Brown, 1928, "The Town Bell-Man"
[26] PAA, Ernest Brown fonds, PR1965.124, file 150, "Written Introductions to Historical Pictures."

encampment holding horses, hemmed between the road circling the camp and the marks of the plough signaling unused land put to work. Images like these framed Brown's view of history, positing the work of the camera as the true 'collective memory of mankind' because it "enables us to form a mental picture of the time when the mountain we are seated upon, and the valley we look into, did not exist but were covered with the various seas that for aeons of time covered what are now our Western plains."[27]

Fig. 34. 'The March of Time'

"Thirty years is but a brief span in the March of Time; yet what changes! Let us cast our eyes into the clouds and see the reality of what was but a dream to old timers of three decades ago."

Source: Provincial Archives of Alberta, Ernest Brown fonds, PR 1965.124, file: 1016.

[27] PAA, Ernest Brown fonds, PR1990.0601, file 85, 'De Profundis' Feb 1929.

Historian of photography Martha Sandweiss explains that composite images like the ones Brown created are emblematic of the challenges early photographers faced attempting to turn the camera into a storytelling device that could participate in the making of history. Nineteenth-century camera work "transformed photography into a narrative storytelling medium that could describe events stretching across space and time, but in doing so they strained against the technical and conceptual limitations of a medium that could capture only a particular moment and place."[28] Brown called on these forces when circulating his composite images around town, claiming "[i]t is on scenes like these the pioneers of our country love to dwell, and become reminiscent of the happy times that were, and of the old familiar faces now gone from their gaze, but will never be erased from their memory. Time marches on." At other times Brown's unmodified images garnered attention, as when the City of Edmonton made plans (never completed) to reconstruct the original HBC fort as a tourist attraction in the 1920s. They had saved the timbers from the original building, and because "[p]erfect authenticity was necessary" Brown's photographs were invaluable because "with his sense of history he had photographed the Fort from many angles before it was torn down in 1915."[29] Likewise, when the city planned a new 'high level' bridge across the North Saskatchewan, Brown reminded councilors that his images of the previous 'low level' crossing had revealed an erosion pattern that compromised the stability of the bridge. "A historian should not be a prophet," he modestly stated, before describing how he had pointed out this defect to the city a number of times and that a great deal

[28] M. A. Sandweiss, Undecisive moments: the narrative tradition in western photography, in: M. A. Sandweiss (Ed), *Photography in Nineteenth-Century America*, Fort Worth, 1991
[29] Iris, "22 truckloads of history," , 22.

of money would have been saved had his advice been heeded.[30] The images were there to back this claim up, and in 1928 Brown sent one to the local newspaper "taken from the top of the fire hall looking east, snapped during a July day in 1900. It shows many famous landmarks, including Robertson's hall and the immigration hall with acres of land behind." Using the image to show how "[t]his land has now disappeared." chronicling the erosion of the riverbank.[31] As memory devices, Brown's images retained what was lost over the passage of time.

In her book, *Print the Legend*, Martha Sandwiess contends that the desire to use photographs as stories was particularly important in the North American west, where the transformation of the landscape was taking place quickly and dramatically. This sheds light on Brown's conviction that images were able to change the way people thought because they recorded the past and presented it in narrative form for the benefit of the future. However, he also valued photographs as straightforward and singular facts about history. It is likely that these latter ideas were borrowed from the photographic survey movement in England. As Elizabeth Edwards demonstrates in her *Camera as Historian*, in the late-nineteenth century groups across England became interested in photo-documenting and archiving pictures of their present for use by the future. She connects these widespread initiatives with the rise of popular photography, but shows that they were also a response to rapid changes in the human and physical landscape. Local survey groups went about photo-chronicling farms and architecture because they worried that the pace of industrial change would soon eliminate these landscapes, and they assuaged their fears by meticulously indexing and archiving the material they produced. Edwards suggests that major social and environmental shifts underway during the fin-de-siècle period generally

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[30] PAA, Ernest Brown Index Files [unpublished manuscript], Volume 1, p. 36.
[31] "River bank falling in," *Bulletin* (Edmonton), 14 February 1928 .

inspired a wider public interest in history, which was translated into these various efforts to preserve the collective memory of society.

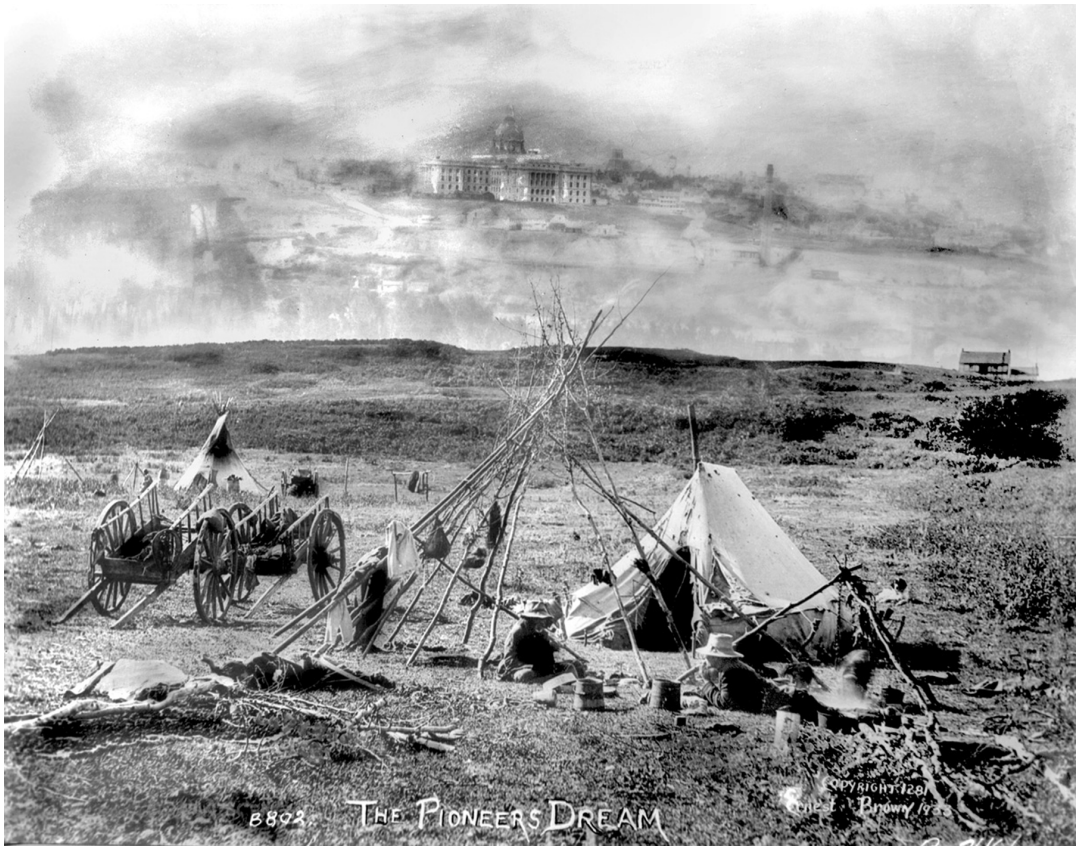

Fig. 35. 'The Pioneers' Dream'

Source: Provincial Archives of Alberta, Ernest Brown fonds, PR 1965.124, file: 1010.

Edwards' claim that photo-surveys were 'self-conscious acts of memorialization' may be extended to the Canadian West.[32] In Edmonton, Brown made numerous attempts to catalogue the past by using the 'camera as recorder:' bearing witness to the ever-vanishing present, either on his own or by collecting the views of others, and he organized his archive around this

[32] E. Edwards, *The Camera as Historian: Amateur Photographers and Historical Imagination, 1885-1918,* Durham, NC, 2012 , xi-xii.

impulse. Again presumably using the pseudonym A.F., Brown publicly supported this move by suggesting in a newspaper (or at least kept the clipping), saying "it may be good policy in Alberta to make picture collections now and to keep them as records, for future reference and interest, of what our dwelling houses and places of business away back in the distant-past-that-is-now-the-present looked like." Indeed, in the 1920s Brown was celebrated in Frank Oliver's daily, the *Edmonton Bulletin*, for "recording the progress and lives of …[the city's] inhabitants from the early days on."[33] It was not usual for a town founder like Oliver to praise what Brown was doing since his photographs seemed to give living testament to the work of the pioneers. Brown cultivated such interest with images such as 'The Pioneers' Dream.' (Fig. 35) Using the same tropes as 'Time Marches On' this image offers an unequivocal argument that the city grew from the hopes and sacrifices of the pioneers. Brown ordered and arranged his photographs to speak to history and anticipate the future. When the Province of Alberta became warden of his photographs, this was the archive they inherited: Brown had spent the better part of his life making his images speak across what he saw as the fleeting present, animating change into a vision of Western Canadian history.

5.1.2 The 'Pioneer Days' Museum

When the critical cultural study of photographs emerged in the 1970s, readers were asked to think about representation.[34] Stuart Hall and Roland Barthes famously showed how

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[33] "Camera records transition of pioneer fur trading posts to metropolis of the North," *Edmonton Bulletin* (Edmonton), 11 March 1922 .

[34] R. Barthes, *Mythologies,* New York, 1972; Barthes, *Camera Lucida*; J. Tagg, *The Burden of Representation: Essays on Photographies and Histories,* Minneapolis, 1993; Burgin, *Thinking Photography*; A. Trachtenberg, *Reading American photographs: images as history, Mathew Brady to Walker Evans,* New York, 1989; S. Sontag, *On Photography,* New York, 1977; A. Sekula, The traffic in images, in: B. H. D. Buchloh (Ed), *Photography Against the Grain: Essays and Photo Works, 1973-1983*, Halifax, 1984; S. Hall, *Encoding and decoding in the television discourse,* Birmingham, 1973

undeclared meanings could be found in texts or images through a semiotic structure of signs. Analyzing images required decoding how various arrangements of these signs reinforce or challenge common mythologies and dominant stereotypes. In one famous example Barthes' decoded a cover of *Paris Match* which presented a young black soldier saluting the French flag, claiming the image borrowed structures that *re*-presented the myth that France's colonial rule over Algeria was justified. These pioneering analyses laid the foundations for a semiotics of imagery and viewership that remains a useful tool in helping understand the historical role of photographs on a wide range of subjects.[35] Several criticisms of the interpretation of images are prescient, however, ranging from the question of just how far the analysis *reads into* the images what is not necessarily there, whether everyone necessarily *reads* in the same way, to whether images can be 'read' in the first place. As art historian W.J.T. Mitchell has pointed out, treating images like semiotic texts ignores the 'visuality' of pictures. For Mitchell, reading and seeing are both meaning-making and –receiving practices, but operate according to different structures, a claim he asserts through the intentionally difficult parallel sentence "photography is and is not a language, language is and is not a photography."[36] Literature on the 'visual turn' is replete with language like this, which clearly aims to damn structural semiotics. However, a more useful result of the turn to find language expressive of seeing is that studies of the 'visual' are not limited to classically representational objects like photographs or paintings. Rather, all kinds of materials, ideas, and practices that may be exchanged, performed, circulated, are all rich ground

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[35] C. Pinney, *Camera Indica: The social life of Indian photographs,* Chicago, 1997; P. Geller, *Northern Exposures: Photographing and Filming the Canadian North, 1920-45,* Vancouver, 2004; F. Dunaway, *Natural Visions: The Power of Images in American Environmental Reform,* Chicago, 2005; Crary, *Techniques of the Observer*; Ryan, *Picturing Empire*; Schwartz and Ryan (Eds), *Picturing Place*; D. Poole, *Vision, race, and modernity: A visual economy of the Andean image world,* Princeton, N.J., 1997

[36] W. J. T. Mitchell, *Picture Theory: Essays on Verbal and Visual Representation,* Chicago, 1994 , 281.

for analysis of 'visuality'.[37] Even critical scholars who want to keep asking questions about photographs seem to be turning away from the earlier studies of pure representation. For instance, Elizabeth Edwards has asked how we might think "beyond the visual" by suggesting that photographs are primarily material objects: we should ask what it was like to hold an image in your hands, turn over the leaves of a heavy album, have a photograph developed at a store, mail it to a friend, or paste it to your fridge with a magnet.[38] In Edward's estimation, "[m]ateriality is of key importance here because materiality precisely emphasizes the relational qualities of photographs in a social context."[39] To find out how photographs worked as material objects in early-twentieth century Western Canada requires an examination of Ernest Brown's Pioneer Days museum where his photographic archive went on public display and entered the 'social context.'

The Pioneer Days historical photograph museum Brown established in Edmonton during the 1930s, was undergirded, philosophically, by his understanding of the materiality of images. The project ran from 1933 to 1939 when the military took over the building in which it was housed. Through these six years, the museum had 3,000 visitors a month and Brown claimed that some 50,000 children may have visited to see a record of the early days of their town, "some sixty years ago, when practical out-door photography had just been invented."[40] The museum was immensely popular with the people of Edmonton, evidence to Brown that "[i]n these mad, dollar-chasing days, it has been very easy to forget the fact that Edmonton and the country

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[37] N. Mirzoeff (Ed), *The visual culture reader*, London, 2002
[38] Edwards and Hart, *Photographs Objects Histories: On the Materiality of Images*
[39] E. Edwards, Thinking photography beyond the visual, in: J. Long, A. Noble,E. Welch (Eds), *Photography: theoretical snapshots*, New York, 2009 , 33.
[40] PAA, Ernest Brown fonds, PR1965.124, file 159a, Card Letter Advertisements of Museum Exhibits, 1936.

around it has a past." Inside, the idea of 'experiencing' this past through pictures was a defining philosophy of the project. Featuring 2,000 original photographs interspersed with museum specimens, this was an experiential museum of images and objects that "could be touched and smelled as well as seen."[41] (Fig. 36) Aligning the photographs with other objects reflected Brown's understanding of the material properties of the image as a storage device for memory. Already in the 1920s he was articulating the utility of pictures in recording the 'collective memory of mankind,' but over time he expanded this insight by gathering individual 'picture stories' from inhabitants of Edmonton. Anyone willing to tell a story about one of his images was invited to have that story, their history, indexed to the negative and entered into the archive.

Brown thought of this work as the gathering of facts, which were then linked to or placed in the images almost as if they were containers. He believed that the storied pictures possessed 'object teaching' lessons for the children of Edmonton.[42] Although he drew upon the intellectual discourse of visual instruction and progressive reform in schools, he would eventually come to believe that the idea of using pictures to deliver these object lessons and instill proper thinking in children was "MY idea," even taking the progressive Canadian teaching maven Donalda Dickie to task for theft of his concepts.[43] In the Pioneer Days Museum such ideas were employed and experimented with through different forms of display. The museum sometimes became a lecture hall or a stage for 'tableaux vivants' dressed in period costumes in keeping with Western showcases of ethnographic spectacle – with live performers against a stage

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[41] Sutherland, The muster roll , 19.
[42] PAA, Ernest Brown fonds, PR1965.124, file 34a, Personal Correspondence, "Dear Old Timer" 5 October 1927.
[43] PAA, Ernest Brown fonds, PR1965.124, file 34a, "Dr. Donalda Dickie Leads Important Research for Primary School Reform," *Edmonton Journal* 9 May 1936.

Fig. 36. The Pioneer Days Exhibition at Haddon Hall

Source: Provincial Archives of Alberta, Ernest Brown fonds, PR 1965.124, file: 0172B-b-c.

of photographs, acts and the study of objects went hand in hand. At these shows, visitors to the museum did more than gaze at actors, photographs and dioramas; they learned ways to read artefacts and images for ethnographic qualities and connected real life experience with the seemingly static image.[44] Children were especially encouraged to visit the exhibits where they could see pictures and touch objects related to ideas found in the chapters of their school

[44] S. Pratt, Objects, performance and ethnographic spectacle, *Interventions: International Journal of Postcolonial Studies* 15 (2013) 272-285

textbooks: the earth, the ascent of man, transportation, the founders of Edmonton, the beginning of taxation, the 'stories' of coal, light, gold, buffalo. To contextualize the images, Brown shared his view of photography as a record keeper, offering supporting exhibits such as 'the photographic action of light on iron,' 'teaching picture making in four easy stages' and the 'story of light.'[45] Teachers hoping to offer their children an opportunity for first hand 'nature study' would bring them to the exhibit and let them wander through the aisles or invite them into the 'child's university' for 'junior technical skills.'[46] By far the most popular displays were of Native life and the 'Indian curios room,' which Brown lamented were the heaviest hit by the high rate of theft by children at the museum. In all of these spaces the object lessons presented by the museum offered teachers a chance to demonstrate to students the development of local trades and industries. Global geology could be introduced in 'teaching geography' and 'the earth', while the history and diversity of the world's peoples were explained in 'the 'ascent of man' and 'the races of mankind;' the origins of the West came in the 'missionaries and explorers' exhibit, while Edmonton's object lesson in good citizenship was explained through the development of public schooling; finally, 'the beginning of taxation' explained how the city went "from a farm at $2.00 a year to a city of $3,000,000 a year to pay interest to bondholders."[47] Brown's Pioneer Days Museum presented the people of Edmonton with two social uses of images: as social objects containing their collective memory, and as record keepers charting their stages of development.

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[45] PAA, Ernest Brown fonds, PR1965.124, file 145a.iii, Alberta Government Purchase of Photo Collection.
[46] PAA, Ernest Brown fonds, PR1965.124, file 156a, Correspondence re: 'Pioneer Days' museum, 1939-41, 1952.
[47] PAA, Ernest Brown fonds, PR1965.124, file 145a.iii, Alberta Government Purchase of Photo Collection.

Fig. 37. Brown's Pioneer Days display on transportation

Like many twentieth-century exhibitions, the Pioneer Days Museum narrated progress by dividing the modern and progressive from that which stands outside modernity, like the 'story of the Maya' or the Indian displays portraying indigenous people as part of the bygone past.[48]

Source: Provincial Archives of Alberta, Ernest Brown fonds, PR 1965.124, file: 0172B-h.

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[48] In his *Birth of the Museum*, Tony Bennett identifies how late nineteenth century museums became key instrument of legitimating and maintaining colonial power because they were able to offer a tangible visualization of history as progress and evolution together: European societies progress towards modernity and civilization was indicated by the failure of others to reach that point. The spatialization of many museum displays performed this logic – by ordering the progress of movement through the museum, directing flow from exhibit to exhibit, the visitor's gaze witnessed disappearance of competing civilizations until only the Europeans remained at the terminus. By spatializing the past, giving it sequence, form, and lineage, and inviting the viewer to think of themselves as both the subject and object of knowledge, museum displays delivered the sense of looking backward at oneself in time at a well-ordered and progressive trajectory of development. B. Graham, G. Ahsworth and J. E. Tunbridge, The uses and abuses of heritage, in: G. Corsane (Ed), *Heritage, Museums, and Galleries: An Introductory Reader*, New York, 2005; Bennett, *The Birth of the Museum*; H. Gagnon, The Natural History Society of Montreal's museum and the socio-economic significance of museums in 19th-century Canada, *Scientia Canadensis: Canadian Journal of the History of Science, Technology and Medicine* 2 (1994) 103-135 , 104.

5.1.3 'The Birth of the West' Album and Teaching Pictures

Brown's museum offered spatial histories to the people of Edmonton. In the story told at Pioneer Days, Edmonton drove movement into modernity, playing a role that championed regional independence and reflected the powerful role of cities in history. Recent work now highlights the important role of this kind of 'municipal colonialism' in the transformation and resettlement of the new world.[49] In a close look at Alberta, Dwayne Trevor Donald has shown how the city once known in Cree as *Amiskwaciy* or 'beaver hills house,' became Edmonton. He argues that civic groups like the Edmonton Settlers' Rights Movement, led by Frank Oliver and other contemporaries of Brown, managed to oppose the creation of Papaschase Indian Reserve Number 136 immediately adjacent to the town of Edmonton.[50] Between the city and the museum, these colonial remakings of space were justified and reinforced.

Focusing attention on the connections between the city and the museum calls attention to the spatial history of colonial ideas. In early Alberta, the Pioneer Days museum was a nexus where social information about the region's history and geography was produced, exchanged and acquired. (Fig. 37) David Livingstone draws our attention to similar locations when he asserts that "[p]lace is essential to the *generation* of knowledge. It is no less significant in its *consumption.*"[51] Livingstone is one of a growing number of scholars reflecting on this question.

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[49] V. Freeman, 'Toronto has no history!' : indigeneity, settler colonialism, and historical memory in Canada's largest city, *Urban History Review* 38 (2010) 21-35; J. Stanger-Ross, Municipal colonialism in Vancouver: city planning and the conflict over indian reserves, 1928-1950s, *Canadian Historical Review* 89 (2008) 541-580; J. Barman, Erasing indigenous indigeneity in Vancouver, *BC Studies* 115 (2007) 3-30; P. Edmonds, From bedlam to incorporation: whiteness and the racialization of colonial urban space in Victoria, British Columbia and Melbourne, Victoria, 1840s-1880s, in: K. Darian-Smith (Ed), *Exploring the British World: Identity, Cultural Production, Institutions*, Melbourne, 2004 .

[50] D. T. Donald, Edmonton pentimento: re-reading history in the case of the Papaschase Cree, *Journal of the Canadian Association for Curriculum Studies* 2 (2004) 21-54 .

[51] Livingstone, *Putting Science in its Place* , 11.

What might be termed the 'historical geography of knowledge' sheds light on how institutions such as museums, public and civic buildings, laboratories, and archives participate in the authoring of scientific and cultural truths. Rather than study places alone, this new turn in historical geography suggests we can study 'knowledge on the move,' insisting that the authority of circulating texts and information is derived from their origins. Thus the kinds of objects thought to carry knowledge, and the bodies required to transport it through space, also matter.[52] Indeed, the problem of how to move knowledge *out* of his museum and around the city and province was a central problem for Brown. To achieve widespread circulation of his object lessons about the history and geography of the place, he would again draw from progressive education and the materiality of images, transforming the pictures in his archive into a new format intended to deliver 'experiential' information.

Not long after his arrival in Edmonton, Brown began working on ways to make a living out of distributing knowledge. By 1907 he was already well known as a lecturer-storyteller who made good use of the magic lantern. In the 1920s he earned praise from the Alberta Teachers' Association for taking slides into rural districts to teach children unable to visit the city displays.[53] It was, though through the good years of the 'Pioneer Days' museum, in the 1930s that his most ambitious plan to circulate knowledge came about. This produced 'The Birth of the West' albums of teaching pictures. This fitting title, according to Brown, "suggest[ed] the act of coming into life, the origin, or the beginning." He planned a series of photographic albums able to detail the great history of the West, a masterpiece boasting 50,000 images sorted into 30

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[52] S. Naylor, Historical geography: knowledge, in place and on the move, *Progress in Human Geography* 29 (2005) 626-634 .
[53] J. Miller, "Educational exhibition and museum," *The Alberta Teachers' Association Magazine* (December 1936 , 27.

Fig. 38. Window display advertising 'Birth of the West'

Source: Provincial Archives of Alberta, Ernest Brown fonds, PR1965.124, file 200, Birth of the West Album.

different classifications with thousands of subjects. (Fig. 38) These albums would represent the great achievement that was Western Canada by offering a 'deep visual history' of the formation of the region. In the beginning was "I. Western Canada Under Water" when at "certain times the sea from the West covered British Columbia and our Province of Alberta."[54] The next album was to be the 'Coming of the Aboriginal'. This was to be followed by albums treating the arrival of fur traders, their routes, the whisky forts, ranching, and the CPR. Next came Indian portraits,

[54] PAA, Ernest Brown fonds, PR1965.124, file 219a, Birth of the West Narrative.

ceremonies, scenes, then the series moved on to Eskimo, buffalo, transportation, and album 'XVII. First, or Early Things." Fourteen more volumes were envisaged for a planned 31 album set, culminating with a penultimate volume on 'Sir John Franklin' and a final 'Pioneer Days' Album, but these were never completed.

Like most of his endeavours, 'The Birth of the West' albums failed to achieve the widespread popularity Brown imagined for them. Yet, they remain important for a number of reasons, primarily because Brown's construction of the sets transformed the spaces of his archive, and this affected, in turn, later visual representations of the people and landscapes of Western Canada. Moreover, analyzing the albums reveals Brown's understanding of the uses of photographs in transmitting knowledge and telling spatial histories. Although the subjects might seem haphazardly arranged to present-day viewers, their organization was underpinned by Brown's conviction that 'visualization' was the key to understanding, which he called "the mother of thought …[that] controls the destiny of men."[55] Proving that his images worked was integral to establishing the reliability of the method, and thus he kept a running file on children's reactions to images in the Pioneer Museum, elicited in essays requested by their teachers. One of Brown's favourites was Billy Masters' account stating "[i]t was all very interesting history period during which we learned facts without having to try to." Other responses he kept included Margaret Allen's reaction that "I took one glance around and knew that my imaginations would very soon take me back to early pioneer days" and Betty Smith's statement that the small wood cabin exhibit "brought back to me memories of the many hardships that

[55] PAA, Ernest Brown fonds, PR1965.124, file 200, Scrapbook 'Birth of the West' Teaching Pictures.

Fig. 39. 'Old and New Seats of Government'

Source: Provincial Archives of Alberta, Ernest Brown fonds, PR1965.124, file 200, Birth of the West Album.

pioneers must have gone through."[56] These demonstrated the efficacy of visual learning. Establishing mental equivalencies in the minds of the children between how they felt and what they were witnessing was a marker of success used both to promote the material and develop further ideas.

In his teaching albums, the experiential knowledge in pictures mattered more than anything else, and Brown used concepts of space and time in his pictures to generate these

[56] PAA, Ernest Brown fonds, PR1965.124, file 158c, Appreciation of the Pioneer Days Exhibit, cont.

effects. As an example, he felt that his images could help distinguish between the Aboriginal past and the progressive future that awaited Edmonton and the West. He was fascinated by the ability of images to show these contrasts, which he called upon in "Old and New Seats of Government" the keystone image in his album section on "Edmonton from Fort to Capital.' (Fig. 39) Portraying the powerful dominance of the city over Native space, the image celebrated the settlement of the West and the change from Indigenous means of transportation to modern rail lines.

In his teaching albums, like his earlier efforts in 'Time Marches On' and 'The Pioneers Dream', divisions between White and Native were used to connote the difference between present and past. (Fig. 34 & Fig. 35) In this manner, Brown also attempted to align the pioneer progress narrative with the rhetoric of race and civilization. He promised that 'The Birth of the West' album contained 'authentic' Native people: "practically all the Indians of the Western part of Canada… and we wish to emphasize that these pictures were taken 40 − 50 years ago, and do not show the 'mixed' type of later years."[57] In Brown's version of the story of Alberta, 'pure' Native people existed in a Romantic past before the 'fall' that produced the 'mixed' Natives of his time. He also re-arranged his images to invent such differences between purity and mixture. His work on a photograph taken by the New York photographer Oliver Buell while touring the Northwest on the eve of the North-West Rebellion serves as an example. Buell took a picture of the Plains Cree leader Big Bear and his son trading at Fort Pitt. Big Bear, or Mistahi maskwa, was already known to Europeans when the image was taken because of his refusal to accede to the Government of Canada's treaty process in the West, and his insistence that the members of

[57] PAA, Ernest Brown fonds, PR1965.124, file 200, Scrapbook 'Birth of the West' Teaching Pictures.

the Cree Confederacy be given contiguous reserves. The leader's historical and regional importance probably led Brown to include a number of Buell's wide-frame images in his 'The Birth of the West' books. (Fig. 40) However, Brown never showed the entire shot: by cropping the left of the image, the chief appeared offset to a group of white European onlookers. Cropping the right of Buell's photograph recontextualized Big Bear by portraying him alongside other Plains Cree leaders. (Fig. 42) At other times Big Bear was "transported" out of the HBC post at Fort Pitt, to be image-ined in front of prairie teepees. (Fig. 43) Brown never showed Buell's image in its entirety, but adjusted Big Bear's interpretive salience by altering the image, making him 'the other' in a primarily European scene (Fig. 41); a member of a group of Native men (Fig. 42) and a "primitive" in front of traditional tepees (Fig. 43).[58] By "placing" Big Bear's in these different spaces, Brown gave several new meanings to his situation.

Brown's ultimate hope was that 'The Birth of the West' albums would be used in Western Canadian schools much as the popular Keystone '600' Set was in the United States. Into the 1920s many Canadian jurisdictions provided little specific direction in public teaching, and generally preferred to adapt both methods and subject matter from the US and Britain. However by the 1930s progressivism was changing the landscape of education. Brown was attentive to these changes, listening when teachers argued that children were forced to learn too many 'abstract things' and too little concrete material fact, paying attention to complaints that

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[58] Big Bear was, in fact, both reviled and respected by non-Native Canadians at the time: while he was blamed by many for the Cree Warrior Society's killing of settlers at Frog Lake and setting off the North-West Rebellion, he was also famous for cautioning the Cree and other Native groups to stay out of the 'white' conflict between the English Canadians and the French Metis. J. Reid, *Louis Riel and the Creation of Modern Canada: Mythic Discourse and the Postcolonial State,* Winnipeg, 2012; R. Wiebe, *Extraordinary Canadians: Big Bear,* Toronto, 2008 .

Fig. 40. 'Mistahi maskwa, a Plains Cree chief, trading'

Photograph by O.B. Buell, 1884. From left to right: Four Sky Thunder, Okemow Peeayis, Matoose, Napasis, Mistahi maskwa, Otto Dufresne, Louis Goulet, Stanley Simpson, Mr. Rowley, Alex McDonald, Captaub. R.B. Sledge, Mr. Edmund, and Henry Dufrain

Source: Library and Archives Canada, C-008183.

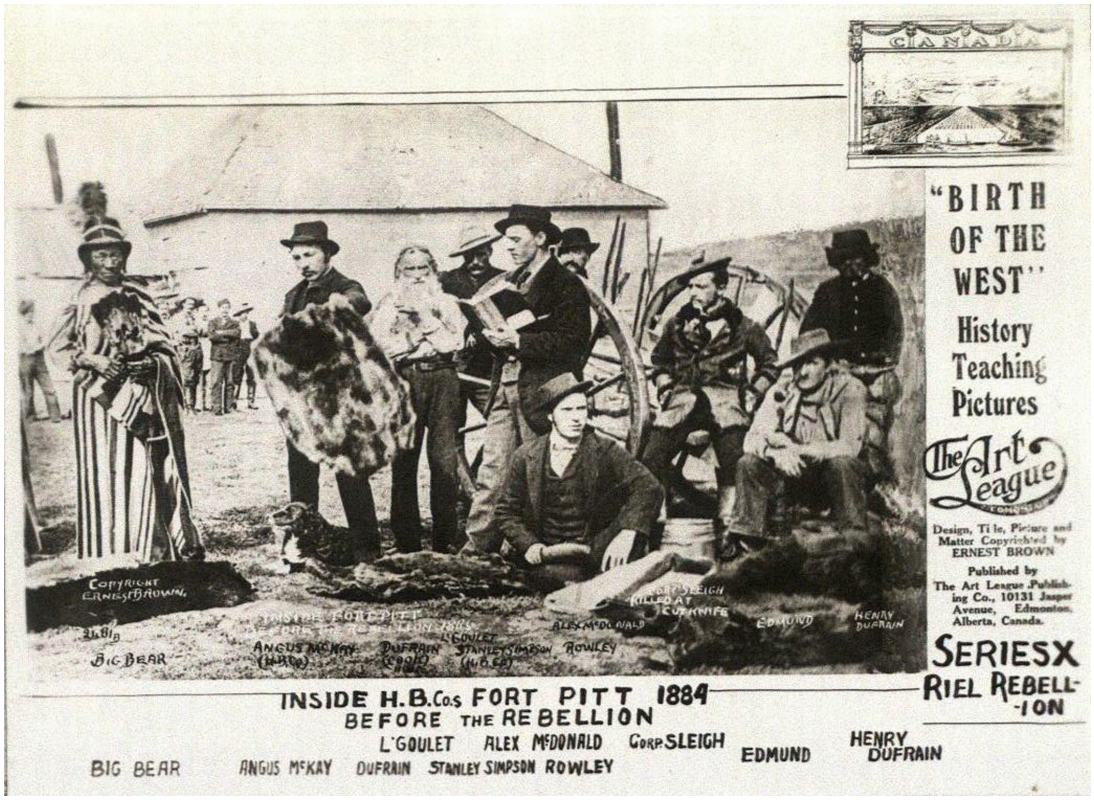

Fig. 41. Big Bear, 'Inside H.B.Cos Fort Pitt 1884 Before the Rebellion' in 'Birth of the West' Series X: Riel Rebellion

Source: Provincial Archives of Alberta, Ernest Brown fonds, PR 1965.124, file 200, 'Birth of the West 'Album.

Fig. 42. Big Bear in 'Cree Indians Trading at H.B.Co's Fort Pitt 1884' in 'Birth of the West' Series X: Riel Rebellion

Source: Provincial Archives of Alberta, Ernest Brown fonds, PR 1965.124, file 200, 'Birth of the West 'Album.

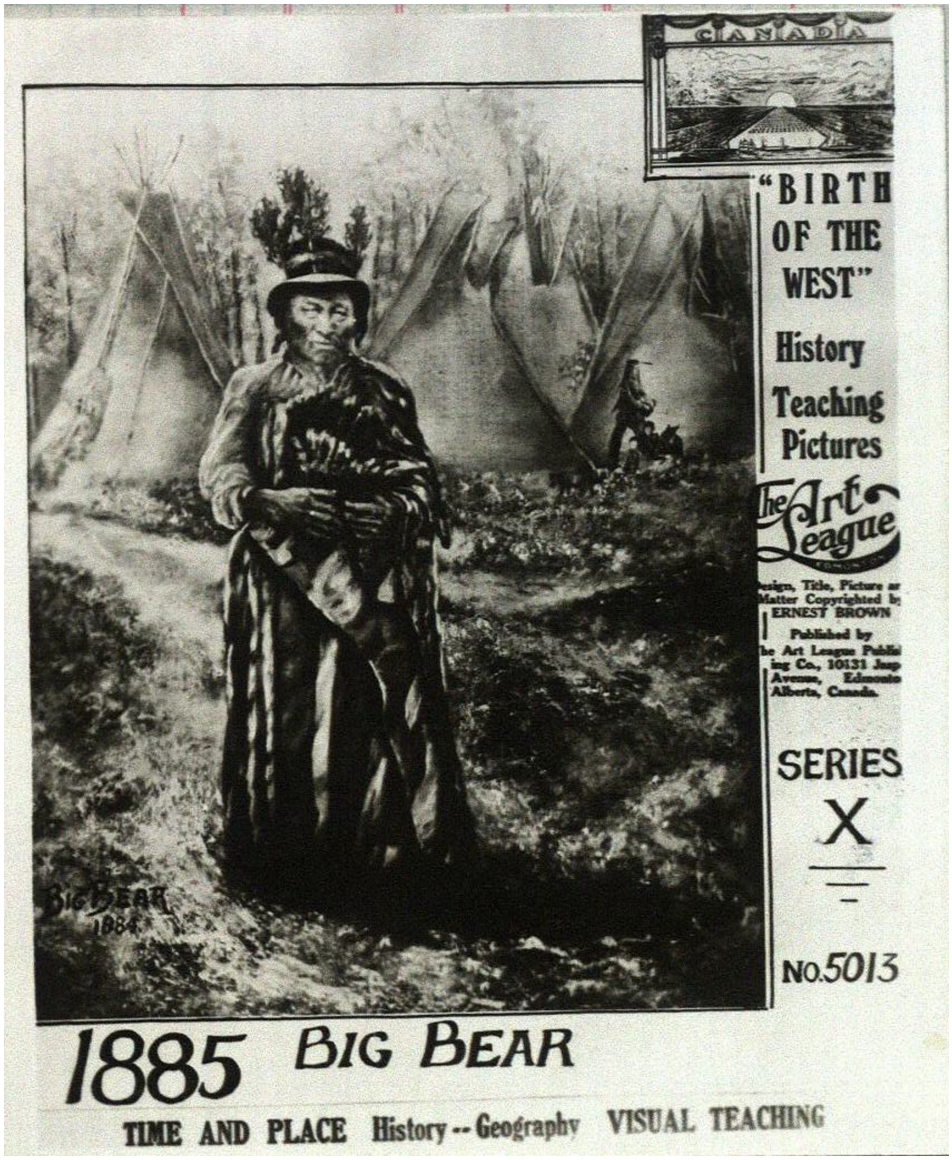

Fig. 43. Big Bear in '1885 Big Bear' in 'Birth of the West' Series X: Riel Rebellion

Source: Provincial Archives of Alberta, Ernest Brown fonds, PR 1965.124, file 200, 'Birth of the West 'Album.

textbooks in Canada contained too many dry facts enumerating the country.[59] He agreed with reports from the Edmonton Technical Teachers' Association, which suggested that provincial schools were 'woefully behind' in their use of visual aids, (which they called "this modern medium of instruction"). And, he rejoiced when the province's Deputy Minister of Education, Fred McNally, announced that 'visual instruction' would shortly be entering the Alberta curriculum. Brown was ready. In his photo archive he proclaimed: "[w]e have something which if properly put across will create citizenship, interest, activity, and development among our young people never before experienced."[60] He already believed that with "such a large number of children of foreign parentage in our schools, it is necessary to convey to them a truthful picture of the beginnings of our country," but the apparent turn to visual instruction animated him.[61] Thus in the late 1930s he began developing what he initially called his 'History Teaching Pictures' series. An outgrowth of the 'Birth of the West' albums using many of the same images, this would be a set of visual instruction lantern slides and actual photographs detailing different parts of the earth. The slides were geographically-based, promising "whether on land

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[59] *An Easy and Concise Introduction to Modern Geography: Containing an Enlarged Account of the British North American Colonies, particularly Lower and Upper Canada, for the use of Canadian Schools,* Quebec, 1841; Sutton, *The Student's Guide*; Ewing, *Canadian School Geography*; J. G. Hodgins, *Easy Lessons in General Geography, with Maps and Illustrations: Being Introductory to 'Lovell's General Geography',* Montreal, 1863; J. G. Manley, *Canada: Its Geography, Scenery, Produce, Populations, Institutions, and Condition,* London, 1869; J. G. Hodgins, *Easy Lessons in General Geography, with Maps and Illustrations: Being Introductory to 'Lovell's General Geography',* Montreal, 1873; *Lovell's History of the Dominion of Canada, and Other Parts of British America. Illustrated by Numerous Engravings,* Montreal, 1876; *Lovell's First Steps in General Geography: with Maps and Illustrations; being Introductory to Lovell's 'Easy Lessons in General Geography',* Montreal, 1877; *Lovell's Intermediate Geography*; *Lovell's Advanced Geography,* Montreal, 1880; Ontario Department of Education, *Modern School Geography and Atlas*; *New Canadian Geography* .

[60] PAA, Ernest Brown fonds, PR1965.124, file 46, Personal Scrapbook of Various Items, "Visual Aid is Needed in Schools," *Edmonton Bulletin* 7 December 1934; "New Studies Will Break Ground," *Edmonton Bulletin* 8 November 1935.

[61] PAA, Ernest Brown fonds, PR1965.124, file 160a, Letters and Advertising of Brown's Pioneer Days Museum, 1933.

or sea, in the air or down in the depth, we will accompany you on one of our 'Little Journeys'"[62] Brown set to transforming his archive yet again.

The little journeys were spatial histories: travelling objects designed to explain place and space. They were also knowledge objects wherein Brown could explore his ideas about the narrative power of images, the transmission of knowledge, and photographs as memory devices. In one example the movement of the North-West Mounted Police in the Yukon is shown in an image of the march overland from Aklavik to Dawson. The framing both fixes and transforms the image into an assemblage of information. (Fig. 44) Besides the date of the event, 1911, a set of maps explains both the location of the image (Lat. 68N. Lon 135W) and traces the actual route the Mounties followed. Floating in the upper margins are pictures of the bust of NWMP Commissioner Aylesworth Bowen Perry and Prime Minister Robert Borden. A small slide of Britannia with her trident and shield locates this moment in the history of the British Empire, and forms no small salute to the Canadian government's assertion of sovereignty in the Western Arctic. Commercial branding in the form of a panel announcing 'The Birth of the West' teaching series, runs up the side. The reverse of the image carries Brown's 'picture story,' informing children that this is the 'Lost Patrol' so named because four Mounties became disoriented around Fort MacPherson and were eventually forced to eat their sled dogs to survive. For effect (or "to drive home the forbidding remoteness of this setting") Brown's narration emphasized the "bleak treeless plateaus' where the cold temperatures make "icicles hang from moustache."

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[62] PAA, Ernest Brown fonds, PR1965.124, file 46, Personal Scrapbook of Various Items, "Little Journeys."

Fig. 44. Picture B in 'Birth of the West' Series VIII: Mounted Police

Source: Provincial Archives of Alberta, Ernest Brown fonds, PR 1965.124, file 200, 'Birth of the West 'Album.

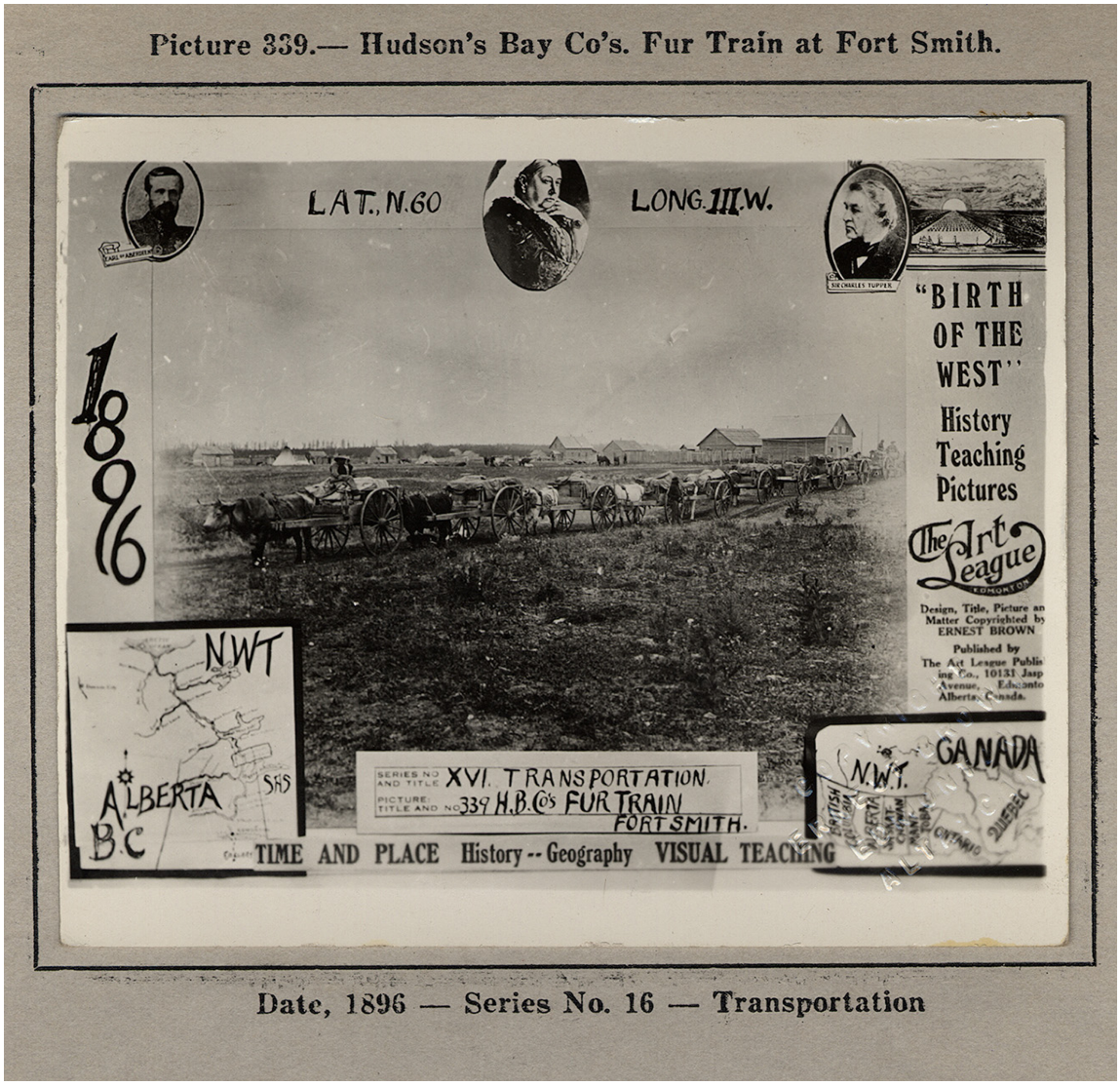

Fig. 45. A finished teaching picture

Source: Provincial Archives of Alberta, Ernest Brown fonds, PR 1965.124, file 199, Teaching Pictures.

In the 'little journeys' Brown combined ideas about visual instruction with new methods of teaching. He clearly intended children to interact with the pictures: he knew progressive era mantras proclaiming the young "are likely to do best by learning what they are interested in," so each picture story emphasized the ruggedness of the NWMP, the savagery of the Natives, or the

achievements of progress. The idea was unequivocal: "Pictures represents (sic) one of the greatest potential educational forces on Earth today; and are destined to become probably the GREATEST OF ALL TEACHERS."[63] Once the child had seen a picture and heard the picture story, the teacher was to be ready with a series of questions. The interrogation was along the lines of the object or nature study model that relied on the primary observation of the child. An image of the Hudson's Bay Company fur train at Fort Smith begins with simple questions like "What does the picture represent?, and "What year?" before asking who's diamond jubilee took place immediately after, though, with Victoria herself looming in the sky, flanked by her loyal servants Governor General the Earl of Aberdeen and Prime Minister Charles Tupper, the answer was certain. The real purposes, however, were to establish the value inherent in the exchange of pelts, and the geography of the river: "Why do the Natives speak of going DOWN the Mackenzie or DOWN north?"[64]

Brown's teaching pictures represented the culmination of his theories about the visualization of history and geography. The large series of them he developed, described as 'TIME AND PLACE History – Geography VISUAL TEACHING' slides, provided a spatial narration of subjects like the RNWMP, the story of the fur trade, the great artists, Native peoples of the West, the growth of Edmonton, and many others. These stories were told in images and located in the maps and coordinates that Brown provided for each. In attempting to visualize history what Brown aimed at was essentially a rudimentary geographic information system, where positions like coordinates and locations on the map were coded to images and stories. As in all his uses of photographs the act of holding the image and then turning it over to reveal the

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[63] PAA, file 159b, Card Letter Advertisements of Museum exhibits, 1936.
[64] PAA, Ernest Brown fonds, PR1965.124, file 150, Written Introductions to Historical Pictures.

story behind it was more important than the image itself. . Seeing photographs, touching them, visiting the museum, and listening to the object lesson was required for understanding the wider story of Western Canada told by Brown's archive. By insisting that *where* and *when* an image was taken were more important to understanding it than the representation, it offered the teaching picture series reveal what lies hidden by the present arrangement of the Brown collection in PAA. The spatial history told by each image determined its placement in the series. However, like his earlier HBC and 'The Birth of the West' albums, his photography studio, the Brown Block on Jasper Avenue, and his Pioneer Museum, the teaching pictures failed to meet the hopes placed on them, so they were folded back into the archive.

5.2 Time and Place – Visual History

Brown clearly thought of his images as unique *objects* for delivering spatial history rather than as illustrative representations of Western-ness. They were, first, devices that contained tales, stored memory, provided lessons and most importantly, archived history and geography for local people. Thinking about similar objects, Veronica della Dora has made an interesting observation in her study of landscape and materiality. According to her, geographers have made too much of 'representation' in thinking about landscapes as cultural texts or as ways of seeing. She notes that it is also important to consider the material forms in which these 'landscapes' are often vested. Paying attention to how people read landscapes differently when they appear in paintings versus photographs, cartes-des-visites or magazine articles, or computers versus television screens, may tell us how the meanings that surround the material medium seep into and 'enchant' the landscape image. For della Dora, the most important insight that comes from paying attention to the material container is that it highlights the way landscapes travel. She

suggests we use the term 'landscape-objects' to describe how such artifacts become "primary currencies for the circulation of place through space and time."[65]

della Dora's claim that materiality matters as much as representation is a useful way of framing Ernest Brown's photography work as spatial history. It provides a means of reflecting on how Brown thought of his images as objects and tried to 'enchant' them with meanings and experiential qualities. Moreover, it tells us how they travelled, showing how the changing purposes and use of images over time are connected to whether they are primarily seen as representations or as material. At times, Brown's images were sought out for their representational qualities alone. Where they have appeared in dozens of books dealing with Aboriginal people, Canadian history, or the geography of Western Canada, what they say as images are foregrounded by the many different meanings and uses attached to them.[66] In the 1910s and 1920s, Brown's images of gold washing and wheat farming spoke to the promise of industry and development in Western Canada.[67] In the 1930s the HBC used his images as publicity to drum up the romance of the fur trade.[68] After Brown's death, his images demonstrated the timelessness of plains Aboriginal people in history and anthropology books. Though few of the photographs were taken by Brown himself, his scratchy copyright is always visible along the bottom of the image. As representations, the spatial history of his pictures

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[65] V. della Dora, Travelling landscape-objects, *Progress in Human Geography* 33 (2009) 334-354 , 350.
[66] c.f. C. Mair, *Through the Mackenzie Basin: A Narrative of the Athabasca and Peace River Treaty Expedition of 1899,* Toronto, 1908; A. C. Laut and J. G. Hagey, *Pioneers of the Pacific coast: a chronicle of sea rovers and fur hunters,* Toronto, 1915; W. Pike, *The Barren Ground of Northern Canada,* New York, 1917; L. J. Burpee, *The Search for the Western Sea: The Story of the Exploration of North-Western America. Volume I & II,* Toronto, 1935 [1908]; A. W. Cashman, *The Edmonton Story: The Life and Times of Edmonton, Alberta,* Edmonton, 1960; J. G. MacGregor, *Edmonton Trader: The Story of John A. McDougall,* Toronto, 1963; E. Stewart, *Down the Mackenzie and Up the Yukon in 1906,* Toronto, 1913
[67] M. Dyce, 'A Souvenir from the North': Images, Narratives, and Power in the Athabasca-Mackenzie River Basin, 1882-1914, Master's Thesis, Carleton University, 2006 .
[68] Dyce and Opp, Visualizing space, race, and history in the North .

images helped create a picture of the West in the larger story of Canada. However, to looking inside the archive Brown created, to read it 'along the grain,' is to see that the materiality of each image was a powerful factor in how they were able to make meaning.

Chapter 6: Spatial Histories of the Athabasca Landing Trail

6.1 'The Gateway to the Last Great West'

According to federal Railway Commissioner Frank Oliver writing in 1921, "The collapse of the boom in the spring of 1882, followed by the decision to change the route of the CPR from the Jasper to the Kicking Horse Pass, put Edmonton country, not on the side track but 200 miles from the track of progress." The decade that ensued before the completion of the Calgary and Edmonton Railway in 1891 entailed 'weary waiting' for progress and prosperity. But Oliver noted positively that "[w]hile the people of Edmonton firmly believed that 'everything comes to him who waits,' they also believed just as firmly that it comes much more quickly to him who 'hustles while he waits.'" In the 1890s the city shifted its metropolitan gaze from the south and east to face a new frontier in the north. Oliver's unpublished account of this transformation, 'The Founding of Edmonton,' aimed to explain the meaning of the city as *place*, but did so by telling a *spatial* story about its location, environment, and relationships with places nearby. As he explained "it was during these years that the Great North, the Mackenzie River Basin, was annexed to the trade territory of Edmonton."[1] Until the railway came, the city would soothe its transportation woes along the footpaths and riverways of the waning fur empire in the north, conquering the domain ruled by the Hudson's Bay Company and becoming the central distribution centre for the region. The city was changing, and it was doing so by changing its relationships with the space that surrounded it, by re-imagining the scale on which it operated, and by forcing the future of the city and the path of its progress northward and into new territory.

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[1] City of Edmonton Archives (CEA), Frank Oliver fonds, MS 56, file 2, Frank Oliver, 17 September 1921, "The Founding of Edmonton."

At the close of the nineteenth century Edmontonians firmly believed that the growth of their city demanded the creation of a new frontier, and they found it in farming, mining, and the fur trading routes of the north. A generation of Canadian historians used these economic factors to explain the patterned growth of similar western settlements through the Frontier and Metropolitan theses, claiming that centralizing cities grew in accordance with the limitations of their environments, forming commercial dependencies on the exploitation of resource peripheries.[2] Canadian regional geography and development theory continues to explain areal disparities using the centre-periphery model, but few early historians saw change as driven by economic logic alone.[3] As J.M.S. Careless once noted, frontier and metropolis are linked by both 'structure and perception' that characterised reciprocal flows between centres and margins.[4]

As Edmonton turned its metropolitan energy northward, other forces were reconfiguring the frontier geography the city sought to claim. The Hudson's Bay Company was busy decommissioning its east-west access routes into the rich fur country of the Mackenzie basin. In 1883, a 100-mile overland route was cut through the forest from the North Saskatchewan at Edmonton to the vast trading network of the Athabasca-Mackenzie system. Goods moving through Edmonton headed to St. Albert to climb up the Tawatinaw Creek before descending into

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[2] Innis, *The Fur Trade in Canada*; H. A. Innis, *Settlement and the Mining Frontier,* Toronto, 1936; G. F. G. Stanley, *Birth of Western Canada,* London, 1936; Creighton, *The Commercial Empire*; A. S. Morton, *A History of the Canadian West to 1870-71,* London, 1939; G. F. G. Stanley, Western Canada and the frontier thesis, *Report of the Annual Meeting of the Canadian Historical Association* 19 (1940) 105-117; A. R. M. Lower, *Colony to Nation,* Toronto, 1946; M. Zaslow, The frontier hypothesis in recent historiography, *Canadian Historical Review* 29 (1948) 153-167; D. Creighton, *Empire of the St. Lawrence,* Toronto, 1956.

[3] W. Clement and G. Williams, *The New Canadian Political Economy,* Montreal, 1989; K. Coates, *The Forgotten North: A History of Canada's Provincial Norths,* Toronto, 1992; A. M. Gunn, *Heartland and Hinterland: A Regional Geography of Canada,* Scarborough, ON, 1998; P. R. Mulvihill, D. C. Baker and W. R. Morrison, A conceptual framework for environmental history in Canada's North, *Environmental History* 6 (2001) 611-626; G. Wynn, *Canada and Arctic North America: An Environmental History,* Santa Barbara, 2007.

[4] J. M. S. Careless, *Frontier and Metropolis: Regions, Cities, and Identities in Canada before 1914,* Toronto, 1989, 16; cf. Careless, Frontierism, metropolitanism, and Canadian history.

a broad valley full of poplars shading the turgid waters of the Athabasca River. Where the trail ended, access to the north began, and with the arrival of a river steamboat Athabasca Landing soon grew on the flat section of land used for a boat building yard, loading area, and depot for exchanging furs and provisions. Its proximity to the river seemed to give the new place meaning, and in promotional literature a providential origin story was imagined. "Nature has done for this place her best," the Athabasca Board of Trade boasted, and "we will continue the work."[5] With its own metropolitan sights on the Peace River country, Athabasca Landing began to model itself as 'The Gateway to the Last Great West' while boosters predicted that when the railway arrived, a large city would arise out of the "unlimited wealth of this vast north land accumulating for thousands of miles along the world's most fabulous natural transportation system to be let down in our little Burg Athabasca Landing, the true centre of the north; the Embryonic Babylon of the West."[6] By the 1890s, it seemed Athabasca was set to obscure the view from Edmonton. In the remaining years of the nineteenth century, as the muddy trail running between the two settlements was improved, alongside farms, stopping houses, and livery stables, two distinct stories also emerged—one at each end of the route. Edmonton and Athabasca Landing both understood themselves as gateways to somewhere else, as symbolic markers between north and south, as powerful centres to a sleeping hinterland.

This chapter operates in the space between Athabasca and Edmonton in the latter half of the twentieth century, when stories about the Landing Trail that once connected the two places were rediscovered and re-told by groups interested in public history. Focusing on Athabasca, I

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[5] Athabasca Archives (AA), 1985.42, Athabasca Board of Trade, 1 July 1912, "Gateway to the Great North Country."
[6] PAA, Town of Athabasca Landing, PR1998.0876, 28 November 1908, "The Northern Light, No.1 Vol.1."

analyze three modern origin stories of the trail performed as representations of the past and orientations in the present. Scholars have shown how the making of place often involves distinguishing one place from other places and the production of local identities through historical recreation.[7] On this basis I argue that through pageantry, re-enactments, and museums, people performed and memorialized place along the trail in spatial histories. The performances in Athabasca were broad in geographical scope, spreading south to Edmonton and into the fur country of the north. As such, commemoration was also a spatial practice of exchange, extending physically and mentally into the surrounding landscape, conveying and returning laden with historical value.

This chapter recounts three spatial histories—episodes where people told stories about origins using space, nature, and history to explain the proximate meaning of their towns—performed across three decades of commemoration. The first took place in 1961 when Athabascans rediscovered the river they believed to be their natural providence and staged a historical pageant celebrating the founding of the town. The second happened in 1967 in an effort to commemorate Canada's Centennial by re-enacting a Klondike gold rush-era stagecoach ride to Edmonton. A third occurred during the 1970s and 1980s when a private historical foundation from Edmonton aimed to commercialize the trail and turn the Athabasca region into an ecomuseum. One way of expressing why calling these 'spatial histories' is a useful concept is by adopting the language of French philosopher Henri Lefebvre.[8] In each, the idea of the trail served as *representational space* through manifestations of power relationships—either as an

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[7] Gordon, *Making Public Pasts*; A. Huyssen, *Present Pasts: Urban Palimpsests and the Politics of Memory,* Stanford, 2003; L. Gouriévidis, *The Dynamics of Heritage: History, Memory and the Highland Clearances,* Surrey, UK, 2010.
[8] H. Lefebvre, *The Production of Space,* Malden, 2004, 245.

access point to northern dominance, or a last reminder of southern control. As a conduit for transportation and communication it was summoned to deliver messages and give meaning between two places. To give these representations purchase, the material trail itself also served as a *space of representation*, across which historical producers from Edmonton and Athabasca recreated scenes of history, often reproducing the same frontier-metropolitan relationships of structure and perception that linked the settlements in the 1890s. But the rediscovered trail bore an unstable relation to the past, and as the original route was scoured for traces of history a new trail was produced and forced to bear the burden of representing the present.

Thinking with spatial history shows how the past is represented geographically. I therefore follow how 'archives of place' were given different material forms in different periods, similar to William J. Turkel's use of the term to explain the way human landscapes are interpreted for material traces of history.[9] This is not only an archival account of the rediscovery of a trail, but an investigation into the way archival information about the trail has been gathered and stored, and the way the trail itself required that different types of archives emerge. In the three sections of this chapter, each commemoration of the trail also produces a unique kind of archive, because each began with a different understanding of what constitutes historical representation. I then link these formations of representational spaces and spaces of representation, of environment and knowledge, that govern past and present into a spatial history of the origin stories of these two places.

Pioneer origin stories are both unique and ubiquitous. American historian David Nye claims that similar narratives are found across the continent, posing conquest over nature as a

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[9] Turkel, *The archive of place*.

moral encounter explaining progress.[10] While Athabascans explained their river and the natural environment as nurturing and providential, Edmonton's river, the North Saskatchewan, became a set-piece dominated by technology for the crowning achievement of the city: "IN 1902 THE RIVER HAD BEEN BRIDGED and railway connection was made with the town on the north side. In 1905 the dreams of the pioneers of Edmonton were realized by the arrival of a train direct from Winnipeg … and by the establishment of Edmonton as the Capital of the newly established Province of Alberta."[11] When technology overcomes distance and environment, both progress itself and further expansion into new space seem justified. Oliver's 'Founding of Edmonton' emphasized this point, noting how the railways now followed the same footpaths pioneers like him travelled to settle the West during the 1870s. These memories tell a story about nature, but they also reveal a transformation wherein celebrating the ceaseless march of progress at the end of the nineteenth century was succeeded in the early twentieth by a new sentiment, the longing for a simpler pioneer past. Here, historian David Wrobel finds a link between the excitement of booster literature and the tide of pioneer reminiscences lamenting the closure of the frontier. Both, he claims, "were imaginative efforts to bring place into existence or to hold on to earlier incarnations of places that had since changed."[12] In this view, different expressions of hope and lament are subtle variations on a larger theme of place-making through articulations of past and future. A recent collection by John Walsh and James Opp suggests accounting for these non-linear inscriptions of history by investigating not only how places are remembered, but

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[10] D. Nye, Technology, nature, and American origin stories, *Environmental History* 8 (2003) http://www.historycooperative.org/journals/eh/8.1/nye.html, 6.
[11] CEA, MS 56, file 2, Frank Oliver, 17 September 1921, "The Founding of Edmonton." Underscoring in original.
[12] D. M. Wrobel, *Promised Lands: Promotion, Memory, and the Creation of the American West,* Lawrence, 2002, 3.

how memory is placed.[13] Collectively, they help explain the transformation of the Northwest into a landscape full of symbols and stories of settler dominance.[14]

Scholars of place and memory have had less to say about the uneven geography between central and marginal places in western Canada. It is worthwhile to bring them into conversation with earlier thinkers of spatial history in Canada. Harold Innis's famous work showed how resource distribution and environmental conditions that facilitated trade networks could help explain the political evolution of the state. His claim that Canada "emerged not in spite of geography but because of it" could apply to the province of Alberta, where it would suggest the rectilinear shape the province took in 1905 reflected the strength of the north-south river exchange network beyond Edmonton.[15] Careless is also a valuable interlocutor to any valorization of the environmental patterns found in the frontier. His vision of nodal metropolitan centres shaping the destiny of regional outliers provides insight into the power of civic spirit to dominate geography. Together they provide a useful starting point because both studied the interactions of nature, power, and place, and because they demonstrate the adaptability of spatial thinking. Such thinking also recognizes that Nye can be correct in suggesting the way in which stories about 'nature' are told express and shape our relationship with material environments, just as Wrobel is correct that the pioneer myths complicate present and past, and Opp and Walsh are right to call for a dynamic account of *placing* and *remembering*. Here I contribute to this

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[13] J. Opp and J. C. Walsh (Eds), *Placing Memory and Remembering Place in Canada*, Vancouver, 2010, 8.
[14] S. Razack, *Race, Space, and the Law: Unmapping a White Settler Society,* Toronto, 2002; A. Baldwin, L. Cameron and A. Kobayashi (Eds), *Rethinking the Great White North: Race, Nature, and the Historical Geographies of Whiteness in Canada*, Vancouver, 2011. For an account of the transformation of the Athabaska District of northern Alberta, see K. M. Abel, *Drum Songs: Glimpses of Dene History,* Montreal, 1993; P. A. McCormack, *Fort Chipewyan and the Shaping of Canadian History, 1788-1920s: "We Like to Be Free in This Country",* Vancouver, 2010.
[15] Innis, *The Fur Trade in Canada*, 393.

discussion by proposing consideration for a spatial history, one that would account for what Careless also insisted we remember about communities in the West: our explanations must deal "with mutual relationships not separate existences."[16] This statement applies between settlements, but can be extended to mean between the present and the past. What emerges is a study of the mutual relations of place, nature, and memory along the trail that ran between Edmonton and Athabasca.

6.1.1 The Athabasca Story

'The Athabasca Story' was first performed in 1961 to celebrate the 50th anniversary of the town. A massive crowd lined the riverbanks to behold the drama of the small community's past. They had been led there by a long parade of Mounties, war veterans, farmers, can-can dancers, and townsfolk posing half-naked as Hollywood-style 'Indians' with long braids of hair. At the river the play began, with 350 locals in the procession becoming performers of their own past, singing and dancing to a score compared grandiosely to Tchaikovsky's 1812 Overture.[17] Through eleven scenes the crowd watched the town emerge in the fur trade years, boom in the Klondike Gold Rush, and join the world community in two world wars. The epic stage play, incorporating a 16mm film titled "Land of Athabasca," was commissioned by the Athabasca Jubilee Celebration Committee and written and directed by a regionally celebrated Edmonton playwright, John Harvard. His production resonated with pioneer idealism celebrating the

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[16] Careless, *Frontier and Metropolis*, 131. Another reader who takes Careless's spatial thought seriously and shows the value of working through his project is T. Binnema, 'A feudal chain of vassalage': limited identities in the Prairie West, 1870-1896, *Prairie Forum* 20 (1995) 1-18. For other studies of perception and region see: C. Desbiens, Producing North and South: a political geography of hydro development in Québec, *The Canadian Geographer / Le Géographe canadien* 48 (2004) 101-118; M. Massie, When you're not from the prairie: place history in the forest fringe of Saskatchewan, *Journal of Canadian Studies* 44 (2010) 171-192.

[17] AA, 1985.70, John Harvard, "The Athabasca Story."

importance of the town's founders, and made special note of the convergence of nature and space in the making of history.

Theatrical versions of small-town history are not unusual events, and have been well studied. Usually such commemorations present a linear interpretation of history and reflect a modern appreciation for pageantry aesthetics. Time flows sequentially and progressively as the achievements and splendour of the past are played out and 'relived' by actors, often seeking to convey a sense of authenticity rather then historical accuracy.[18] This was true of 'The Athabasca Story.' Each scene focused on a particular era or character. The play opened with the arrival of explorer David Thompson, dwelled on the HBC post in 1848, the missionaries establishing a church in the 1880s, and the arrival of the first settlers after the turn of the century. Each wave of new arrivals took their place alongside those who had depicted earlier episodes until at the end of the production a throng of historical eras stood singing arm in arm.

It is tempting to read all of this as easily decoded 'inventions of tradition'—powerful justifications of present politics and neo-colonial acts of dispossession, as a product of contemporary political or economic conflict, or as a post-modern pastiche associated with cultural logic of late capitalism.[19] But this misses the central point of 'The Athabasca Story,' which situated the town relative to its environment and emphasized its wider relations in the province. Such placing began with the setting of the production: "There will be no scenery,"

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[18] D. Lowenthal, *The Past is a Foreign Country,* New York, 1985; Graham, Ahsworth and Tunbridge, Heritage, museums, and galleries.
[19] E. J. Hobsbawn and T. O. Ranger, *The Invention of Tradition,* New York, 1983; McKay, *Quest of the Folk*; H. V. Nelles, *The Art of Nation-Building: Pageantry and Spectacle at Quebec's Tercentenary,* Toronto, 1999; E. Mackey, *The House of Difference: Cultural Politics and National Identity in Canada,* Toronto, 2002.

director Harvard explained, "nature here provides us with its own magnificence." [20] The environment gave essential meaning to the story, with the river itself narrating from off-stage. Personified in a deep baritone voice, the Athabasca River opened the play with a monologue that constituted the entire first scene, and spent the remainder of the production insisting settlers come north. The river also explained the didactic procession of scenes that constituted the play, claiming that it was for the benefit of the 'tomorrow faces' – the children of Athabasca – because "without awareness of history they cannot root." The chronological ordering of these lessons offered a spatial history to the children: rather than any special relationship with Alberta or the south, it was the river to the north that dictated imperatives for the town and gave them meaning. Harvard's introduction neatly overlooked Edmonton claiming, "from the kiss of that river was born the present Town of Athabasca."[21]

Although the play has nature give birth to Athabasca, Athabasca had to adjust nature to fit the play. To approximate a 'natural' stage and to create the riparian panorama that served as a backdrop for 'The Athabasca Story,' a section of land along the river was cleared and raised to level. This work completely covered the vestiges of a nineteenth-century boat works used by the HBC in the early stages of the town's history. Thus the landscape of the present was placed in a dialectical relationship with one from the past, at once remaking and representing it.[22] Burying the historic scow yard was regarded as a necessary act of creative destruction through which a version of nature could be incorporated into the play – historical reality was tied to remaking an

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[20] John Harvard quoted in G. Aalborg, "Nature backdrop to historic show," *Edmonton Journal* (Edmonton), 8 August 1967, 37.
[21] AA, 1985.70, John Harvard, "The Athabasca Story."
[22] D. E. Sopher, The landscape of home: myth, experience, social meaning, in: D. W. Meinig (Ed), *The Interpretation of Ordinary Landscapes*, New York, 1979.

Fig. 46. 'The Athabasca Story' at night, 1961

Source: "Athabasca Jubilee Celebration." Preece/Krawec collection. Athabasca Archives, Photograph 01175.

authentic wilderness panorama in order to the stage its conquest and subjection by progress.[23] Strolling through decaying Parisian arcades, the cultural theorist Walter Benjamin described similar moments as 'spectacles' of modernity, where the interaction of present and past was momentarily exposed and new landscapes emerged.[24] Indeed, even as Athabascans celebrated their past at the river, the 1950s and 1960s saw the demolition of a number of historic buildings including the telegraph office and the old HBC store. At the waterfront play, new spectacles of

[23] C. J. A. Mitchell and J. Vanderwerf, Creative destruction and trial by space in a historic Canadian village, *Geographical Review* 100 (2010) 356-374.
[24] Benjamin and Tiedemann, *The Arcades Project*.

place emerged from the theatrical staging, brought about through the narrowing of difference between the town's real past and its imaginary representation.[25] So the 'cavalcade of nations' saw the different historical groups called north by the Athabasca River dancing together to the music of Swan Lake, unfettered from their location in a linear past and alongside representatives of the thirty different ethnic groups living in the region in 1961. This performance promoted inclusivity and cultural diversity even as it marked on the insular seclusion of Athabasca as place.[26] For this to happen, human history had to be erased to represent nature and allow performers to rely on the natural space they occupied to channel meaning out of the experience. As Harvard explained to the cast, "History backdrops the actor; he must read it in the deep flowing brown giant at his back for this, and the audience facing him is both past and future."[27]

While the play folded present over past, reality into representation, and time through space, other aspects of 'The Athabasca Story' produced boundaries between authenticity and performance. One, dividing authentic history from the mythic past, was embodied by the presence of 'old timers' at the celebrations. Invariably men, 'old timers' were respected for their primary link to the past in a way that the broader mythology of the frontier did not seem to capture, the very term being introduced to the north west with the founding of the Northern Alberta Pioneers & Old Timer's Association in Edmonton during the 1880s. Ostensibly established to foster 'good relations' among the pioneers, the NAPOTA hoped to archive and make sense of the dramatic environmental, social and cultural changes taking place in the west.

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[25] M. Kurtz, Re-membering the town body: methodology and the work of local history, *Journal of Historical Geography* 28 (2002) 42-62.Also see V. R. Schwartz, Walter Benjamin for historians, *American Historical Review* 106 (2001) 1721-1743.
[26] S. D. Hoelscher, *Heritage on Stage: The Invention of Ethnic Place in America's Little Switzerland,* Madison, 1998.
[27] John Harvard quoted in Aalborg, "Nature backdrop to historic show," 37.

Having old timers at celebrations seemed to confirm that progress was in fact a good thing: alongside the actors in 'The Athabasca Story,' they embodied a tangible link to the past, presenting an authentic way of knowing that the stage was unable to. The most crowded area during the whole 1961 celebration was the newly opened community hall where visitors could view and handle hundreds of historical artefacts provided by the old timers.[28] Seeing and touching the real material traces of the past offered a different experience to the historic representations brought about through 'The Athabasca Story,' although the play itself was based on the documentary record.

The show was widely praised as a success, in part this certainly owed to the long planning process. To gather a record of the region's past, amateur historians from Athabasca travelled south to Edmonton and to other archives around the country, reconnecting the spatial networks that had initially established the town. The trail figured in their work as an entry point into those other archives, and the results of their endeavours (in the form of photocopies of materials held in other repositories dealing with the trail) eventually constituted the first archives in Athabasca. Among these efforts to retrace the tangible past were those of Dr. Edwin Kinney Wright, a physician who had lived in the Athabasca area since the 1930s. As part of the commemoration, he planned to make a book of the reminiscences of those who had heard the rolling parklands of the river country 'calling' them to head north and seek prosperity during the land rush into northern Alberta during the settlement period. Looking for former residents Wright placed newspaper ads in western dailies under the title 'Athabasca Calling.' His herald encouraged old timers to make "a valuable contribution by loaning or donating, snapshots,

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[28] J. Deakin, "Athabasca stages biggest birthday party," *Edmonton Journal* (Edmonton), 5 September 1961.

pictures, anecdotes, and actual experiences, humorous or otherwise, connected with the history of Athabasca Landing, the original Gateway to the North."[29]

Writing in 1961, however, Wright knew what those responding to the allure of the north at the turn of the century did not. The settlement boom that began in 1906 turned the village of 300 people into an incorporated town of 2,000 by the outbreak of World War I in 1914. But growth soon slowed; the frontier first receded and eventually broke. Athabasca's population plummeted to under 500 in the space of a year, and the women and men who had transformed a ramshackle fur depot into the 'gateway to the west' turned their backs on the place to establish new homes elsewhere. Over the winter of 1916 farmers lifted abandoned town houses onto runners and used horse teams to skid them out to farms in the rural areas as Athabasca became, in the words of one historian, "the last stop on a road to nowhere."[30] During the recession following the war, Alberta lost 10,767 farms totalling 1.65 million acres, and by the time Wright arrived in 1933 the settlement boom was long past, the Landing Trail was ploughed over and the nascent farms had reverted to grassland.[31] His solicitation for pioneer stories reflected less a personal past than it did the hope of the post-war period of the 1950s and 60s, when schooling and municipal government began centralizing in Athabasca, businesses started returning, the local population once again crested 2000, and as the town's fortunes were being hedged in timber and energy resources.[32]

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[29] AA, Dr. E.K. Wright Collection, 2004.34, Edwin Kinney Wright, "Athabasca Calling," 30 January 1961,
[30] D. Gregory, *Athabasca Landing: An Illustrated History,* Athabasca, 1986, 183.
[31] D. C. Jones, The Dance of the grizzly bear: boom to bust, 1912-13, in: M. Payne, D. Wetherell,C. Cavanaugh (Eds), *Alberta Formed - Alberta Transformed*, Edmonton and Calgary, 2006 381.
[32] Gregory, *Athabasca Landing*, 203.

In the end Wright accumulated letters and memorabilia from dozens of former Athabasca residents living elsewhere. Against the documentary record of the trail created by the early historical societies at their archive, he offered them the opportunity to articulate their own understanding of the history of Athabasca. Some people sent treasured heirlooms for the doctor to see, insisting they be returned in good care. Others sent along documents or artefacts under the impression that a museum or archives was in the works. This second version of the past was lost when in 1963 Wright died in a plane crash while on vacation in Japan, and the material he collected disappeared with him.

6.1.2 Klondike Kavalcade Karavan

While the population of Athabasca stabilized during the 1960s, the province continued to undergo major changes as urbanization shifted the rural-agricultural face of Alberta. To some extent, 'The Athabasca Story' was evidence of a new interest in the pioneer west appearing as Albertans were leaving farms and ranches for big houses and new opportunities offered by suburban life. John Herd Thompson has noted how the West's modernization corresponds historically with the emergence of mass consumer commemorative events such as Buffalo Days in Regina, the Louis Riel celebrations in Saskatoon, and the western makeover of the Calgary Stampede.[33] These focused on Western difference and sought to preserve at set of communal rural values that seemed threatened by the new pattern of Canada. Like the Landing route, a number of trails in the prairie and parkland were also invested with new regional importance. Such attempts to forge meaning from historic trails ranged from small hikes on old colonization routes to massive events like the Interprovincial Trail Ride arranged by the three Prairie

[33] J. H. Thompson, *Forging the Prairie West,* Don Mills, 1998, 176.

Provinces.[34] In Alberta, grants from the joint federal-provincial Centennial Committee went towards commemorating the original routes used by explorers and settlers, like the Edson Trail to Grand Prairie west of Athabasca.[35] The routes became popular vernacular expressions of morality and history, spatial histories linking together the West by connecting past and present.

Athabasca's trail ride was part of the wider set of pan-Canadian initiatives leading up to the nation's centennial celebrations of 1967. "We're not heroic" was the answer given by the members of the local Kinsmen Club when asked about the cold nights they spent travelling from Athabasca to Edmonton early in the winter of 1966. 'Creative,' was the word *Edmonton Journal* correspondent Gordon Aalborg used in his account of "these trail-wise adventurers who have spent the past three days retracing the Athabasca Landing Trail in the way of the pioneers who settled this country."[36] The members of the Kinsmen Club were a diverse group of farmers, labourers, and business-owners interested in the beliefs of the society founded in Hamilton in the 1920s: civic pride, community service, and domestic values. So it was with wild enthusiasm that half the town of Athabasca came out to see off the 'Klondyke Kavalkade Karavan.' With C.B.C. television cameras rolling, on a cold Saturday morning in February, the covered wagon and horses rode past the town limits headed for Edmonton.[37]

The Kinsmen who participated in this adventure did not so much leave Athabasca as carry the town with them. Sunday night in Rochester the party was met by the 'old timers', a few of whom had used the trail before the railway and Highway 2 made it obsolete. Monday

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[34] PAA, Interprovincial Trail Ride, PR1968.256, file 1-2, "Interprovincial Competitive Historical Trail Ride."
[35] AA, Kinsmen Club of Athabasca Album, 2000.31, "13 More Centennial Projects Approved."
[36] AA, Kinsmen Club of Athabasca Album, 2000.31, Gordon Aalborg, "Klondike Trail Trip 'Creative': Cavalcade Revives Historic Interest."
[37] AA, Kinsmen Club of Athabasca Album, 2000.31, George S. Opryshinko, "Klondike Keynotes."

included a rendezvous with their wives and a group of 'Kinettes' from the mid-way hamlet of Clyde, for a banquet and dance. When the Karavan finally reached Edmonton Thursday evening, the manager of the Bonaventure Motor Hotel had a bonfire waiting in the parking lot, and a line of Athabasca's famous high-kicking can-can girls performed for the weary travellers.[38] Though the participants brushed aside comparisons with Alexander Mackenzie and David Thompson, the Klondyke Kavalkade Karavan was clearly intended to recreate the founding colonial acts of the Athabasca District. In this respect it coalesced with many other efforts to re-trace the history of Canada's spatial evolution and re-inscribe the Canadian landscape as white settler space.[39]

The Klondyke Karavan extended Athabasca's historic presence southward through the Tawatinaw Valley toward Edmonton, drawing the attention of a new institution in Edmonton, the Provincial Museum and Archives of Alberta (PMAA). Preservationist societies and institutions in Canada were also aware of the political and moral values that could be located and transmitted through the staging of historic events, and so along for the Karavan ride to record the event for posterity was Wesley C. Mattie, Historic Sites Officer for the PMAA.[40] The museum was keen to be involved with the project and Mattie was interested in the region – he had sent maps of the area to Dr. Wright after reading 'Athabasca Calling.' A young public historian working for a young institution, Mattie brought both an air of officialdom from the city and a youthful naïveté that the older men on the trail with him would exploit as their voyage unfolded. He kept a diary,

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[38] G. Aalborg, "Whoopee! we made it," *Edmonton Journal* (Edmonton), 18 February 1966, 27.
[39] N. M. Forestell, Women, gender, and the provincial north, in: K. M. Abel, K. Coates (Eds), *Northern Visions: New Perspectives on The North in Canadian History*, Peterborough, 2001; Mackey, *The House of Difference*, 1-2; Razack, *Race, Space, and the Law*, 1-2. The dubious alliteration of their acronym, 'KKK,' was unintentional, but for some may have captured something of the fear and terror generated by nativism in Alberta.
[40] C. J. Taylor, *Negotiating the Past: The Making of Canada's National Historic Parks and Sites,* Montreal and Kingston, 1990, 47-48.

a logbook, a list of contacts, a photograph album, and an overview map of the Klondike Karavan route. In his preliminary report to the museum on the value of the trail ride, Mattie recalled from the voyage mainly those items of interest to the museum: the intact stopping houses along the trail, some of the artefacts possessed by 'old timers' that might be acquired for future exhibits, and perhaps most important of all: "a personal insight of pioneer life through sampling hardships which were common a half-century ago, and experiencing the pioneer spirit of comradeship which these situations produced."[41] Clearly the idea was that the Kinsmen possessed a certain spirit no longer evident in modernity. The presence of German, Scottish, Ukrainian, English and French farmers on the trail ride emphasized a version of pioneer patriotism from the 1960s, which Mattie tied to the narrative of Canadian northern-ness in a speech at the commencement of the ride: "The pressure of older days and older ways caused a spirit which is almost dead. … We are from many races yet we fight the cold and we will win."[42] In his report Mattie included a topographical survey of the trail showing the route of the Karavan, recommending that a complete photo-documentation of the trail be undertaken and a partnership be formed between the provincial archives and the Kinsmen Club to produce the book they were contemplating on the history of the trail.

In contrast to the official report outlining the historical and national significance of the trail and riders, Mattie's diary of the journey reveals an entirely different passage over the 100 miles to Edmonton. He was fascinated by the rough masculinity that emerged as the riders moved away from the ordered space of town. A section of his notebook titled 'Colloquialisms'

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[41] PAA, Wes Mattie - Historic Sites Officer, PR1967.284, file 6, W.C. Mattie, "Athabasca Landing Trail Ride. February 12-17, 1966."
[42] PAA, Wes Mattie - Historic Sites Officer, PR1967.284, file 7, W.C. Mattie, "Notebook."

Fig. 47. Authority and rough play on the trail

Source: Provincial Archives of Alberta, Wes Mattie - Historic Sites Officer, PR1967.284.13i, "Photographs," 14xxxv.

reveals how the rhetoric of pioneer spirit quickly altered into gendered discourse that highlighted male sexual virility and an imagined feminine salaciousness. From one Kinsman Mattie learned that "… a man without a knife is like a bull without a pecker," while another oddly popular saying went, "I met an old whore at Edson – she was so rough, it was like f….g a bag full of deer horns."[43] A similar narrative emerges in the photographs chronicling the trip. A staged image taken at the open door of the PMAA truck displays the young historian greeting the muleskinner and ready to play the role of expert witness. But once the caravan was outside the town limits, the official quality of the photography was quickly compromised, and the austerity of knowledge gathering quickly transformed into male play. Soon Mattie's camera was busy capturing a rider

[43] PAA, Wes Mattie - Historic Sites Officer, PR1967.284, file 2, W.C. Mattie, "Notebook."

being forced by his fellows to 'ass it' in the snow. For the farmers comprising the Karavan, the Athabasca Trail was less a site of historical significance than it was a liminal space between the worlds of Edmonton and Athabasca where masculine identities could be revealed, arranged, and re-enforced.[44]

The Karavan members were clearly liberated as they travelled south into undefined space, but the transgressive movement also caused rules to surface that were not apparent in the town. Moving 'out of place' says geographer Tim Cresswell, will "lead people to question behaviour and define what is and is not appropriate for a particular setting."[45] Such redefinition became more apparent each time the Karavan arrived in a new village on the route south. At one stop Mattie recorded that a man named Gene from Athabasca grew upset with a newspaper correspondent from Edmonton assigned to the riders. When the journalist "disappeared from the Clyde Comm. Hall dance with a blonde (and him a married man too). Gene was visibly moved upset by this and voiced his opinion on such activity. He noted that he himself was in a condition that would invite temptation (wife, 9 months pregnant) and that he did not believe it proper to yield to it." A plan was concocted for the next day to trick the journalist into riding a buckskin towed behind one of the horses. Upon a secret signal, the horses were to bolt and the journalist would be kicked off and left head down in a snow bank. The entry in Mattie's diary detailing the ruse expresses the narrow boundary between rough masculinity and the need to penalize those who step beyond the limits of transgression: "(Doug Mac is loosening up – just quoted a filthy

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[44] P. Stallybrass and A. White, *The Politics and Poetics of Transgression,* London, 1986; R. Rutherdale, Canada's August festival: communitas, liminality, and social memory, *Canadian Historical Review* 77 (1996) 221-249.
[45] T. Cresswell, *In Place/Out of Place: Geography, Ideology, and Transgression,* Minneapolis, 1996, 22.

poem) So – the boys feel that the ingenious plot may work tomorrow."[46] The following day, the Edmonton journalist fell victim to the laughter and derision of the Kinsmen. While the experience affected Mattie, neither the poem nor the episode made it into his final report—he clearly recognized the danger of letting the masculinity cultivated in the spaces away from town escape the liminal experience of the trail.[47]

The Kinsmen's efforts to commemorate the trail also expressed the historical consciousness of Athabascans in 1967. The riders were much less interested in approximating historical accuracy than they were in making it to Edmonton for a good time and returning to Athabasca for the rest of the Klondyke Days celebrations underway there. To make the trip in five days, and because most of the original trail was lost to farm fields, the Karavan generally stuck to the main roads, only connecting with the original route for the evening banquets. The map Mattie composed of the historical trail and the route followed by the Karavan shows not only the Kinsmen's understandable lack of concern over the historical accuracy of their commemoration. More importantly, it reveals the trail to be a representational space expressing the differing meanings of the voyage itself. Two trails leave Athabasca – one claimed as being used, and the one actually taken that reflects the movement into rough masculinity. The freedom experienced on the trail disappears at the stopping houses when the two trails converge and the wives and other Athabasca townspeople are met, but as the Karavan moved out of the public eye, the path taken again is an alternate sub-text to the 'official' route.

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[46] PAA, Wes Mattie - Historic Sites Officer, PR1967.284, file 2, W.C. Mattie, "Notebook."
[47] Also see B. Palmer, Discordant music: charivaris and whitecapping in nineteenth-century North America, *Labour / Le travail* 3 (1978) 5-62.

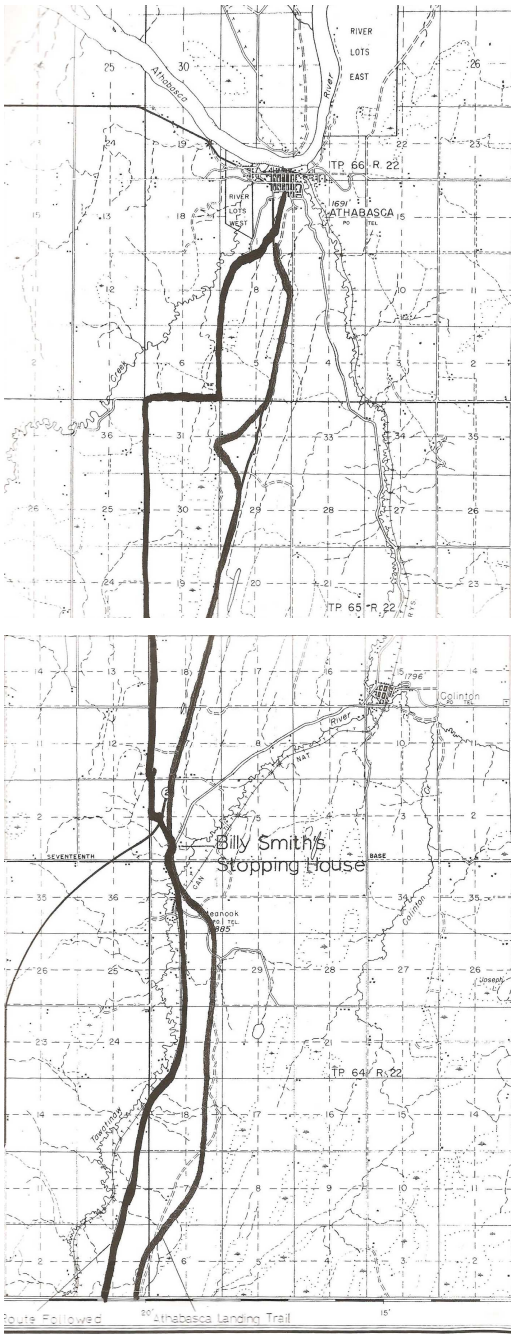

Fig. 48. The Kinsmen Klondyke Karavan route

Maps showing the route followed (above) and original Athabasca Landing Trail (below)

Source: Provincial Archives of Alberta, Wes Mattie - Historic Sites Officer, PR1967.284, "Department of Lands and Forests Aerial Survey, Alberta Sheet No '83 1/11."

Fig. 49. The cover of the immense steel-hinged album dedicated to the 1966 trail ride

Source: Athabasca Archives, 2000.31, Kinsmen Club of Athabasca Album.

The aftermath of the Klondike Karavan also revealed that the ways in which memories of place are performed mobilize multiple and often contradictory understandings.[48] Like the two routes, records of these performances also diverged significantly in the way they understood the trail as a space of representation. Mattie's report, along with diary, photos, maps and memos to 'follow up' on leads, was deposited in the Provincial Archives of Alberta immediately following its submission to the Historic Sites Board – an official public record of the past. The Kinsmen created a much more personal account: a two by three foot wooden memories album of the trail ride. (Fig. 49) The book's well-worn pages and carefully penciled-in annotations reveal many years of showing, re-telling, and accumulating before deposition in the town archive finally

[48] Opp and Walsh (Eds), *Placing Memory and Remembering Place in Canada*, 13.

suspended its conversation in 2000.[49] Ultimately the 1966 trail ride culminated in two very different types of archives about place and memory being put into circulation, a process that would be repeated more than once in the ensuing efforts to remember place.[50] It also meant that many versions of the Athabasca Trail were being created as its meaning was performed over and over again. Like the booster literature that promoted the growth of Athabasca, records of how the past was remembered were as much the product of hopes and dreams as they were the inscriptions of limits and reality.

6.1.3 The Trail North Foundation

The celebrations of the 1960s were marked by their broad civic popularity and functional fidelity to the past, but they also differed greatly. While the early jubilee and plays situated Athabasca as having an important place in Alberta *and* Canada, the trail ride emphasized much more of a Western experience. This regional meaning drew from gendered colonial aspects of the Karavan and reflected the prevailing interpretation that commemorating history would stem the disappearance of pioneer values. As Alberta entered the 1970s, historical commemoration confronted a different reality. Alvin Finkel notes that during this same period benefits from Alberta's energy sector were distributed unevenly between prospering cities and declining rural areas.[51] As a result, many small towns that had seen historic commemoration as a source of pride now looked to the past as a source of tourist revenue. Accordingly, the commemoration of Athabasca took a decidedly different turn in 1976 when Mary Lobay, a member of the Alberta

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[49] M. Langford, *Suspended Conversations: The Afterlife of Memory in Photographic Albums,* Montreal, 2001; AA, Kinsmen Club of Athabasca Album, 2000.31.
[50] On archives and circulation see Burton (Ed), *Archive Stories*.
[51] A. Finkel, The Boomers Become Workers: Alberta, 1960-1980, in: A. Finkel (Ed), *Working People in Alberta: A History*, Athabasca, 2012, 141-172.

Historic Sites Board, and Jock Czypionka, the former manager of Fort Edmonton Park, decided that the old Landing Trail running between Edmonton and Athabasca needed help.[52] More accurately, perhaps, they believed that the old landing route could help Athabasca. Though the organization they created was ostensibly intended to properly zone and protect the trail, the Trail North Foundation (TNF) focused on turning the region into a modern tourist Mecca for western Canadians. The foundation believed that institutionalizing the trail would affirm local identity through "the possibility of instilling in our own children a sense of history and a sense of belonging to the environment without having to travel to Eastern Canada or to Europe."[53] Although based in Edmonton, the TNF included public figures from Athabasca on their board and former Kinsmen served as president or vice president over the foundation's ten-year lifespan.

Working from an initial idea to re-open the Landing Trail as a designated historic site, visions of a long interconnected system of information kiosks, interpretive sites for the blind, adjoining hiking and cross-country skiing loops, and museums quickly began to loom in the aspirations of the TNF.[54] The crowning achievement of the network would be the Northern Transportation Museum situated on the bank of the Athabasca River. Departing from the small community of Gibbons outside of Edmonton, northbound trail users would eventually arrive at the museum located on the old landing cleared for 'The Athabasca Story' in 1961. In a speech given to the foundation in 1980, the TNF president envisioned riverboats, a scow-building yard,

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[52] AA, Trail North Foundation 1985.222, file 63, Mary Jane Cox, "Volunteer Trail Organizations: A Descriptive Overview."
[53] AA, Trail North Foundation 1985.222, file 1 "Minutes, Provisional Board of Directors" 27 September 1976.
[54] AA, Trail North Foundation 1985.222, file 3, J.E. Langton-Adams, "President's Address, Annual General Meeting" 19 October 1978.

exhibit hall, and a fully retrofitted river steamer as part of the museum.[55] More important than their many grand and (mainly) unfulfilled visions, were the radical ways in which the TNF's approach to commemoration differed from the efforts launched in the 1960s. This can be explained by its organizational structure. One of the first official decisions of the TNF was to develop a 'Central File System' intended to organize and make available "all correspondence, memoranda and attached materials," including historical research, to be "consecutively numbered and filed in chronological order."[56] From the outset, and like the Kinsmen's voyage, there would again be two trails—one a set of muddy ruts running along a creek in central Alberta and one a regimented system of ink and paper, stored neatly in vertical files. The second trail expressed the archival imagination of the modern mind; it was to be a record of nature so complete that it represented in totality the object it sought to know.[57] The idea that these records would be kept in chronological order conceived of an archival space that could contain the messy realities of the trail and sequence that reality according to a linear model. The TNF's central system can be found in the Athabasca archives today, where its six metres of paper far outweigh any material changes accomplished on the trail.

The same concept of a compartmentalized and organized filing system was abstracted to the geographical imaginary of the trail itself in the form of a 'route evaluation system' prepared by the planning firm of Bart Deeg & Associates of Edmonton, contractors commissioned by TNF to report on the best way to develop and maintain the landing trail. Their 1981 report outlined how current models in trail promotion could be brought to Athabasca. Like the archive

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[55] AA, Trail North Foundation 1985.222, file 3.4, J.E. Langton-Adams, "President's Report," 19 October 1978.
[56] AA, Trail North Foundation 1985.222, file 2, Jock Czypionka, "Memorandum," 15 October 1977.
[57] T. Richards, *The Imperial Archive: Knowledge and the Fantasy of Empire,* London, 1993.

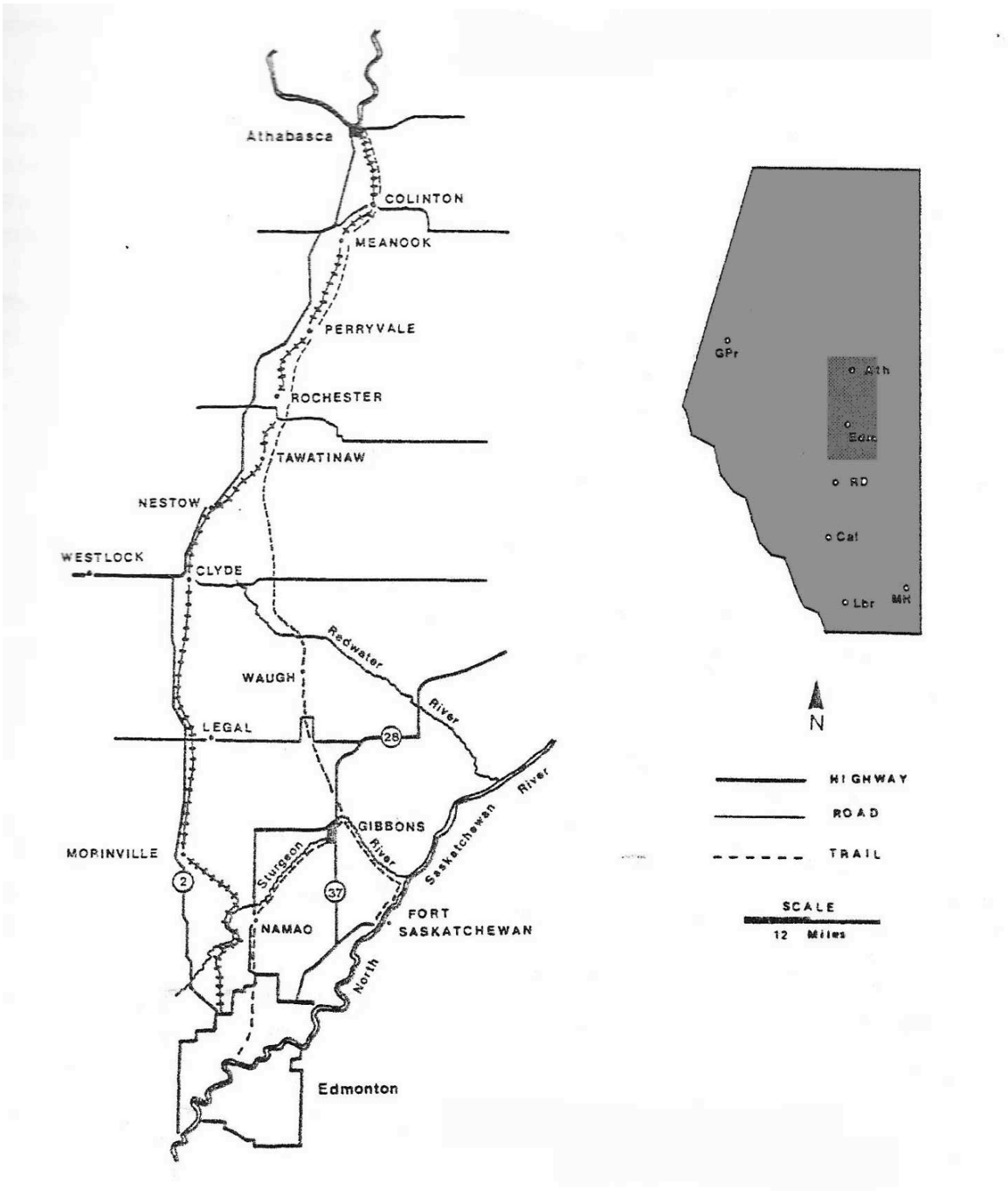

Fig. 50. The Athabasca Trail Corridor

Source: Trail North Foundation, *Application for Designation of the Athabasca Landing Trail of 1875/1883 as a Provincial Historic Resource*, prepared by J.B. Czypionka, Edmonton, 1982, 3.

partitioning the historical development of the trail, the evaluation system would "describe in relative detail the entire length of the Trail, mile by mile." Not only would each mile of the trail be isolated and identified to make it comprehensible, the characteristics of each and every mile were to be inscribed onto evaluation cards, showing terrain, landforms, elevations, soil conditions and other physical characteristics on one side, and "conditions of the landscape affecting sociological/psychological perceptions" on the other. Recording the trail in this manner was intended to anticipate and control how users would apprehend the trail experience. "To maintain the landscape," Deeg wrote, "one needs to understand it. By this the relationship between the various components contributing to the landscape need to be understood."[58]

Rather than understanding the landscape however, the TNF aimed to impose itself as the mediator of experience. Another commissioned report found that potential understandings of the trail best fell into two categories: 'cognitive' recognition of the content of educational materials, and the 'affective' dissemination of the trail's actual historical importance through emotional appeals to the user. To this end, the firm of Heron/Seale and Associates recommended that the TNF adopt a three-tiered approach to mediating human relationships with the trail, ranging from the purely recognition-based 'level 1', an interpretive object, to the full experience of 'level 3' multi-media display. As the report made clear, "arousal occurs in direct proportion to the number of senses involved and the intensity of their involvement until there is a danger of sensory overload."[59] While Heron/Seale neglected to specify what were the dangers of sensory overload one risked in walking a historic footpath in central Alberta, the imagination was clearly

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[58] AA, Trail North Foundation 1985.222, file 24.1, Bart Deeg & Associates, "Athabasca Landing Trail: Trail Route Evaluation System" prepared for Trail North Foundation, October 1981.
[59] AA, Trail North Foundation 1985.222, file 38, R.P. Heron and L.N. Seale, "Athabasca Landing Trail: Perryvale Centre for Heritage Exploration."

free to run wild in plans for the 'Trail Interpretation Centre' just north of Edmonton, where they proposed a rotating stage with animatronic pioneers like 'Oil Can Johnnie" and 'Buckskin Annie,' whose voices were to be provided by recorded 'old timers' stories. Unlike the Athabasca version of the story, these settlers came on their own volition to exploit the north, rather than at the beckon call of the river.

Nature was also subject to a new way of knowing in the 1970s. At the 'Nature Exhibit and Interpretation Centre' planned for the trail hamlet of Perryvale, the TNF envisaged an animal study reserve where hikers could watch scientists observing animals in their natural environs. Visitors were to be guided through a maze of environmental simulations where they would learn about the three forest types native to central Alberta, before reaching the observation gallery. There, "An interior display in front of the window will blend with the visible exterior landscape, giving the illusion that both the natural and the interior landscapes are one."[60] This new approach to the natural environment positioned nature somewhere in between an object of preservation, a renewable resource to be harnessed for the economic development of the region, and a territory of control. The basis for programming these ideas would be the TNF's spatial archive of information about the trail, imagining a neat route of well-ordered records filed according to distance from the origin of the trail in St. Albert, north of Edmonton.

While the people of Athabasca had understood the trail in relation to their town's development, the planners from the south verged on seeing it as a playground for central Albertans. The 'Historic Trails Rally' held throughout the early 1980s epitomized the extreme end of this view. A poster for the event, which saw participants racing their vehicles between

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[60] AA, Trail North Foundation 1985.222, file 32, "Trail Story Interpretation Centre," March 1977.

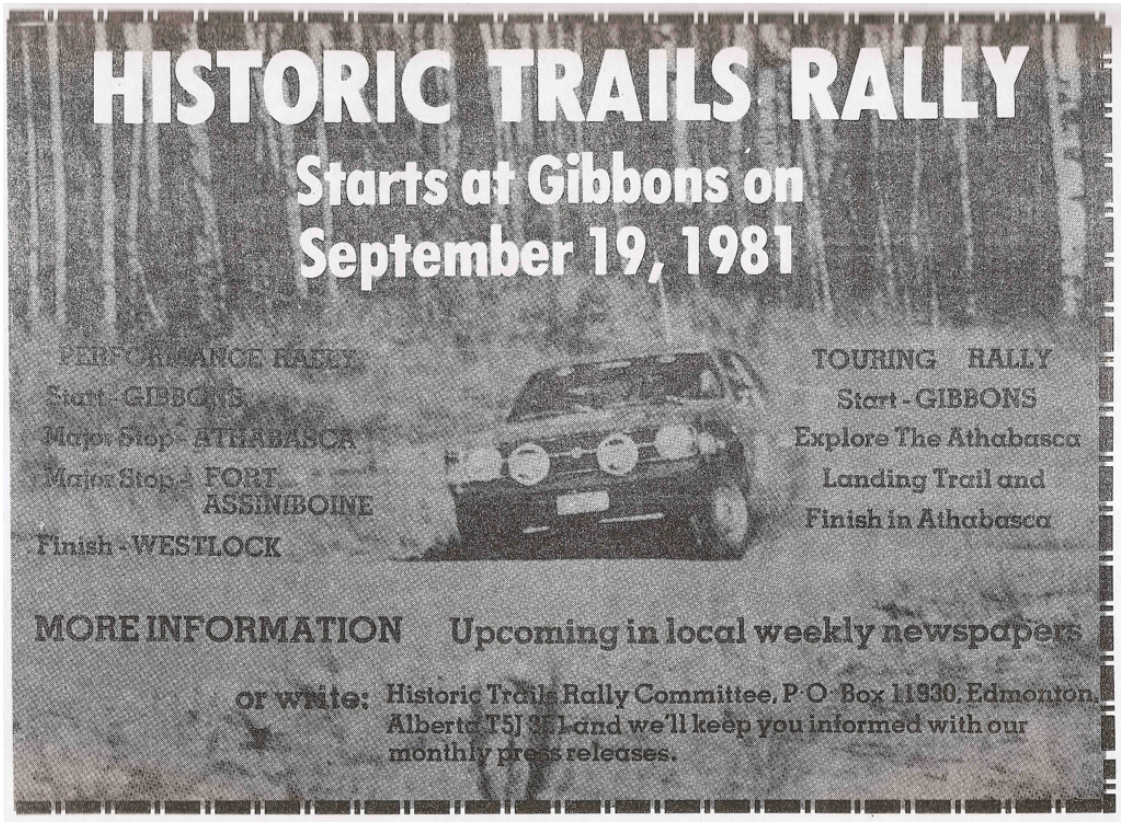

Fig. 51. Negotiating nature between Edmonton and Athabasca

Source: "Historic Trails Rally," *Athabasca Trail Telegraph* (Athabasca), 4 May 1981, 4.

checkpoints in northern Alberta, depicted a sports car heading into a four-wheel slide around the corner of a rural road, in the process spraying mud and debris across a picturesque forest background.[61] (Fig. 51) But perhaps the most ambitious proposal brought forward, and the most emblematic of the TNF's philosophy, was the idea of turning the entire Athabasca district into an 'ecomuseum.' Adapted from the French 'écomusée' concept, this proposal emphasized the phenomenological attributes of place-association and sought the spatial recombination of the

[61] "Historic trails rally," *Athabasca Trail Telegraph* (Athabasca), 4 May 1981, 4.

pioneer past with present imaginations.[62] According to the TNF, "In an ecomuseum the past becomes very much a part of the present. It functions as a coherent grouping of natural and cultural elements which are representative of the lifestyle of the people; and its purpose is to express the changes in its environment introduced by man within an ecological setting and through time and space. Thus, fresh garden vegetables are sold alongside frozen ones; a horsedrawn buggy is parked beside a modern automobile; home-baked bread is prepared along with an instant T.V.-dinner."[63] In the ecomuseum model, present-day citizens were to be indistinguishable from historical figures, a landscape of antiquity would overwhelm the modern, and the distinction between past and present would collapse in some ways all together, but in no place more completely than along the trail itself. Like the personification of the river in 'The Athabasca Story,' the 'voice of the trail' was planned to greet arrivals at the ecomuseum. It would read a script entitled *The Trail Speaks:* "I am the way north, the road between the rivers, the path of the Indian, the trader, the traveller and the settler. I lie on the land that was under the ice; the land that was scored and swept by icy water." Outlining the geography from Edmonton, the trail was to continue, "I slip unnoticed from the southern city; I wind through the farmlands... I ease over ridges and curve down hills… For a thousand years I saw only the Cree, silent in the woods, meeting only themselves, telling over the generations the story of a rare stranger from an unimaginably distant world. For a hundred winters I have seen you, the new Canadian, come and go in your guise of traveller and settler. […] Your colleague, the surveyor, came one summer and fixed my course by the stars." With the arrival of the railway, the solemn trail

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[62] P. Davis, Places, 'cultural touchstones' and the ecomuseum, in: G. Corsane (Ed), *Heritage, Museums, and Galleries: An Introductory Reader*, New York, 2005, 368.
[63] AA, Trail North Foundation 1985.222, file 55, Peter Heron, "The Athabasca Trail Project in International Perspective."

would explain, there were "no more children curious to see a strange new land." Only with the arrival of tourists was the joy of the anthropomorphized trail restored. Its story ended with the plea that these travellers could point the way north once again.[64]

Ultimately, the voice of the trail was never heard. Despite ten years of work by scores of dedicated volunteers, no ground was broken nor any sections of the trail improved by the late 1980s. Frustrated by the success of the Alexander Mackenzie Trail in BC, having received no government funding, and after being sued over loan default by his creditors, Jock Czyprionka, the main architect of the TNF, sold the plans to the "Great Northern Transportation Centre" in the town of Athabasca in 1990. For residents along the trail corridor – those who would have been living historical figures in the ecomuseum – the failure of the TNF plans reflected not much else than an old story of 'no money' and empty promises from Edmonton. Irene Royko-Plunkett told one reporter investigating the abandoned and incomplete Perryvale Nature Exhibit and Interpretation Centre that for her, it was not the failure of the tourist trail but the demolition of the grain elevators that marked the real loss of heritage and lack of faith that the government would respond to local concerns.[65] Between the spatial stories told about the trail in Athabasca and Edmonton, the views of people on the actual route were less often heard. They were fast becoming members of what Roger Epp calls 'outer Alberta,' growing poorer and less in step with progressive cities: "this other Alberta had come to be understood by outside policy-makers and investors not so much as a place of settled human community but as a resource plantation, a

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[64] AA, Trail North Foundation 1985.222, file 34, Linda Seale, "The Trail Speaks," *Athabasca Landing Trail: Perryvale Centre for Heritage Exploration, An Interpretive Concept Plan*.
[65] L. Herzog, "A Beautiful Trip back Through Time," *Real Estate Weekly* (Edmonton), 24 September 1992, 5.

transportation corridor or merely as empty space upon which to project large-scale industrial or recreational developments."[66]

6.2 Spatial Histories of the Athabasca Trail

Once Athabasca bought the TNF's development plans the focus of commemoration shifted again. The museum planned in Edmonton to celebrate northern transportation was reinvented in Athabasca as the 'River Interpretive Centre.' The new project would focus on the environment, a unique point the new designers emphasized by relying on the language of the early boosters. A pamphlet explaining the plan echoed pioneer boosters by promoting the "strategic location" of the settlement poised at the centre of Alberta and nexus of the river systems, where they could "make the Athabasca area become a much needed tourist generator for the entire north." In the 1990s the river was reinvested with old meanings made new again, and the interpretive centre would allow the visitor to "grasp what the river has done and continues to do to sustain life in the North, and allow for settlement and transportation."[67]

Bringing the heritage museum complex back to Athabasca also revealed a problem. Funding from the province was necessary, but Alberta Culture and Multiculturalism was no more interested in supporting the town's plans than they were in funding the TNF's out of Edmonton. The ministry recommended that Athabasca try to draw additional tourism funding from the city in the south.[68] This revealed a pattern. Every time the idea of museum complex shifted focus

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[66] R. Epp, 1996: Two Albertas, in: M. Payne, D. Wetherell,C. Cavanaugh (Eds), *Alberta Formed - Alberta Transformed*, Edmonton and Calgary, 2006, 727.727.
[67] AA, Athabasca Centre Clippings File, Athabasca Historical Society, "Athabasca River Interpretive Centre."
[68] AA, Athabasca Interpretive Museum Complex Clippings File, Greg Stevens to William Kostiw, 6 September 1988, Tawatinaw Corridor Steering Committee, "Interpretive Museum Complex: A Proposed Development for the Greater Athabasca Region Highlighting Historical Transportation and Tourism for Northern Alberta," 8 December 1988.

from the trail to the south to the river in the north, a new meaning of Athabasca as place was imagined, tying it together with Edmonton in a new way. Exploring the life of the trail back to the 1880s reveals how such shifting geographies of identity were created through exchange, commemoration and place-making in a process where the landscape of resettlement was invested with meaning and made into home. Cultural geographers and historians have read similar changes as the creation of lived places with dynamic meanings out of the absolute Cartesian spaces one might find on a map. As Brian Osborne puts it, "the objective geometry of space is transformed into emotive places by *living* in place, *memorizing* place, *narrating* place, and creating 'symbolic landscapes.'"[69] Indeed, over the course of 130 years the trail went from trade route to a forgotten path, to a bit part in a stage play, to a liminal space for masculinity, to an ecological historical preserve. But the Athabasca Trail reveals that making place was not a matter of remaking cold locational coordinates. Rather, it was these productions and representations of *space*, including direction, distance, environment and location, which gave meaning to *place,* nature, and belonging.

For as many routes as have been imagined, the trail itself has never been developed as a historic site, though money has been spent on modern transportation. In 1912 the first railway reached Athabasca, effectively eliminating both the usefulness of the old wagon route and Athabasca's own metropolitan ambition as Edmonton overshadowed its position of regional importance.[70] Later, Highway 2 enabled transport to the north on high-speed asphalt, turning the

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[69] B. Osborne, From patriotic pines to diasporic geese: Emplacing culture, setting our sights, locating identity in a transnational Canada, *Canadian Journal of Communication* 31 (2006) 147-175, 149.

[70] A cartoon from the *Journal* depicts the view from Edmonton toward the 'Open Sesame' of the North. The city of 'Edmonton' is shown as a hearty pioneer boarding a train marked 'R.R. to Athabasca Landing' and bound for 'the development of the north country.' The figure is firing a revolver into the air and shouting 'Everything comes to he

three-day wagon journey to Athabasca into a two-hour drive. Perhaps the most influential student of such shifting time and space relationships was the Canadian economic historian, Harold Innis. Writing during the 1920s and 30s, Innis's work was focused on explaining the development of Canada by analyzing the power relationships embedded in staples economies, and arguing that communities fused and merged together in the context of competition. He would have noted that the trail and waterways served the fur trade, the railway facilitated the settlement boom, and the highway and adjoining pipelines transport gas and oil from the north into the south. This was "a continual process of decentralization and recentralization that moved forward in a dialectical way as small hinterland communities attempted to outrun metropolitan influence, only to be absorbed back into it later."[71]

The trail, however, was not just a relic of an older system of staples exchange. The rediscovery of the route in the 1950s and 1960s shows the trail also trafficked in ideology. Alongside modern highways carrying potash and timber, and oil and gas pipelines, the old trail was continually pressed back into service as a transportation conduit along which ideas, documents, and archives, and sometimes structures as large as buildings were transported like staples back and forth between Edmonton and Athabasca, to be exchanged in the market of historical value. Innis eventually posited a similar understanding of staples communication networks as the results of attempts to gain a "monopoly of knowledge" over regional territories, and these attempts alternated between biases towards localness and preservation over time, and

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who *boosts* while he waits—All aboard!" Reprinted in 1912 railway opened to the north, *Alberta History* 53 (2005) 9.

[71] J. W. Carey, *Communication as Culture: Essays on Media and Society,* New York, 1989, 152.

toward mobility and extension over space.[72] The archives that reside in Athabasca and those that reside in Edmonton are the results of these transactions. In as much as the trail served as representational space, it was also mirrored in archival spaces of representation in Athabasca and Edmonton, formed as each place sought to make and extract meaning from the trail by reproducing a version of what they thought it was. Together, the archive and the trail gave meaning to the spatial past between Athabasca and Edmonton. At times this space was the archive, and at times it was the trail itself, a point made clear by the return of Dr. Wright's lost 'Athabasca Story' materials from 1963. They were found in 2005 in Boyle, only a few miles south on the old route, and the collection released a cacophony of different voices into the town. The letters were mostly from those who arrived in the settlement boom of the 1910s and departed shortly after the bust a few years later, but who never forgot Athabasca. Each begins with an arrival by trail into Athabasca, before negotiating the trials of homesteading, the deaths, births, failures and successes that turned many back and enabled many to leave happy. Every carefully crafted message, every story told from the trail, sat in a suspended state for 40 years in limbo on the very trail they meant to represent until reified by their placement in the archive.[73]

In his book on the colonial fashioning of Australia, *The Road to Botany Bay,* Paul Carter argued that telling of local history in broken narrations of travel, by naming and describing, and through establishing the features of a territory in which to live, are analogous to unfinished maps: "what is evoked here are the spatial forms and fantasies through which a culture declares its presence."[74] Likening them to the first explorers and surveyors, he described pioneer accounts as

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[72] Innis, *Empire and Communications*, 192.
[73] B. Dodge, Places apart: archives in dissolving space and time, *Archivaria* 44 (1987) 118-131.
[74] P. Carter, *The Road to Botany Bay: An Exploration of Landscape and History,* New York, 1988, xxii.

spatial histories because they establish the imaginary terrain onto which other stories are written and told. They provide the necessary counterpoint to 'imperial history' because they act as the stage upon which the apparently greater events of exploration and conquest are played out. For Carter, importantly, these spatial histories were not relegated to past, but continually remade through interpretation and celebration of colonial history. Indeed, for Phillip Ethington, another claimant to spatial history, the metaphors of historical explanation are fundamentally cartographic. In his groundwork for a spatial theory of history he argues that "the past cannot exist in time: only in space."[75] In this schema, historians work out a topology of the past in order, again, to map it. The 'placing' of time constitutes the work of history, wherein historians are as active in generating experience as they are in the performances of historical actors. According to Ethington, "every past is a place… all action and experience *takes place*, in the sense that it requires place as a prerequisite, and *makes place*, in the sense of inscription."[76] The efforts to commemorate the Athabasca Landing Trail demonstrate that these claims are true of local history as well. But on the changing frontier and in the tumult of metropolitan ambitions, where what had *taken place* often had more to do with how *place was taken,* a project for spatial history must also account for the dynamics of power and relationships within the lived places of past and present, of nature and environment, between cites and hinterlands, and for the production and reproduction of archives and meanings across them.

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[75] P. J. Ethington, Placing the past: 'groundwork' for a spatial theory of history, *Rethinking History* 11 (2007) 465-493, 465.
[76] Ethington, Placing the past, 483.

Chapter 7: Conclusion

7.1 A Spatial History of Knowledge in Canada

The chapters in this dissertation trace contours in the spatial history of Canada – episodes in which people created and shared meanings of the country by reading, interpreting, and archiving the landscape and environment around them. Beginning with the Archives Branch established shortly after Confederation, chapter two investigated how documentary evidence of the nation's past was first centralized in Ottawa. Here I showed how the 'spaces of the archive' worked variously to provide both a social, environmental, and political representation of Canada, but also lent credibility and functionality to the nascent state apparatus and civil service. Chapter three moved to the spaces between the photograph and the map to investigate the origins of survey photogrammetry. Taking a broad sweep from the 1860s to the 1960s, this chapter showed how the emergence of aerial photography allowed geographical ways of seeing landscapes to be entrenched in Canadian state and educational bureaucracies. Chapter four pursued a related use of pictures and images directly into Canadian schools. Here I showed how the educational pedagogy of 'visual instruction' was aligned with progressive ideas about nature study and new forms of academic geography intended to shape the way children read and recognized landscape and environment. In Canada, these new methods helped geography teachers promote a regional paradigm of the country for schoolchildren. The next spatial history also focused on visualization and region, but shifted the interpretative locale of the dissertation from the centres of knowledge to the frontier West. In order to understand how people told stories about the resettlement experience, chapter five reviewed Ernest Brown's efforts to focus the historical geography of Western Canada into a set of teaching objects, including photograph

albums, lantern slides, and museum displays. The sixth chapter on the Athabasca Trail again changed scale, this time from the regional to the local. Aiming to carry the themes of the dissertation through to the present, this chapter examined the spatial histories told with objects, images, archives, and the representational spaces of a former fur trade trail between Edmonton and Athabasca. I call the larger project 'a spatial history of Canada' because on one hand it looks at the historical geography of knowledge as it expanded between the centre and the peripheries of the country, and on the other looks at the way people used geography and landscape to make sense of history, environment, place, and belonging in a modernizing world.

The stories told here offer a rough and uneven chronology of the historical geography of knowledge in Canada as it moved northwest at the turn of and into the twentieth century. Taken as a whole the story is uneven precisely because spaces of knowledge in modern Canada were overlapping and divergent: information moved between the frontier, the centres of calculation, and back to the frontier through a series of people and things who were themselves embedded in a patchwork of transportation and communication systems, and set against the challenging physical topography of the country. Telling the larger story unevenly has also allowed me to elaborate the function of objects as carriers of knowledge across this geometry of time-space, and their role in the Canadian state's attempts to modernize landscape, society and environment. Moreover, my focus on the ontology – or the 'coming into being' – of objects allowed me to investigate a set of themes a chronological history would not uncover; to see how questions of truth and observation were resolved in their cultural contexts, to theorize the role of archives in representing the national landscape, and to consider the deeply significant role of the tools of academic geography in imagining and legitimating the Canadian state. Most importantly, I have shown how these themes and objects involved in the making of modern Canada also reflect the

production of a certain kind of Canadian. The analysis of each knowledge-carrying object has demonstrated the coproduction of a new subjectivity in relation to it. Thus the documents in the early federal archives were connected to the governance of Canadian civil servants; the beginning of air photograph interpretation altered notions of truth, objectivity, and presence in the embodied practices of surveying in favour of a laboratory objectivity belonging to geographers. 'Visual instruction' and Canadian geography teaching included new forays into the mental geography of children. Here, progressive-era methods asked both students' and teachers' to envision themselves as interpreters of Canadian geography. Finally, I showed how objects and landscapes from the pioneer period in Alberta were invested and practiced through spatial histories designed to give a sense of regional identity and belonging to future generations. Ultimately, the strange task of understanding humans by following their relationships with things shows how people found ways to understand the changes and transformations taking place around them by placing environmental knowledge into objects, and through them developed ways of seeing that brought past, present, and future landscapes together in a way that gave meaning to their experiences and observations.

7.2 Visualizing Geography

While this study has eschewed individuals in favour of the things they used in order to demonstrate the historical geography of knowledge in Canada, it includes a rich tapestry of people whose lives were spent in search of spatial histories. One exemplary case is Lawrence Johnstone Burpee. Though a pillar of scholarship in his day, a prominent man of state, a poet, essayist, and prolific author on a variety of subjects, Burpee is not now thought of as bearing

significant personage in traditions of history or geography.[1] Nonetheless, he rubbed elbows with the highest members of government and academic elites in the early-twentieth century and certainly influenced much of their work. Moreover, he was a consummate spatial historian, and his interest in the past and future of the nation pressed into many of the connections he made in life. Burpee was born a Haligonian in 1873 and developed an interest in Canadiana at an early age. Following a homeschool education, he joined the 'inside service' in 1890 at age 17 as a private secretary to the Minister of Justice. Young Burpee would have passed Douglas Brymner in the halls of Langevin Block, and eventually struck up a working correspondence with him on matters of historical records. Perhaps his personnel file even passed across the old Scot's desk, as Burpee would have been among the first public servants to pass the new entrance exams required by the reforming civil administration. In 1904 and in his early thirties Burpee left this post to take up the headship of the Carnegie Public Library in Ottawa, where he nurtured his passion for literature and began to write poems and essays as well as works of Canadian history and geography. His time in government with Brymner not forgotten, during these years Burpee solicited widely for the establishment of a national library and for an expanded role for the Archives Branch.[2] His seven years at the library earned him a Fellowship of the Royal Society of Canada, followed by a 1912 appointment to National Secretary of the International Joint Commission (IJC), a position he maintained until his death in 1946.

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[1] This is likely because he fell too evenly between both worlds as they professionalized and drew boundaries in the twentieth century, With the exception of Don Wright's excellent study of professional culture in early 20th century Canadian universities, Burpee is generally ignored in histories of history. C.f. Berger, *The Writing of Canadian History*; M. Shore, 'Remember the future': *The Canadian Historical Review* and the discipline of history, 1920–95, *Canadian Historical Review* 76 (1995) 410-463; D. A. Wright, *The Professionalization of History in English Canada,* Toronto, 2005.

[2] See L. J. Burpee, A Plea for a Canadian National Library, *Canadian Historical Review* 1 (1920) 191-194. Burpee claims that he had been making this argument since 1910.

The IJC's role managing boundary waters meant Burpee came into contact with many government departments in Canada and the US, often liaising with their cartographic and survey branches. It was not long before he met A.M. Narraway, the young acolyte of Dominion Land Survey chief E-G Deville and enthusiastic champion of the Air Board's photogrammetric surveying program being pioneered in the Department of Interior. Burpee and Narraway were part of a larger body of intellectuals employed in civil service whom Douglas Owram terms the 'government generation.' These were men disaffected by the horrors of the Great War and other follies of nineteenth-century patriotism who had discovered a new sense of nationalism based in modern democracy and the efficient growth of state services.[3] It was Narraway who spoke of the need to reconfigure Canadian's 'geographical imagination' around the speed and accessibility of peacetime air travel, and it was also he who arranged for Burpee to fly reconnaissance over the St. Lawrence in 1921 to determine the potential for a public works development canal connecting the great lakes to the sea (an idea later developed as the St. Lawrence Seaway). Amazed by his flights between Kingston and Montreal in a small DH4, Burpee celebrated how access to the aerial view made "it possible to interpret more intelligently the information contained in the maps."[4] He would not forget his first air voyages over eastern Ontario, and would eventually use the imagery he found there as a powerful means of explaining Canada's history.

While Burpee shared with Narraway a fascination with modern technology and the kinds of liberated vision the airplane offered to society, he maintained different types of connection with friends in universities. One of these was George Wrong, Canada's preeminent historian at

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[3] D. Owram, *The Government Generation: Canadian Intellectuals and the State 1900-1945,* Toronto, 1986.
[4] Thomson, *Skyview Canada: A Story of Aerial Photography in Canada*, 35., 35.

the University of Toronto, with whom he worked towards the founding of the Canadian Historical Association.[5] Commentators have correctly identified the CHA's founding as a benchmark in the professionalization of Canadian history, yet Burpee's central role in its foundation suggests the strong voice amateur practitioners maintained well into the twentieth century. In fact Burpee had captured the attention of historians during his tenure as librarian, when he had graduated from essays and poetry to writing sweeping works of Canadian history. With Wrong he shared a fascination for the force of geography in shaping a unique Canadian origin story: in his writing he entwined the native physical landforms of the continent with European accounts of exploration and adventure. In volumes like *The Search for the Western Sea* (1908), *By Canadian Streams* (1909), *Among the Canadian Alps* (1915), and *Pathfinders of the Great Plains* (1915), Burpee foregrounded the national landscape as a positive force forging the discoveries and conflicts of the continent.[6] To furnish the best illustrations for the motivating power of environment for his books, he was in contact with Ernest Brown in Edmonton, using many of his collected images of fur trading in northern Alberta (taken by Charles Mathers in 1901) to illustrate his retellings of the adventures of Alexander Mackenzie, Peter Pond, and Anthony Henday. One of his greatest achievements was editing a volume that captured the routes of these explorers' discoveries leading to the conquest and settlement of the interior. This was *An Historical Atlas of Canada,* a work he published in 1927 in collaboration with his old colleague George Wrong, the US anthropologist Edward Sapir, Geographer of Canada James

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[5] Burpee even served as its first president and holding a prominent position in many regional historical societies as well, another point generally ignored in the historiography.

[6] Burpee, *The Search for the Western Sea*; L. J. Burpee, *By Canadian Streams,* Toronto, 1909; L. J. Burpee, *Among the Canadian Alps,* New York and Toronto, 1914; L. J. Burpee, *Pathfinders of the Great Plains: A Chronicle of La Vérendrye and His Sons,* Toronto, 1915. Also see; L. J. Burpee, *A Little Book of Canadian Essays,* Toronto, 1909; L. J. Burpee, *Canoe Routes from Lake Superior to the Westward,* London, 1910; L. J. Burpee, *The Discovery of Canada,* Ottawa, 1929.

White, and F.C.C. Lynch, the Director of the Natural Resources Intelligence Service who supplied many of the 'visual instruction' photographs to Canadian geography teachers and textbook authors.[7] The same effort also earned Burpee induction into the Royal Canadian Geographical Society, and in 1930 he was invited by Charles Camsell to become the founding editor of the society's newly minted periodical, the *Canadian Geographical Journal*.

Burpee's enthusiasm for knowledge and scholarship shaped his life and the world around him. That he interacted with every figure in this dissertation, and his story is woven into the background of those told here, underscores the common mentality connecting members of state, academic, and public life in the late nineteenth and early twentieth centuries. Burpee belonged to a wide assortment of similar men and women who shared passion for the idea of Canada: an idea that included a belief in the importance of history and geography in shaping the national psyche, an appreciation for the natural landforms expressed by the country's diverse regional composition, and a clear mission for the development of those same regions. This tautological certainty imagined a deep geographical imperative written into the continent itself calling for the modernization of the country; a version of providence many saw evidenced by the quick transformation of the pioneer West from a desert-like waste into a fertile wheat belt, the conquest of the tall cordillera mountains by rail, the damming of the great rivers for hydropower generation, and by the expansion of the Canadian resource frontier into the treeless barrens of the Arctic north. Contemporaries observing these changes often shared a deep sense that Canada was still in a moment of transition, where the past and future jostled and shoved one another, where the old conventions of space and time were giving way to a dramatic new Canada – one

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[7] L. J. Burpee, *An Historical Atlas of Canada,* Toronto & New York, 1927

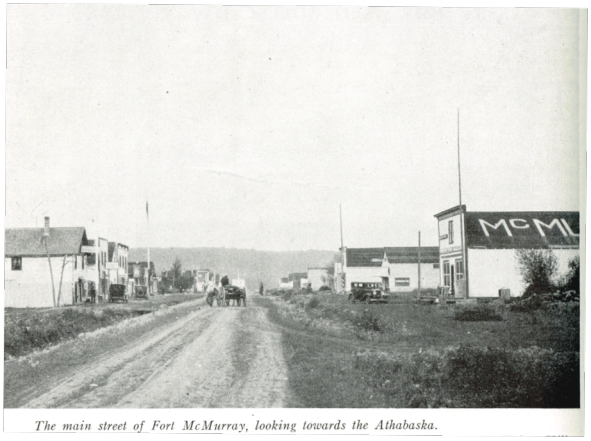
where the geographical imagination could be grasped everywhere; in every invention, each event or new building, every new rail line or canal, the vastness of the country seemed to expand in space and compress in time. It was with these things in mind that Burpee travelled to Fort McMurray in 1935 to consider the history of the fur trade and the future of Canadian resource development.

While his friends and associates lived in Ottawa or other cities and towns of Canada, Burpee did his most profound thinking around concepts of history, and geography in the wilderness frontier. Like his colleague, Harold Adams Innis, he travelled to the remotest resource communities in order to find the clearest representations of the forces of change he saw around him.[8] Also like Innis, Burpee moved between the bush and the metropolis as seamlessly as he did between modern Canada and the past landscapes that he wrote about and saw shaping the country, and herein he faced a challenge. Indeed the trip to McMurray demonstrates how mobilizing meanings and stories between the actual *sites* of knowledge-making meant Burpee turned his fascination with spatial history into a question of visualization. The account of his voyage to the old fur trade country of northern Alberta would appear in the *Canadian Geographical Journal* he himself edited. His aim was to trace the old pioneer routes into the north. However, by the 1930s the fate of Athabasca Landing had been sealed, so he boarded a train for what he presumed to be the next great gateway to the vast empire of the north, Fort McMurray, "the last surviving example of the old frontier town of the west." Established in 1870 as a fur trade post of the HBC, Fort McMurray was some 200 miles downriver from Athabasca Landing. It never went through phases of rise and decline, and for most of its life

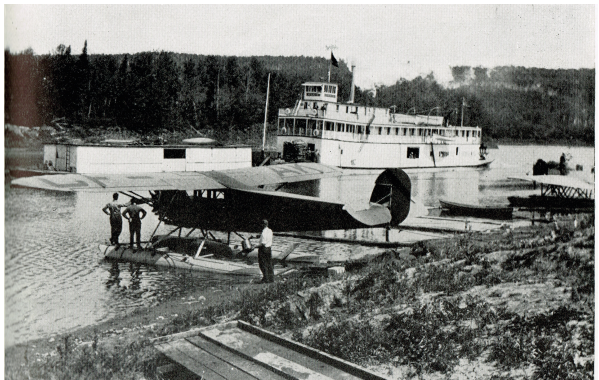
[8] For Innis in the north, see M. Evenden, The northern vision of Harold Innis, *Journal of Canadian Studies* 34 (1999) 162-186.

remained a tiny settlement of fewer than 100 people. When McMurray's boom came in the late 1920s it was not heralded by the arrival of hundreds of settlers, but by economic investment from the south. Burpee was interested in how the town was quickly becoming an air base for surveying, resource prospecting, and transportation in the northern reaches of Alberta and NWT. His article, titled "Where Rail and Airway Meet" spoke to the nexus of modern transportation McMurray epitomized: where the iron road of the railway ended, a new geography of aviation and travel in the sky began. Burpee was fascinated by how in this remote settlement at the edge of the prairie parkland, pilots seemed to speak a different language: remote Arctic communities like Fort Providence on Great Slave Lake, or Aklavik at the mouth of the Mackenzie were but a day's travel away. He could not overcome how pilots discussed these places as though they were "around the corner," even though separated by thousands of miles. For Burpee, to talk like this in remotest Fort McMurray was evidence of the new geographical reality of Canada that he saw emerging. But McMurray was also a metaphor for the spatial history of modernity, the way the compression of space and time seemed to increase in resolution when registered through those remaining places where the old and the new overlapped. Standing on the banks of the Athabasca, he imagined burly NWC voyageur brigades of Old Quebec paddling down the river singing the deep baritone chansons of the fur brigades. These nostalgic moments of by-gone times were marked by lament for the passage of time and praise for the path to progress opened by the voyageurs and the river together: "Man-power - steam - air. Transportation of a thousand years - of yesterday-of to-day. The first took a season to get from one trading post to another in

Western end of Fort McMurray, with the Hudson's Bay Company's post, and the Airport in the lower right-hand corner. Junction of the Sny and the Athabaska.
R. C. A. F. Photograph.



The main street of Fort McMurray, looking towards the Athabaska.



Hudson Bay Company steamboat "Northland Echo" leaving Fort McMurray with freight for Great Bear Lake. Aircraft also about to start. Route by water 30 days—by air 8 hours!

Fig. 52. Visualizing spatial history – images from L.J. Burpee's trip to Fort McMurray

Source: Lawrence J. Burpee, Where Rail and Airway Meet, *Canadian Geographical Journal* 10 (1935) 238-246, 238, 241, 241.

the far north; the second, by rail and steamer, needs a fortnight;' the last, from daybreak to dark of one day."[9]

Harold Innis no doubt influenced how Burpee made sense of his experience. Burpee had reviewed his *The Fur Trade in Canada* (1930) and would have read his articles in the *CHR* and *Geographical Review*, wherein Innis described many of the changes Burpee would later witness in Fort McMurray.[10] After his appointment as economic historian at the University of Toronto, Innis made a series trips to the north of Canada in order to assess the significance of river systems in organizing early the fur trade and the boom in transportation and mining industries getting underway in the 1920s.[11] Today he is remembered for popularizing this interpretation in the 'staples thesis' of national development: he was able to show how the distribution of primary resources and natural transportation routes guided the exploitation of the North American continent by international markets. Eschewing the conventional wisdom of the British constitutional development of Canada, Innis offered a local interpretation: the political territory of Canada emerged along a successive set of axes already shaped by the combination of resource geography, the available technology, and institutional arrangement of companies like the NWC, the CPR, and HBC.[12] However, reflecting on staples at the end of his career in the late 1940s, Innis began to suspect that the market economics he identified in different resources had a deeper significance in society, since each seemed to bring with it a new set of spatial relations. Innis realized that staples worked like communication media: some, like fur, lent themselves to a vast,

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[9] L. J. Burpee, Where rail and airway meet, *Canadian geographical journal* 10 (1935) 239-246, 239.239.
[10] L. J. Burpee, The Fur Trade in Canada: An Introduction to Canadian Economic History. By Harold A. Innis, Associate Professor of Political Economy in the University of Toronto. With a preface by RM MacIver.(New Haven: Yale University Press. 1930. Pp. 444. $5.00), *The American Historical Review* 36 (1930) 177-179
[11] W. J. Buxton (Ed), *Harold Innis and the North*, Chicago, 2014.
[12] H. A. Innis and D. Drache (Eds), *Staples, Markets, and Cultural Change: Selected Essays of Harold Innis*, Montreal, 1995.

dispersed and mobile network of exchange, whereas others, such as mining, were centralized, fixed, and relatively intractable.[13] As he delved deeper into thinking about media, he began to see the history of global civilizations as a contest of empires of communication: some preferring control over territory were biased towards space, relying on dispersed and ephemeral media of communication like newspapers and telegraph, while those biased towards time had more centralized forms of power and lasting testaments to their power, like the clay tablets of the Babylonians and Egyptians.[14] As many have demonstrated, Innis's universalizing theories on empire and communications are best mapped onto Canada: his observations present the experience of colonialism and Native-Newcomer relations as the domination of time-based oral tradition of Aboriginal societies by the written technology of Europeans represented by the Dominion of Canada.[15]

Innis's later method of seeing the geography of Canada through the interplay and clash of space and time can be found in Burpee in the 1930s. While Innis developed a sophisticated framework, Burpee found his language in stories of spatial history. He was overwhelmed by Fort McMurray: the tiny town seemed to be a clashing chorus where vectors of past and future met, the world of yesterday "curiously mingled with conditions undreamed of in pioneer days on the prairies." He saw in one take the settlement as it existed in history - unchanged since the days of pioneer prospectors Alexander Mackenzie and Peter Pond - as it was overlaid with the architecture of modernity, and he struggled to make sense of how to visualize what was to come.

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[13] For a excellent overviews of this transformation in thought, see Carey, *Communication as Culture*; T. J. Barnes, *Logics of Dislocation: Models, Metaphors, and Meanings of Economic Space,* New York, 1996.
[14] H. A. Innis, *Empire and Communications,* Toronto, 1950; H. A. Innis, *The Bias of Communication,* Toronto, 1951.
[15] J. Berland, *North of Empire: Essays on the Cultural Technologies of Space,* Durham, 2009; G. Friesen, *Citizens and Nation: An Essay on History, Communication, and Canada,* Toronto and Buffalo, 2000.

Everything in the town seemed alive with these contrasts: men who arrived twenty years prior in a Red River cart walked among oil and gas entrepreneurs just dropping in for the day; just beyond the newer frame houses, Western figures like "an occasional horseman or an Indian trapper or an old-timer" would meander back and forth between their hand-hewn log huts tucked half into the bush as they grumbled about the 'new' provincial government, until one of the brilliant steel aeroplanes would drown out their sounds as it passed with a roar overhead, causing all to pause as "that beautiful and incredible rider of the air" passed by.[16] The geography of the settlement itself reflected this strange overlap of worlds. From end to end the main - and only - street in town ran from the old fur brigade landing on the banks of the Athabasca up through Fort McMurray, narrowed as it ran through the forest for a mile or two, and remerged in the modern steamboat and rail terminus at Waterways, where the river was wide enough for the floatplanes to set down on the water.

Many cultural historians have noted that one of the curious developments of the modern age was a new awareness of 'the past' as a defined kind of territory standing apart from the present.[17] In essence, they argue that modernity was not only occasioned by the birth of historical study as a scholarly profession, but was constituted through a mode of consciousness meant to be shared by members of a nation state who were meant to look to 'history' as an instructive and didactic lesson about the present. During the nineteenth century, the world grew crowded with the signs and spaces of this collective past: people flocked to museums to see the story of progress arranged in a series of artefacts and displays, new forms of literature and

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[16] Burpee, Where rail and airway meet, 240.
[17] Lowenthal, *The Past is a Foreign Country*; Kern, *The Culture of Time and Space*; F. Jameson, *Postmodernism: The Cultural Logic of Late Capitalism,* Durham, 1991.

historical writing made the past seem familiar and comforting, public squares filled up with statues of great military leaders or national fathers, and the delineation of certain landscapes and sites as sacred territories worthy of heritage preservation made the past seem tangible and evident in everyday life.[18] One key to the growth of history seems to be a self-awareness of the kinds of displacement from tradition created by movement into newness and modernity, the threat of missing the lessons the past had to offer, and a promise that belonging in nation and embrace of progress would the loss.[19] In this regard, Burpee's viewpoint on Fort McMurray in the 1930s may not be so different from Walter Benjamin's description of the great Parisian arcades. Both saw history as a set of codes and objects written in space, part of a territory gradually being chewed away at by the forces of technology and change, swept up in a fervent clash that seemed to freeze the present as though it were *the* image of change.

Like Benjamin, Burpee witnessed the present as a set piece image: caught in the moment between old and new. How Burpee decided to visualize what he saw as the contests of spatial history in Fort McMurray points to important questions I consider in this dissertation about how Canadians used objects carrying history and geography to understand and make sense of modernity. These questions included not just how to observe the land and the people, but how to interpret and make truth from observations. Naturally, Burpee attempted to make sense of his

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[18] B. Anderson, *Imagined Communities: Reflections on the Origin and Spread of Nationalism,* London, 1983; Bennett, *The Birth of the Museum*; Hobsbawn and Ranger, *The Invention of Tradition*; Nora, *Les lieux de memoire*; D. Rosenberg and A. Grafton, *Cartographies of Time: A History of the Timeline,* Springfield, 2010; L. Smith, *The Uses of Heritage*, 2006; M. Samuels, *The Spectacular Past: Popular History and the Novel in Nineteenth-Century France,* Ithaca, 2004.

[19] A number of theses are proposed as to why history became so important. For Benedict Anderson, Terrence Ranger, and Eric Hobsbawm, history played an important part in establishing 'imagined communities' as migration to cities meant previous forms of attachment like village or religious life waned in importance. Likewise, Raymond Williams places connects appreciation of nature and history to the transformation of the English countryside in the industrial revolution. For Raphael Samuels, it was a sense of authenticity that seemed to be endangered by modernity. Also see Boym, *The Future of Nostalgia*; Halbwachs, *On Collective Memory*; Huyssen, *Present Pasts*; R. Williams, *The Country and the City*, 1973.

time in the north through a set of photographs he included along with his article. (Fig. 52) The first was a predictable oblique aerial view of Fort McMurray and Waterways, showing the settlement nestled into the banks of the Athabasca, the clearings of land evidence of civilization against the blanket of forest. The image gave an impression of the landscape below, but was a novel sightline reflecting the new kind of modern vantage and power offered by high-altitudes. As I have shown, the aerial photograph both reflected and revealed how Canadians were taught to *look* and *think* about places in terms of geographical knowledge: whether it was their planning layout or strategic defensibility, the regional aspects that shaped their characteristics, or their site and situation relative to transportation and resources, the geographical imagination had lifted expectations of Canadian places and landscape into the air – requiring viewers to see like a state. While the aerial view highlighted the unrestricted scopic range of the aeroplane, Burpee complimented it with images on the ground testifying to his understanding of the town as both a pioneer space and frontier of modern development. A shot of the downtown showed a horse and buggy coming up the same street as an early automobile, another depicted a floatplane juxtaposed with the old 'Northland Echo' steamer owned by the HBC with the caption "Route by water 30 days – by air 8 hours!" A final set placed images of men tracking scow barges into the river alongside a Canada Post mail plane being loaded for a delivery to the prospecting camps in the north. Presented with these images, in conclusion for Burpee, the force driving the change he captured was not technology, not modernity, nor progress, but the very landscape itself, and the spatial historian trained his eyes for the imposing commands of nature revealed through environment. Looming in the distance, over the wooded ridge of the Athabasca valley, lay hundreds of miles of tar sand where Abasands Oil was just beginning the first petroleum extraction from bitumen shale. Burpee knew, "[t]he north country is full of oil, and its mineral

resources are only beginning to be understood. … One need not be a prophet to see the day when McMurray will be a large and flourishing city, connected by rail and telegraph with the south, and serving as a collecting and distributing centre for the north."[20]

As I have demonstrated in this dissertation, many Canadians were trained to view these visual narratives as spatial histories about the interaction of humans and environment. For Burpee, they were alive with all the contractions of past and present McMurray seemed to embody. They showed people caught in the wave of progress and the relentless dictates of the environment, twinning the old geography of the fur trade with the age of the aeroplane, linking past and present, bringing Canada into the north. Indeed, the significance they held then is similar to how spatial histories matter today, because ways of seeing and observing landscape and history together are not confined to the past. Burpee's images may be usefully compared to those of contemporary Fort McMurray, an urban service area of more than 60,000 people at the centre of Alberta's oil and gas boom. In 2009 an article ran in the March issue of *National Geographic Magazine* depicting the environmental results of oil sand extraction processes in the Athabasca Oil Sands north of the city, just beyond the wooded ridge Burpee observed in 1935. The oil sands are known to consist of about 151,000 square kilometers of land covered by extensive peat bogs and stands of spruce and lodgepole pine. However, as the *National Geographic* warned its readers, the real significance of this site is that nowhere on earth is more landscape disturbed in a day than at Fort McMurray. The massive *in situ* process used to separate oil from the bituminous shale requires entire layers of earth to be stripped to access the layers of black tar sand beneath the surface. Along with the strip mining, millions of gallons of

[20] Burpee, Where rail and airway meet, 241.

water are pumped from the Athabasca River and heated to create steam that activates the separation process, a process through which it is rendered toxic and therefore must be held in tailings ponds until the polluting materials settle out of the water. Although the ninety-one oil projects are well known for creating high revenues and employment statistics, operating today at 1.3 million barrels of oil a day, the project was 'scraping bottom' in the titular words of the *Geographic*.[21]

The article described a scene not unlike any other large-scale strip mining project: a dark world peopled by tiny humans figures dwarfed by massive earth-moving machinery; pipes releasing tailing-laden runoff into settling ponds on the banks of the river. Unlike Burpee's era when few questioned the wisdom of oil sands development, the 2009 piece garnered an ambiguous reception. While the Alberta Environment Minister called the article 'fair', national politicians hoping to defend Canada's world reputation were quick to attack the magazine's credibility. For some the issue appeared to be a flashpoint calling attention to upcoming climate talks between Canadian Prime Minister Stephen Harper and US President Barack Obama, while for others the article simply added to a long list of grievances against the oil extraction site. Liberal Party leader Michael Ignatieff claimed that although the oil sands projects needed cleaning up, but haughtily insisted he would not stoop to 'take lessons' from *National Geographic.*[22] The piece even spilled over into old politics: after the regional Roman Catholic

[21] The human product 'tar' is in fact a misnomer for the naturally occurring bitumen sands. "Canada needs the oil sands," *The National Post* (Toronto), 26 February 2009.
[22] "Tories, Liberals defend oil sands," *The Toronto Star* (Toronto), 25 February 2009.

church came down against the oil sands, the Anglican Bishop of Athabasca rallied his flock to support the oil sands project against the 'sensationalism' of the magazine.[23]

Numerous articles are written every year on the pros and cons of the oil sands development and receive little public attention. For example, a damning report on water pollution in the Athabasca basin by renowned University of Alberta scientist David Schindler sailed past the popular media with barely a moment's concern.[24] Likewise, a report linking high rates of cancer at Fort Chipewyan downstream from the development site only garnered wide concern when a scandal broke over the credentials of the doctor leading the investigation. Something different about the *Geographic* article made for national concern: it was not what the magazine *said* about Canada's Athabasca oil sands project that mattered, but what its pictures *showed*. 'Scraping Bottom' caused people not only to consider the rate of environmental transformation taking place at Fort McMurray, it forced them to consider how they made truth and sense from their observations. Like Burpee's original 1935 article, Robert Kunzig's *National Geographic* piece greeted readers with an airborne image of verdant boreal landscape, dark blue streams winding among black spruce and reeds. However, opposite the sublime wilderness spread a moonscape of nameless roads winding through desolate industrial landscape. The visual narrative clearly aimed to conjure a moment of paused reflection over the scale and pace of landscape change: the forest is obliterated; no trace of life remains and seemingly no hope of it returning exists within the frame. It was into this representational trope of portraying landscape change that experts on the oil sands weighed in over Canada's national news outlets:

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[23] K. Cryderman, "Anglican bishop has faith in oilsands; John Clarke says its is time to support the people of Fort McMurray," *Edmonton Journal* (Edmonton), 18 March 2009.
[24] E. N. e. a. Kelly, Oil sands development contributes polycyclic aromatic compounds to the Athabasca River and its tributaries, *Proceedings of the National Academy of Sciences* 106 (2009) 22346-22351.

the 'before and after exhibits,' according to one Natural Resource Defence Council lawyer, demonstrated "[w]hen you see what's actually happening, you understand the magnitude of the environmental and public health problems."[25] The *National Post* countered by describing the narrative imagery as a fabricated ploy where viewers willing to drink in the pristine scenery of the 'before' were confronted by the 'after' image: "a ground zero of environmental devastation."[26] After well-known Canadian journalist Rex Murphy told his audience the images were pornographic sensationalism without real knowledge, Gary Lamphier took the point further when he editorialized in the *Edmonton Journal* it was time to face the fact that "no one reads *National Geographic*. Like *Playboy*, it's all about the pictures."[27]

This dissertation agrees with Lamphier, it is all about the pictures. But the lurid gazing he alludes to and the lure of seeing landscapes have different histories: the debate over the oil sands images mirrored one that occurred a century earlier over visual instruction in geography teaching. As one *Edmonton Journal* reader eventually pointed out, calling the *Geographic*'s images smutty 'eco-propaganda' made no sense—if the pictures were 'naked' it was because they were "photographs of reality," mechanical reproductions free of bias and therefore outside human reproach.[28] Seeming opponents in the Canadian Association of Petroleum Producers (CAPP) sided with the environmentalists over the nature if not the interpretation of the photos. Considering the *National Geographic* images they agreed the 'before and after' sequencing was useful, but complained that the true reality was obscured: "What readers do not see is that all oil

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[25] "Prentice defends oilsands following *National Geographic* article," *CBC News* (25 February 2009.
[26] D. Martin, "A black eye that may never fade; Alberta struggles to put positive spin on coverage," *The National Post* (Toronto), 25 February 2009.
[27] G. Lamphier, "Oilsands will never get a fair shake," *Edmonton Journal* (Edmonton), 2 March 2009.
[28] T. Stoll, "Picture worth a thousand words," *Edmonton Journal* (Edmonton), 2 March 2009.

sands developments are ultimately reclaimed and returned to a natural state."[29] In a press release the group ran their own image sets of pristine marshes that once were tailings ponds, bison grazing on reclaimed land, and hikers strolling over a former overburden dump. Industry and environmentalist responses to the pictures both traded on this perception that photographs are objective depictions incapable of communicating political messages, and therefore able to tell clear stories about the way people use the world and interact with nature. Both also urged image-viewers to use their own eyes as the arbiters of truth in order to form the correct mental picture of the scene, masking the work of the photographer framing a view, the history of vision and visualization in the Canadian imaginary, and the coproduction of a type of objective observer able to make sense of the scene.

Both Burpee's 1935 experiences in Fort McMurray and the upset surrounding the 2009 *National Geographic* images are about points of view. Together they illustrate the spatial history of twentieth-century Canada by revealing connections between matters of truth, vision, objectivity and the way we make sense of history and geography. On the other hand, they may be compared at opposite ends of the twentieth century, on either side of many of the transformations described in this dissertation concerning the changing role of objects and the kinds of subjectivity they engendered. The 'point of view' in this case is not opinion, but the position of the observer. In this framework we can understand why for both proponents and critics of the oil projects, remotely-sensed images (photographs taken by orbiting satellites instead of humans) were parsed as the only *true* records of environmental change. Both

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[29] D. Collyer, "National Geographic's Article on Canada's Oil Sands: An Incomplete Perspective," *Canadian Association of Petroleum Producers*, last modified 2013, accessed 1 December 2010, http://www.capp.ca/aboutUs/mediaCentre/CAPPCommentary/Pages/NationalGeographic,March2009Issue.aspx#E2000IkqoIwVdU2006.

connected the truthfulness of vision to the bodily locale of the observer. To critics, the fact that the oil sands can be seen by the 'naked eye' from a satellite orbiting in space was argument enough that their environmental impact had gone too far – no explanation beyond this simple claim was necessary.[30] However, using the same way of seeing to advocate a different message, Shell Canada embarked on a project with the European Space Agency to index satellite imagery with GIS data to "allow before-and-after records of the effects of Shell's oil sands activities."[31] Using photographs and data visualization, the company overlaid maps, images, and information to visually argue remediation efforts were actually creating more green space than removing it. The value and truth of both ways of seeing depended on fantastic imagination of body of the observer: in one case imagined to be orbiting the planet, the other disappeared behind the technology and geovisualization.

7.3 Visualizing History

Burpee's story and the modern debate over the oil sands demonstrate that the significance of spatial history is not confined to the past. Both episodes show how history and geography were seen or invoked to make sense of change and provide arguments about the direction of the future as Canadians of different periods tried to understand the meanings and contradictions in the advancements of modernity seemed to encapsulate. However, the remote wilderness frontier was not the only place these forces seemed evident to contemporaries. A return to the centres of calculation at Ottawa reveals further parallels to the long arc of twentieth-

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[30] That the extent of extraction can be seen from space is a widespread claim repeated across many environmentalist blogs on the World Wide Web. For environmental advocacy through remotely-sensed images, see "Growth of the Tarpits," *Oil Sands Truth: Shut Down the Tar Sands*, last modified accessed 10 December 2010, http://oilsandstruth.org/growth-tarpits.

[31] S. Canada, *Land and Reclamation. Canada's Oil Sands: Issues and Opportunities,* Calgary, 2010, 10.

century modernization. Where modernity in the periphery took shape in terms of space, speed and distance, in the metropoles it was read in terms of time, order and efficiency. Citing these same principles, in April 2012 the Government of Canada introduced Bill C-38, otherwise known as the 'Jobs, Growth and Long-term Prosperity Act.' This immediately controversial omnibus bill packaged together 70 different pieces of legislation and included 700 clauses relating to the federal budget. Along with reductions in funding for Parks Canada, the end of foreign aid programs, the reduction of climate scientists working in Environment Canada, the introduction of mandatory minimum sentences for all crimes, cuts to public pensions, the cancellation of health care for refugees, sweeping new internet and surveillance powers for the police, and a new round of corporate tax breaks, the bill took aim at the service profile of Library and Archives Canada (LAC). Reaching into the heart of the institution, the bill mandated that 215 of 1065 employees were to be laid off, including one-third of the 60 archivists assigned to deal with non-government records. An additional 450 workers saw their job responsibilities changed by the draconian cuts.[32]

Justified as a financial austerity measure aimed at streamlining bureaucracy, the assault on LAC was part of a series of changes underway at the archives since 2004. In that year, they merged with the national library (founded in 1953) to form Library and Archives Canada. The move, said then-head archivist Ian Wilson, was part of a growing world-wide trend to create a 'new kind of knowledge institution.'[33] Rather than focus on the acquisition and analysis of materials, Wilson announced the LAC's plans for the large-scale digitization of institutional

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[32] The bill also eliminated the National Archival Development Program responsible for funding acquisition and preservation programs at over 100 local archives in Canada.
[33] I. Wilson, "Creating a New Kind of Knowledge Institution," *Library and Archives Canada*, last modified accessed 1 June 2013, http://www.collectionscanada.gc.ca/obj/012012/f012012/012001-e.pdf.

holdings and a "shift [in] its service model from a largely in-person approach to service to a largely unmediated (self-serve) approach focused on enhanced virtual access to content and services."[34] The language of the changes, phrased in neoliberal corporate jargon, was as clear as the writing on the wall: the archives would be moving from a public civil service to a private sector model. It would become responsive to market demands, offer user-defined services, and promote fiscal accountability. If any doubts about the nature of this change lingered, they were dispelled in 2009 when Daniel Caron, an economist and career administrator from Human Resources, was appointed Wilson's successor.

The current twenty-first-century reorganization of the archives is by no means the first round of radical changes. The establishment of the Archives Branch by the new Dominion in the 1872 was clearly bound up with the modernization of the state. Then the role of the institution was to collect documents relating to the government and history of the nation. As the branch grew after Brymner's retirement in 1902 an historian usually held the position of archivist overseeing development and acquisition.[35] In 1904 this role fell to Arthur Doughty, an enthusiastic visionary who again modernized the institution by creating the Public Archives of Canada, widening the scope of collecting to include works of national cultural significance alongside the papers of government administrators. The populist addition of 'public' to the name was intentional - like his friend and colleague Lawrence Burpee, Doughty believed that historical record collections should be open and available to all.[36] Doughty's own dream was to

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[34] "LAC begins implementation of new approach to service delivery " *Library and Archives Canada*, last modified 9 May 2012, accessed 1 June 2013, http://www.bac-lac.gc.ca/eng/news/Pages/lac-begins-implementation-of-new-approach-to-service-delivery.aspx.
[35] Lacasse and Lechasseur, *The National Archives of Canada: 1872-1997*, 2.
[36] Doughty and Burpee had worked together on the latter's historical atlas project. Burpee also spoke often and publically in support of the PAC, deepening the historical-archival relationship he had began with Brymner. L. J.

create a 'total archives' at Ottawa not limited to documents but including other objects like paintings, photographs, maps, and sound recordings. Part of his model of efficiency included a separate role for the new archival service, and during his tenure (in a move intended to increase the visibility of the archives as a historical and educational institution) he oversaw construction of a new building devoted exclusively to the preservation of Canada's past.[37]

Arthur Doughty's total vision for the archives directed the institution into a role somewhere between the collective memory of the national psyche and a filing cabinet for various branches of government. Many different ways of making archives modern have been imagined, but an underlying theme connects Wilson's logic with Doughty's dreams of 1904 to the challenges Brymner's Archives Branch confronted in 1872. Each round of modernization was based on a different geographical imagination of the country. If Brymer's geographical challenge was how to centralize the documentary past at Ottawa, Doughty's was what to do once it was centralized: he needed to bring people to the archives to see the national heritage his predecessor had collected from them. From the vantage point of neoliberals in the early twenty-first century, both Brymner's centralization of documents and Doughty's centralization of people needed to be reversed. Advances in telecommunications seemed to have dissolved the friction of distance, as the field, the archive, and the frontier had compressed into a singular web of hard drives, databases, and search engines. The commitment to digitize the LAC's collections followed from the argument that most Canadians were accessing the holdings on their computers

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Burpee, *A Plea for a National Library,* Toronto, 1911; L. J. Burpee, Restrictions on the use of historical materials, *Annual Report of the American Historical Association for 1914* 1 (1916) 314-328; L. J. Burpee, Check-list of Canadian public documents, *Papers of the Bibliographical Society of America* 8 (1914).

[37] G. Blais and D. Enns, From paper archives to people archives: public programming in the management of archives, *Archivaria* 1 (1990); J. Burant, Doughty's dream: A visual reminiscence of the Public Archives, *Archivaria* 1 (1999); D. German, Doughty on the use and utility of government information and archives, 1933, *Archivaria* 70 (2010).

– by the simple logic of irrefutable numbers the 2,000 or so researchers who came to the building on Wellington Street in Ottawa each month were hugely outnumbered by the near 500,000 visits paid the LAC website in the same period. While the problem of geography seemed to have shifted, the problems posed by the material and physical nature of the documents was also being reconsidered. Archival materials were no longer trapped and scattered in far-flung places around Canada and the old geography of Britain's empire; now they were trapped in physical form in the archival boxes stored in the records vaults of the Preservation Centre in Gatineau, Quebec. The new spatial challenge was how to broadcast these documents, so cleverly centralized, back to the frontiers of the nation. In a speech describing how the new 'modernization cycle' of Canada's preservation services would include public-private partnerships, a multitude of webcasts and digital videos, and a new code of professionalism, Caron argued that the changes would allow the archives to function in a 'landscape' where, "regardless of geographic location, from coast to coast to coast, anyone can access as many of our information resources as possible directly from our Internet site or from one of our partner's sites."[38]

In the eyes of the government, these changes would bring the Canadian archives into the twenty-first century and the digital age. Archivists, historians, and other 'users' of LAC services pointed out that the double-manoeuvre of modernization also severely undercut the institution's mandate to preserve Canada's cultural heritage because it significantly reduced funding for acquisitions. They noted that the new 'code of conduct' under which LAC employees worked (little different from that pertaining to other civil servants) reduced the role of

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[38] D. J. Caron, "Shaping our Continuing Memory Collectively: A Representative Documentary Heritage," *Library and Archives Canada*, last modified accessed 2 February 2014, http://www.collectionscanada.gc.ca/whats-new/013-449-e.html.

archivists as knowledge producers. Much like late-nineteenth-century governmentality, the spaces of the archive were to be used to produce a certain kind of bureaucrat and a certain kind of state – one where employees were positioned inside neoliberal surveillance mechanisms (encourage to report on one another) and restricted from speaking publicly. Most poignantly however, critics of the recent initiatives pointed out that information and material go together. The Canadian Association of University Teachers launched an umbrella 'Save the Library and Archives Canada' campaign calling for public support to oppose the changes. Their website, *Save LAC*, features a compelling set of images conveying how the new mandate limiting collection and promoting digitization would affect researchers, teachers, and Canadians. In the looping slideshow, a researcher finds the material elements of the past gradually disappearing from his or her hands until they are left with nothing.

The *Save the LAC* pictures tell a different kind of spatial history. Here, the meanings of progress and providence imagined through geography are of less importance than the role of objects as bearers of the ties between landscape and memory. Thus while a close inspection of the *Save LAC* images suggests the material shown relates to the Slave River area on the border between Alberta and the Northwest Territories (downstream from Athabasca Landing and the tar sands beyond Fort McMurray) and that the people pictured are likely Dene, the real point is to show the kinds of work photographs and maps accomplish. The central shot of what may be a family gathering is clearly staged for the camera, with smiling faces testifying to the purposeful capture of an intimate moment. In another the view is directed indiscriminately towards a summer encampment, this time demonstrating photography as a general record, able to picture society and culture in the subarctic north and what it means to live on the land. Yet another is the seemingly requisite oblique aerial view of what appears to be an old fur post settlement, with

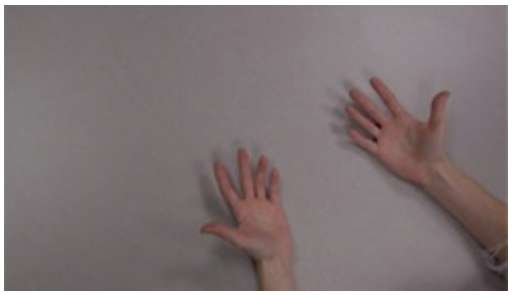
Frame 1

Frame 5

Frame 3

Frame 6

Frame 4



Frame 8

Fig. 53. Illustrating the disappearance of the past

Source: Canadian Association of University Teachers, *Save Library & Archives Canada*, 2011, http://www.savelibraryarchives.ca/ Last Accessed: 02 January 2014.

its whitewashed buildings gleaming in the grassy clearing beside the waterway. Collectively the photographs show the different connections between observation and knowledge making, demonstrating how they visualize history and geography. Yet each photograph is vested with different kinds of information. Different scales and ranges of vision convey different relationships with the land, while the mixture of black and white images alongside colour-washed of a more recent vintage depict what Ernest Brown recognized as the camera's potential to document time. While the photographs testify to the character of the land and the people, the maps offer a more objective depiction of resources, topography, and land cover. A section of a topographic survey of the Klewi River lies underneath a yellow choropleth of the Peel. Here again, the *Save LAC* set is framing more than the maps as representations, emphasizing their role as objects containing and conveying a range of knowledge. The relationship between the map and the photographs is also pregnant with possibilities: the pictures capture something of lives lived in the NWT, the inherent scientific objectivity of the map establishes a connection with survey and areal distributions, offering a powerful geographical portrayal of relational space. As the images in the set loop through, these relations are gradually disassembled until the researcher is left with nothing. The *Save LAC* image series contains no words, but it offers a larger narrative about the dangers of digitization and modern service-provision: as each real object is removed, the capacity to make connections is reduced, and the ability of society to remember itself vanishes. This is what Hugh Dempsey found at the Sarcee Indian Reserve as histories and meanings turned to ashes and evaporated into space. Like Dempsey's Sarcee Agency documents, the maps and photographs in the image series affect us because we associate them with traces of the past. As they disappear, the spatial history presented in the *Save LAC* slides becomes the degenerate opposite of the one told by Richard Ruggles (Fig. 1). Rather than the

light of knowledge advancing through the darkened frontier, as each object is taken away the cloak of ignorance returns, laid down at the centre of knowledge in Ottawa. The image series also relates directly to fears expressed in any scheme for 'progress;' that modernization carries with it the danger that the faster we go, the more we change, the less able we are to grasp the pace of the change, the less connection we have with the past. Although he did not utter it, this same fear must have lingered in Burpee's mind as he stood in Fort McMurray envisaging the oil boom just over the horizon.

Spatial histories and the objects they are carried through let us see how previous societies understood the past, witnessed the present, and imagined their future. They also provide a means for us to recover the view from their horizon, and to see how it may comprise and inform our view of Canada today. Thus the potential for studying ourselves by thinking about the ontology of objects is a promising avenue, even if it is fraught with challenge. In this regard, it is often difficult to think about material things that contain knowledge because the meanings they possess as representations are at the surface of their being. As Windbag and Goulash would have it, when we look at documents, maps, and images, we see the projection of information, not the matter and energy the thing itself consists of. A simpler example comes from Roland Barthes, who found much the same thing in his classic study of photography when he suggested that "a photograph is always invisible, it is not *it* that we see."[39] What Barthes meant is that what the photograph *is* as an object always recedes behind what it *shows* as a representation. Although I recognize the cultural problem Barthes was pointing to, I disagree with his interpretation. By studying the historical geography of knowledge we can elucidate what is

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[39] Barthes, *Camera Lucida*, 6.

otherwise invisible. We can see how like Windbag and Goulash's computer, the objects that carry and represent information are also arrangements of matter and energy that tell complicated stories. Maps are a combination of physical efforts of the cartographer, the information in the surveyor's ledger, the ink and dyes, the paper mapsheets, the rulers and stencils. Modern versions include the circuitboards of a computer, the magnetic 1s and 0s written onto the hard disks, the point-and-click interface of the display, and the live update of the GPS satellites. These combinations allow maps to offer a geographical representation of the world, held in place by the coordination of physical material, observed knowledge, and the labour of the geographer. Indeed, thinking about the ontology of objects that carry knowledge tells us a lot about how things are held in place: about how relationships between the world and its representation are understood, about how the idea of modern Canada as a nation of regions evolved through various ways of seeing and understanding space, and about the role of geography in creating and spatializing knowledge.

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