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BREAKING THE ICE: PROSPECTS FOR CANADIAN-AMERICAN INSTITUTIONAL CHANGE IN THE GOVERNANCE OF THE NORTHWEST PASSAGE

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BREAKING THE ICE:
PROSPECTS FOR CANADIAN-AMERICAN INSTITUTIONAL CHANGE
IN THE GOVERNANCE OF THE NORTHWEST PASSAGE

A Dissertation
Presented to
the Graduate School of
Clemson University

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy
Policy Studies

by
Jeffrey Randall Parkey
December 2010

Dr. Robert Becker, Committee Chair
Dr. Bruce Yandle
Dr. Michael Morris
Dr. James London
ABSTRACT

This study assesses four institutional approaches to governing the use of the Northwest Passage, including the current rules in use. The assessment is conducted through the use of expert interviews, a review of the theoretical literature, and an examination of comparative cases. Because of significant environmental changes underway in the Arctic region, institutional change for Northwest Passage management is receiving increased attention. Due to the potential environmental and security impacts of regularized ship transits through the Northwest Passage, a number of informed observers have discussed the need for considering alternative means of governing the waterway. The advantages and disadvantages of institutional alternatives are investigated here. The analysis suggests maintenance of the status quo institution appears to be the most likely outcome in this case.
DEDICATION

For my wife Maleena, and parents Linda and David.
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# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>TITLE PAGE</td>
<td>i</td>
</tr>
<tr>
<td>ABSTRACT</td>
<td>ii</td>
</tr>
<tr>
<td>DEDICATION</td>
<td>iii</td>
</tr>
<tr>
<td>ACKNOWLEDGMENTS</td>
<td>iv</td>
</tr>
<tr>
<td>LIST OF TABLES</td>
<td>vii</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>viii</td>
</tr>
<tr>
<td>CHAPTER</td>
<td></td>
</tr>
<tr>
<td>1. INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>The Northwest Passage Governance Dispute</td>
<td>3</td>
</tr>
<tr>
<td>Institutions</td>
<td>6</td>
</tr>
<tr>
<td>Competing Claims</td>
<td>8</td>
</tr>
<tr>
<td>Institutional Change</td>
<td>12</td>
</tr>
<tr>
<td>The Plan of this Study</td>
<td>15</td>
</tr>
<tr>
<td>Resource Disputes and the Canadian-American Relationship</td>
<td>16</td>
</tr>
<tr>
<td>2. THE CHANGING ARCTIC AND THE NORTHWEST PASSAGE</td>
<td>22</td>
</tr>
<tr>
<td>Environmental Change in the Arctic</td>
<td>22</td>
</tr>
<tr>
<td>Arctic Resources and the Law of the Sea</td>
<td>28</td>
</tr>
<tr>
<td>Resources Becoming</td>
<td>35</td>
</tr>
<tr>
<td>The Northwest Passage in a Changing Arctic</td>
<td>37</td>
</tr>
<tr>
<td>Policy Directions</td>
<td>49</td>
</tr>
<tr>
<td>The Arctic Cooperation Agreement</td>
<td>60</td>
</tr>
<tr>
<td>3. INTERVIEWS WITH CANADIAN AND AMERICAN NORTHWEST PASSAGE EXPERTS</td>
<td>66</td>
</tr>
<tr>
<td>Interview Format</td>
<td>67</td>
</tr>
<tr>
<td>Interview Summaries</td>
<td>68</td>
</tr>
<tr>
<td>Discussion</td>
<td>79</td>
</tr>
</tbody>
</table>
Table of Contents (Continued)

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.</td>
<td>THE BENEFITS OF INSTITUTIONS AND THE COSTS OF THEIR CHANGE</td>
<td>85</td>
</tr>
<tr>
<td></td>
<td>Concepts of Institutions</td>
<td>87</td>
</tr>
<tr>
<td></td>
<td>Institutional Models</td>
<td>89</td>
</tr>
<tr>
<td></td>
<td>Beneficial Features</td>
<td>98</td>
</tr>
<tr>
<td></td>
<td>Problems and Preferences</td>
<td>102</td>
</tr>
<tr>
<td></td>
<td>Costs of Institutional Change</td>
<td>113</td>
</tr>
<tr>
<td>5.</td>
<td>CONCLUSION</td>
<td>123</td>
</tr>
<tr>
<td></td>
<td>Issue Linkage</td>
<td>123</td>
</tr>
<tr>
<td></td>
<td>Resources and Institutions</td>
<td>127</td>
</tr>
<tr>
<td></td>
<td>Other Actors</td>
<td>135</td>
</tr>
<tr>
<td></td>
<td>Other Models</td>
<td>138</td>
</tr>
<tr>
<td></td>
<td>A “Dynamic Quo”?</td>
<td>142</td>
</tr>
<tr>
<td>APPENDICES</td>
<td></td>
<td>146</td>
</tr>
<tr>
<td>A:</td>
<td>Transits of the Northwest Passage 1906-2004</td>
<td>147</td>
</tr>
<tr>
<td>B:</td>
<td>The Arctic Cooperation Agreement of 1988</td>
<td>151</td>
</tr>
<tr>
<td>C:</td>
<td>Interview Data: Canadian Experts</td>
<td>153</td>
</tr>
<tr>
<td>D:</td>
<td>Interview Data: American Experts</td>
<td>162</td>
</tr>
<tr>
<td>REFERENCES</td>
<td></td>
<td>170</td>
</tr>
</tbody>
</table>
# LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>Recent Northern Strategy Commitments, Projected Costs and Revenues</td>
<td>55</td>
</tr>
<tr>
<td>2.2</td>
<td>Recent Northern Strategy Commitments, Costs Undetermined</td>
<td>56</td>
</tr>
<tr>
<td>3.1</td>
<td>Benefits and Costs of the Northwest Passage as Internal Waters</td>
<td>80</td>
</tr>
<tr>
<td>3.2</td>
<td>Benefits and Costs of the Northwest Passage as International Strait</td>
<td>81</td>
</tr>
<tr>
<td>4.1</td>
<td>Members and Permanent Participants of the Arctic Council</td>
<td>108</td>
</tr>
<tr>
<td>4.2</td>
<td>Observing States and Organizations of the Arctic Council</td>
<td>108</td>
</tr>
<tr>
<td>4.3</td>
<td>Alternatives and Preferences</td>
<td>112</td>
</tr>
<tr>
<td>5.1</td>
<td>Benefits and Costs of Institutional Models</td>
<td>129</td>
</tr>
<tr>
<td>5.2</td>
<td>Benefits and Costs of the Arctic Cooperation Agreement</td>
<td>130</td>
</tr>
</tbody>
</table>
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>The Northwest Passage</td>
<td>2</td>
</tr>
<tr>
<td>1.2</td>
<td>The Northwest Passage “Open” August 29, 2007</td>
<td>11</td>
</tr>
<tr>
<td>2.1</td>
<td>The Arctic</td>
<td>23</td>
</tr>
<tr>
<td>2.2</td>
<td>Arctic Ice Extent and Concentration 1979 - 2007</td>
<td>25</td>
</tr>
<tr>
<td>2.3</td>
<td>UNCLOS Jurisdictional Zones</td>
<td>30</td>
</tr>
<tr>
<td>2.4</td>
<td>Amundsen’s Northwest Passage Map 1903-1906</td>
<td>39</td>
</tr>
<tr>
<td>2.5</td>
<td>Transits of the Northwest Passage 1906-2004, by Decade</td>
<td>40</td>
</tr>
</tbody>
</table>
CHAPTER ONE

INTRODUCTION

A new allocation of rights between Canada and the United States to the Northwest Passage has not occurred.

This condition prevails despite incremental Arctic ice loss from 1979 to the present; record-setting Arctic ice loss in 2005; record-breaking Arctic ice loss two years later in 2007;¹ and continued serious losses in 2008² and 2009.³ This condition prevails, also, despite numerous calls for institutional change from experts, scholars, and even government officials close to the situation (e.g. Byers, 2009; Charron, 2004, 2005a, 2005b; Flemming, 2008; Griffiths, 2008; R. Huebert, personal communication, February 30, 2009; Kraska, 2007; J. Kraska, personal communication, February 8, 2010; C. Kirkey, personal communication, December 1, 2009; M. Treadwell, personal communication, November 9, 2009; I. Townsend-Gault, personal communication, March 20, 2009; D. VanderZwaag, personal communication, April, 2, 2009; Young, 1987).

According to these commentators, the global warming-induced meltdown in the Arctic will create an influx of ships transiting the “opened” Northwest Passage, seeking to capitalize on the reduced costs of inter-oceanic transport. But besides carrying valuable cargoes to markets, these pending transits may also carry negative consequences – for the environment of the Northwest Passage and the wider Arctic, for local residents, for vessel

² “Arctic sea ice settles at second lowest, underscores accelerating decline,” Arctic Sea Ice News and Analysis, National Snow and Ice Data Center, http://nsidc.org/arcticseaicenews/2008/091608.html
safety, for continental security, and for Canadian territorial sovereignty and national identity. In the face of these mounting concerns, it is now imperative that Canada and the United States resolve their long-standing dispute over the governance of Northwest Passage use.

As of this writing however – indeed since 1988, when the existing rules were made – there has been no change to the structure of rights for bilateral use of the Northwest Passage (Figure 1.1) despite the seriousness of the surrounding issues. How can this situation be explained? How, given the severity of Arctic warming reported by science and the problems associated with transit shipping mentioned above, can the absence of a new, and ideally better, form of governance between Canada and the United States for the Northwest Passage be explained?

Figure 1.1: The Northwest Passage

Source: NASA
This work provides an answer by examining the conditions and processes involved in the development, selection, and conversion from one institution for governing a particular situation to a different one. That is, by studying *institutional change* – its process and prospects. How and why does institutional change occur? And how and why does it *not*? This study offers the case of the Northwest Passage, the icy waterway through Arctic Canada that connects the Atlantic and Pacific Oceans, as one that is exemplary for exploring these questions.

**The Northwest Passage Governance Dispute**

It is hard to believe that the phrase “hot, flat, and crowded” (Friedman, 2008) could ever be applied to Earth’s Arctic region. But today these very phenomena – global warming, mounting claims to valuable assets, and increasing numbers of Arctic actors – are converging to shape a new circumpolar reality, one for which Friedman’s terminology provides an apt description. In a flat world, resource claims can often transcend borders. As that world grows hotter and more crowded, the question of whether these claims will be dealt with in a competitive fashion or a collaborative one becomes critical.

Conflicting claims to valued resources are a common cause of governance disputes. Settling such claims through institutional allocations is a common goal of public policy. Consistent with Barzel’s (1990) distinction between the legal and economic forms of rights to property, a claim to a resource can be seen as economic ownership of an expected value (p. 91). In this view, a claim is not necessarily guaranteed by law; it is
rather an assertion of entitlement. Claims to valuable environmental resources – clean air, clean water, energy stores, a stable climate – have become increasingly important in the modern world as greater understanding of the benefits of environmental goods and services are obtained. As such, competitive, or even conflicting, resource claims may become more pronounced in a world of expanding populations, interdependent economies, enhanced social participation, and resource scarcity. This is particularly so as the modern world becomes further defined by environmental change. Under such a scenario, individuals, organizations, or nation-states may make ever-expanding claims to the expected values attached to useful environmental resources. Overlapping, competing, or conflicting claims to resources may become frequent. In these cases, the management and resolution of resource claims through the use of institutions and public policies becomes imperative.

In the present study, two Arctic states, Canada and the United States, disagree over the allocation of a commonly-claimed resource, the Northwest Passage. The Northwest Passage is the fabled waterway which stretches across Arctic Canada from the Labrador Sea in the east to the Beaufort Sea in the west. For decades, Canada has claimed the waterway as a sovereign possession. At the same time, the United States has laid claim to the Northwest Passage based on a notion of common property. The two states formulate their responses to the issue on these differing bases, and so to this point a policy of “agreeing to disagree” over use rights to the resource has been the outcome.

This dispute is not new to these states; it has been ongoing since at least the voyage of the SS Manhattan through the Northwest Passage in 1969. However the setting
for this dispute – the Arctic ecosystem – is surprisingly new. Today the Arctic zone is experiencing dramatic environmental and economic changes, causing the value of the claimed resource to rise for both states.

On the issue of the Northwest Passage, Canada and the United States experience a governance dispute (Gourevitch, 1999). Governance disputes are institutional contests, contests over rules. Which rules, and whose rules, will be used to allocate valuable resources are the fundamental questions of disputed governance. Choices among alternative rule sets for governing the Northwest Passage can be thought of as institutional outcomes – the development and selection of institutions.

Research has shown that the interests and preferences of states are important in shaping the development and choice of institutional alternatives (Frieden, 1999; Gourevitch, 1999, 2002). For this reason, this study makes observation of the interests and preferences of Canada and the United States regarding the resource in question. However, the manner in which interstate interactions occurs, the opportunities and constraints present, the history of interaction, and the previously agreed rules are also important in shaping future institutional development (Morrow, 1999; Rogowski, 1999).

Considering these aspects, the case of the Northwest Passage becomes a rich empirical example for exploring institutional development and change with respect to the allocation of environmental resources. It is used to address a broad question – how do institutions change – by investigating a narrower one – what encourages and what inhibits the development of new rules to resolve the Northwest Passage governance dispute?
Institutions

The divergence in Canadian and American claims over the Northwest Passage is illustrative of the larger uncertainty surrounding the future of Arctic resources. The world is wondering if forthcoming resource management efforts on the part of Arctic states will occur in joint or individualized fashion. Secretary of State Hillary Clinton’s recent comments to the Joint Session of the Antarctic Consultative Treaty Meeting and the Arctic Council in Washington DC alludes to this:

The warming of the Arctic has profound implications for global commerce, with the opening of new shipping routes. It raises the possibility of new energy exploration, which will, of course, have additional impacts on our environment. And Arctic warming has already serious consequences for the indigenous communities that have made their homes there for many generations. The changes underway in the Arctic will have long-term impacts on our economic future, our energy future, and indeed, again, the future of our planet. So it is crucial that we work together (Clinton, 2009).

Increasingly over the past half century, institutions have been devised through which nations can work together, pursue cooperation, resolve conflicts and achieve more efficient and harmonious interactions. We are fortunate to live in a world that enjoys the profound benefits of such institutions. Though war, as a form of dispute resolution between nation states, has not disappeared, its use has diminished. As of this writing, sixty-five years have passed since the close of the last great global conflict which pitted so many massively-armed nations against one another. No outbreak of this type of conflict that characterized the first half of the 20th century has occurred since. More important still is the fact that this great global conflict which has not occurred has also
not been nuclear (Schelling, 2005). Some Cold War-era events signify that it could have been.

Institutions can be credited, in large measure, for these achievements. Examples of institutions range from the informal to the formal and include norms and conventions, markets for economic exchange, contracts between business firms, treaties between governments, even government itself. The development of instruments such as these in recent decades has helped to achieve this period of relative peace and societal progress.

Some scholars define institutions quite simply. Ostrom (2002) says they are “rules . . . to specify the do’s and don’ts related to a particular situation” (p. 21). For many scholars, rules are the most salient aspect of so-called institutions; rules for governing the actions of players. The provision of rules brings order to interactions between parties and helps to shape expectations. As such, institutions become mechanisms for conflict resolution, for exchange, and for cooperative efforts in addressing common concerns.

Institutions are important to the interactions of nation-states. Keohane (1984) discusses institutions as “patterns of practice,” and finds them to be significant because “. . . these patterns of practice . . . affect state behavior. Sophisticated institutionalists do not expect cooperation to always prevail, but they are aware of the malleability of interests and they argue that interdependence creates interests in cooperation” (p. 8).

When institutions are brought to bear on the allocation of environmental resources, it has been noted that they

define who has access to a resource; what can be harvested from, dumped into, or engineered within a resource; and who participates in key decisions about these issues and about transferring rights and duties to others. The stimulus for changes of institutional arrangements frequently
has been fights over the distribution of resources. Multiple types of institutional arrangements have been devised to try to reduce the problems of overuse and of free riding as well as distribution conflict (Dolsak & Ostrom, 2002, p.21).

The opposing claims to the Northwest Passage made by Canada and the United States highlight this distribution conflict. At issue are the rights, duties, access, participation, and expectations involved in Northwest Passage use, precisely as the above theorists have identified. Whether state interests and interdependence will indeed lead to cooperation, as Keohane indicates, is an important question in this study.

**Competing Claims**

The claims made by Canada and the United States to the Northwest Passage of course do reflect their own self-interests. Canada’s position is that the system of channels through the Canadian Arctic Archipelago known collectively as the Northwest Passage comprises “historic internal waters.” In this view, waters internal to Canada are subject to whatever laws and regulations the Canadian government sees fit to apply to them. These waters were included in the transfer of the Arctic Archipelago from Great Britain to Canada in 1880 and are therefore the historic entitlement of Canada (Huebert, 2001). Inuit peoples of Arctic Canada, who are now themselves Canadian, have used these waters for millennia. In the Canadian view, this fact adds greater strength to the historicity of the claim (Huebert, 2001). For the Canadian government and populace, the record clearly shows that Canadian assumption of full control over the waters of the Arctic Archipelago, including the Northwest Passage, and all activity within in them, is fully justified. In the words of one official from Canada’s Legal Affairs Bureau, “Canada
has unqualified and uninterrupted sovereignty over the waters of the Northwest Passage” (Huebert, 2001).

The United States does not dispute that the waters of the Northwest Passage are a Canadian possession. The difference, in the United States’ opinion, lies in exactly what Canada can and cannot do, under international law, with these waters. The position of the United States, which it believes represents the position of many other countries of the world, is that the Northwest Passage is an international strait, and therefore subject to international rules, notably the doctrine of transit passage which allows a relatively freer hand to transiting ships, submarines, and aircraft (Kraska, 2007). Transit passage, according to the 1982 Law of the Sea Convention cannot be impeded and coastal states can affect only international standards to regulate shipping through international straits (McRae, 2007).

The evidence supporting the view of the Northwest Passage as an international strait is that the Northwest Passage is a waterway joining two areas of high seas. According to the United States, this simple definition of an international strait under international law is wholly met in the case of the Northwest Passage since it joins Davis Strait at the eastern gate of the Northwest Passage and Beaufort Strait at its western gate (Charron, 2004). Davis and Beaufort Straits are themselves connected to the Labrador Sea and the North Atlantic, and the Beaufort Sea and the North Pacific, respectively. Taking this view, vessels that meet international shipping standards for environmental protection, crew training, and safety procedures have the right, under international law, to use the Northwest Passage freely. Moreover, in this view, Canadian regulations that add
further restrictions to vessels transiting the Northwest Passage would be incongruent with international legal standards (Huebert, 2001).

Legal and political scholars on both sides of the border have discussed the strengths and weaknesses to be found in the Canadian and American positions on Northwest Passage governance (see in particular Kraska, 2007; McRae, 2007; Pharand, 1988). Cases ruled on by the International Court of Justice provide precedents for both sides.\(^4\)\(^5\)

Still, neither Canada nor the United States appear ready to move from their respective positions. Charron (2004) in fact declares the situation a “legal stalemate” noting, “. . . all evidence suggests a strictly legal solution to the Passage is unlikely” (p. 3). She and several other scholars (Byers, 2009; Flemming, 2008; Griffiths, 2008; C. Kirkey, in personal communication, December 1, 2009; Young, 1987) have recommended that Canada and the United States work together to solve the Northwest Passage dispute by devising a new allocation rights to the resource.

What these scholars call for, essentially, is the development of a new institution to guide the use of this resource. Without the implementation of a new institutional arrangement, these scholars argue, future problems could emerge. Rising terrestrial and marine temperatures in the Arctic region linked to the phenomenon of global warming have caused the melting of the polar ice cap. Between 1979 and 2007, Arctic ice cover declined by 40%; twenty percent of this loss occurred between 2005 and 2007 alone.\(^6\)

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\(^4\) Corfu Channel Case (Merits), http://www.lawofwar.org/corfu_channel_case.htm
Indeed, in the summer of 2007 the deepest and most preferred route through the Northwest Passage, using Parry Channel through McClure Strait, was freer of ice than was previously known to science (Figure 1.2). Many scientists believe that the Arctic meltdown could have serious environmental repercussions for not only the Arctic region but the whole of the planet as well. As this warming encourages continued Arctic ice remission, it is conjectured that the Northwest Passage will ultimately become what it was always hoped to be – an international shipping route joining the Atlantic and Pacific Oceans, a global economic resource.

Figure 1.2: Northwest Passage “Open” August 29, 2007

Source: NASA
The initiation of industrial shipping in the Northwest Passage however is for many an unwelcomed prospect. Transit shipping is viewed as a threat to the fragile ecology of the unique Arctic region, and to the unique way of life of indigenous Arctic residents. The situation is compounded by the competing claims of Canada and the United States for governing Northwest Passage use – do national or international rules apply? Shipwrecks, environmental damage, even terrorism scenarios have all been discussed as potential consequences of a Northwest Passage that is “opened” to shipping transits when this type of administrative confusion reigns.

Institutional Change

With uncertain conditions and potential negative consequences attached to the pending use of the Northwest Passage, calls for institutional change may not be surprising. According to Ostrom (1990) an institutional change is, “A change in any rule affecting the set of participants, the set of strategies available to participants, the control they have over outcomes, the information they have, or the payoffs” (p. 140). Strategies, control, and payoffs are apparent in Furubotn and Pejovich’s (1974) comments on the conditions that surround changing institutions:

To engage in . . . new activities . . . requires the formation of definite contractual agreements that allow the participants to claim the potential benefits foreseen . . . if individuals are to appropriate the potential gains from innovative ventures, it may be necessary to change the content of contractual agreements; but the acceptance of changes in contractual forms must lead to a new or modified set of property rights assignments. *Changes in property rights are triggered by the interaction between the*
prevailing property rights structure and man’s search for ways of achieving more utility (p. 9, italics in original).

Furubotn and Pejovich’s representation of institutional change through the idea of contract renegotiation is also evident in the foundational work of North (1990). He says,

Institutions change, and fundamental changes in relative prices are the most important source of that change . . . the process of institutional change can be described as follows. A change in relative prices leads one or both parties to an exchange, whether it is political or economic, to perceive that either or both could do better with an altered agreement or contract. However because contracts are nested in a hierarchy of rules, the renegotiation may not be possible without restructuring a higher set of rules (or violating some norm of behavior). In that case, the party that stands to improve his or her bargaining position may very well attempt to devote resources to restructuring the rules at a higher level (p. 86).

Important to this study is North’s related comment that, “changes in bargaining power lead to efforts to restructure contracts, political as well as economic” (p. 85).

Applying the above logic to the present case indicates the potential for contracts to form between Canada and the United States for the realization of emergent Arctic resource benefits, particularly ones connected to the Northwest Passage. But as Ostrom (1990) and Dolsak and Ostrom (2002) point out, potentiality in contract formation does not mean causality. Dolsak and Ostrom (2002) note that:

Designing institutions . . . is a costly effort. Resource users will devise new institutions for managing that resource or change existing rules governing its use when the perceived benefits of the change in rules exceed the costs associated with creating the rules and with the change of the resource use pattern (p. 21).

Ostrom’s (1990) work on choosing among institutional alternatives leads her to the belief that:

. . . individuals compare the net flows of expected benefits and costs produced by the set of status quo rules, as compared with an altered set of
rules. To explain institutional change, it is therefore necessary to examine how those participating in the arenas in which rule changes are proposed will view and weight the net return of staying with the status quo rules versus some type of change (p. 142).

Of these rule changes, she says “transforming existing rules can . . . be very costly” (p. 141), and goes on to say that:

The costs of changing the rules vary substantially from one rule to another, from one political regime to another . . . and they also vary over time as participants and conditions change. Whether or not it will be costly to achieve any institutional change will depend on many variables . . .” (p. 140-141).

Dolsak and Ostrom (2002) further suggest that even when net positive benefits accompany a rule change, the change may not come. Their work indicates that at times, “. . . motivation for changing the rules governing a resource is, however, not always sufficient to bring about such a change” (p. 21).

Juxtaposing the ideas of these scholars of institutional change with the recent calls for modification of Northwest Passage governance creates some tension for policy analysis. It is possible that contracting for the allocation of Arctic resources, like the Northwest Passage, will occur. It is possible that new institutions to guide resource use will be innovated. But it is also possible that, despite the benefits, consensual contracts may not form. New rules may not be designed; existing institutions may be maintained instead. Claimants could decide to interact in a competitive or even conflicting fashion regarding Arctic resources. The theorists of institutional change like North and Ostrom draw attention to the fact that both benefits and costs accompany interactions such as contracting, rulemaking, and institutional formation and change. Institutional change
theorists recognize that outcomes can depend heavily on the relative weights assigned to these two factors.

The Plan of this Study

To begin an examination of institutional change for Northwest Passage governance, the following chapter presents an overview of the Arctic and the environmental change underway in the region, and also presents the Northwest Passage case. It notes historic attempts to transform the Northwest Passage into a commercial resource, the prospect that it is now becoming such a resource due to Arctic environmental change, and its uncertain status under international law. Chapter 3 presents the results of interviews conducted with Canadian and American academics and government officials who have expertise in Northwest Passage affairs. These interviews provide a subjective evaluation of Canada and the United States’ respective positions on Northwest Passage governance. The benefits and costs of current and alternative approaches are noted. Informed by these interview results and findings from the scholarly literature on institutional change and strategic choice, Chapter 4 analyzes institutions as both solution and problem in the Northwest Passage governance dispute. The final chapter summarizes the results of the analysis and makes concluding remarks.

Having laid out this research plan, it would be remiss to move forward without some characterization of past and present resource governance disputes between these neighbors, and their outcomes. The final section of this chapter briefly samples this record to better contextualize the present work.
In a 1972 speech in Ottawa, then American president Richard Nixon proclaimed the “special relationship” that existed between Canada and the United States was dead. Nixon told the Canadian parliament that, “It is time for us to recognize that we have very separate identities . . . we have significant differences, and . . . nobody’s interests are furthered when these realities are obscured” (Granatstein & Bothwell, 1991, p. 71). Ever since, scholars of Canadian-American relations have wondered how true the president’s words may be (e.g. Elliot-Meisel, 1999; Muirhead, 2004). Notions of American exceptionalism and the loss of Canadian identity at the hands of its neighbor have caused some to doubt whether the relationship was all that special to begin with (see Campbell & Finn, 2006; Thompson & Randall, 2008 as two recent examples).

Special or not, there are some aspects of the relationship that do appear to be doing well. Each state is the other’s number one trading partner, with approximately $1.5 billion in trade occurring between them each day (D. Wilkins, in personal communication, September 9, 2009). According to Statistics Canada, almost $2 million in goods and services cross the border every minute. In 2008, there was $310.7 billion worth of Canadian investment in the United States, and $293.6 billion worth of American investment in Canada – roughly equal amounts. The United States receives more oil, gas, electricity, and uranium from Canada than from any other country. At the same time, Canada is the largest export market for goods from thirty-five American states (“The Canada-US Relationship,” 2009). And finally, it is well known that Canada and the United States share the world’s longest unmilitarized international border. President
Barack Obama’s first foreign visit after taking office was to Canada, where he and Prime Minister Stephen Harper cast the Canada-US relationship not as special, but in fact as a *friendship* (Harper & Obama, 2009).

The North American Free Trade Agreement (NAFTA) is surely to be credited for much of the economic productivity just mentioned. But plenty of controversy surrounded the negotiation of this agreement. Economic controversies between Canada and the United States like that involving NAFTA are not new. In fact the best insight into the status of the Canadian-American relationship may come from examining how these controversies and disputes are handled. Wang (1981) for example investigated the prevalence of arbitration used to resolve Canadian-American disputes from the years 1794-1965. Using the 1972 work of A.M. Stuyt, Wang’s research demonstrates that of the twenty arbitral incidences between Canada and the United States in this period, ten favored Canada (or Canada through Britain), six favored the United States, two were equally favorable to both parties, and two were deadlocked. Wang finds these results to be unexpectedly balanced. “The record does not appear to be one-sided and adverse to Canada,” he says (p. 180).

What may not be surprising is Wang’s finding of these states’ preference to avoid arbitration. He claims that when disputes arise from the implementation of bilateral treaties, the two governments rarely resort to adjudication, even when this method of dispute resolution is encouraged by the treaty itself. At the time of Wang’s study, Canada and the United States had not taken any dispute to the International Court of Justice, or to the Permanent Court of International Justice, its predecessor. This reluctance to arbitrate
is corroborated by the former Canadian Ambassador to the United States Marcel Cadieux’s (1970-1975) belief in “... an ‘almost overwhelming’ preference on the part of both Canada and the United States over the years to resolve their disputes through negotiation rather than through adopting a strictly legal approach’...” (p. 159).

This preference notwithstanding, a noteworthy example of arbitration did occur in settling one of the deepest Canadian-American resource disputes to date. The softwood lumber dispute has spanned more than twenty years, beginning in 1982, and is now in its fifth iteration – referred to as Lumber V. At issue is whether government subsidization of Canada’s timber harvesting industry exists, if this enables below market prices, and whether the United States can impose penalties to level the playing field. The issue matters greatly to American lumber interests since the United States imports roughly one-third of its lumber from Canada. At times over the last two decades, an all out trade war had ensued where countervailing duties were met with taxes, quotas met with tariffs, and litigation and arbitration met with reviews and appeals to ever-higher national and international authorities (Cashore, 1997; Hajdu, 2010; Thompson & Randall, 2008). However, after years of costly litigation, and substantial investments of political capital (Thompson & Randall, 2008), the 2006 Softwood Lumber Agreement (SLA) appears to have brought resolution to the problem, at least for the next seven to nine years. A system of minimum pricing standards, transparency regarding the volume and source of lumber exports, and compensatory payments made by both sides did the trick. Interestingly, the London Court of International Arbitration was chosen as the forum for dispute resolution, and is required to keep all proceedings open to the public (Crook, 2008). Prime Minister
Harper explained that the SLA “demonstrates that, as two countries, we will disagree at times. But with goodwill and mutual respect, we can resolve our differences in a positive manner for both sides” (Thompson & Randall, 2008, p. 330).

Unlike softwood lumber, the Canadian-American dispute over regulating transboundary acid rain was settled through negotiations, not arbitration. But it also took many years – fifteen – to be resolved (Golitch & Young, 1993). A number of factors complicated the bilateral acid rain negotiations, including the wide range of domestic and international stakeholders involved, as well as commons issues, absence of a supranational authority, asymmetric distribution of power between actors, asymmetric distribution of acid rain effects on the actors, different political cultures, issue interdependence, and economic and scientific uncertainty (Golitch & Young, 1993). This study notes many of these same factors with regard to the Northwest Passage dispute.

Ultimately, the dispute over bilateral regulation of acid rain was resolved through an executive agreement. It committed both states to a program of sulfur dioxide and nitrous oxide emissions reductions and caps for industry, joint monitoring and implementation of the agreement, cooperative technological and regulatory development, and the use of the International Joint Commission (discussed later in this study) for dispute resolution. Though Canada had begun tighter domestic regulation of emissions by the late 1980s, the real impetus for bilateral agreement did not come until political change in the United States occurred. A new president, EPA administrator, and key legislators combined with new, compelling evidence on sources and effects of acid rain to cause
amendment to the Clean Air Act and the conclusion of a deal with Canada (Golitch & Young, 1993).

Finally, the Canadian-American dispute over ownership of subsurface oil deposits in the Beaufort Sea has received renewed attention with the onset of Arctic environmental change. The demarcation of the Canada-US boundary off the coast of Alaska is uncertain, creating a 21,436 square kilometer area of ocean that both states claim. The area is resource rich – oil companies like ExxonMobil and BP have recently paid upwards of US$2 billion to obtain exploratory rights. But these oil and gas concessions, and also fishing rights, have been very controversial due to the overlapping state claims (Byers, 2009).

It seems likely however that the economic value of the contested area will instigate a resolution in this dispute. Byers (2009) states,

> Ultimately, the oil companies will determine when the dispute is resolved. As more of the Beaufort Sea is explored, the multinationals will eventually turn their attention to the contested sector and demand legal certainty. The U.S. government . . . can be expected to respond (p. 102).

A Beaufort Sea settlement is not yet at hand, however. Adding to the controversy is the new realization of the implication of the contested boundary on the states’ extended continental shelf claims. Canada’s boundary line in the southern Beaufort Sea serves the United States better once it reaches the outer continental shelf, and the United States’ Beaufort Sea line serves Canada better when it reaches the outer continental shelf. With highly valuable ocean resources at stake, this new information could further complicate

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the dispute, or create, as Byers puts it, “. . . the perfect recipe for a negotiated compromise.”

While this review of Canadian-American resource disputes and their resolution has been brief, it does demonstrate that more often than not, when settlement of disagreements has been sought by the pair, it has eventually been found. It is likely for this reason that the former American ambassador to Canada, the Honorable David Wilkins, takes a confident view of Canada and the United States’ ability to resolve Northwest Passage issues, stating simply, “we will work it out.” This study will test Ambassador Wilkins’ and other commentators’ suggestions regarding institutional change beginning with Chapter 2. In it, an overview of the Arctic region, the Northwest Passage, and the effects of environmental change on both of these is provided.

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8 Ibid.
9 This has been Wilkins’ statement on the Northwest Passage on several recent occasions, in public statements, and in personal communication (2009).
The Arctic region is located at the top of the planet in the area encompassing the North Pole and the Arctic Ocean. Parts of eight countries – Canada, Finland, Denmark (by way of Greenland, its dependent territory), Iceland, Norway, Russia, Sweden, and the United States – are included within the Arctic. Delineation of the region varies; the Arctic Circle at 66.5ºN latitude, the 10º Celsius isotherm, and the northern extent of tree cover where permafrost begins are all commonly used. Each of these delineations is depicted in Figure 2.1 below: the Arctic Circle is shown as a broken, blue line; the 10º Celsius isotherm is a red line; the tree cover/permafrost extent is green. The physical characteristics of the Arctic are based in a complex interplay of atmospheric, oceanic, and terrestrial conditions. Ice and snow dominate the region, especially on the Arctic Ocean, its most notable geographic feature.

**Environmental Change in the Arctic**

While political debate continues in the southern world over causes and coping strategies for global climatic change, in the Arctic its effects are already underway. Because of the Earth’s patterns of atmospheric and oceanic circulation, greenhouse gases and other forms of environmental pollution find their final resting place in the Polar Regions. For this reason, scientists consider these regions to be at the frontline of climate change. At the poles, scientists believe, the most immediate and amplified effects of
global warming will occur. From the poles, then, the earliest signals of rising planetary temperatures will emanate (Intergovernmental Panel on Climate Change, 2007).

Figure 2.1: The Arctic

Source: CIA World Factbook 2002
In the Arctic, recent, warming-induced changes to the natural environment are sending these signals. Rising terrestrial and marine temperatures have caused the Arctic ice cap to retreat at an unprecedented rate; its extent diminished by 40% between 1979 and 2007, with 20% of that loss occurring between 2005 and 2007 alone.\(^\text{10}\)

Increasingly warmer year round temperatures means Arctic ice returns to its previous extent less and less each winter. But while the Arctic ice cap has been slowly shrinking for at least the last 30 years, polar scientists were stunned by the rapidity of the ice retreat in summer 2007, a 20% decrease from just two years earlier (Figure 2.2). There is now growing scientific consensus that ice-free Arctic summers can be expected within 20 years, if not sooner (Byers, 2009).\(^\text{11}\)

Arctic warming has manifested itself in a variety ways across the region: the extent and thickness of ice cover in the Arctic Ocean has fallen significantly, soil temperatures are rising causing the contraction of permafrost across the landscape, snow cover and mountain glaciers in the region are shrinking, Canadian ice shelves are breaking apart,\(^\text{12}\) and the Greenland ice sheet, the second largest body of ice on the planet, is liquefying (Overpeck et al., 2005). The impacts of the warming phenomenon on human and natural systems could be profound (Serreze & Francis, 2006; Intergovernmental Panel on Climate Change, 2007). The Arctic Climate Impact

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\(^{11}\) http://www.timesonline.co.uk/tol/news/uk/article520013.ece.
Assessment (2004), a product of the Arctic Council\textsuperscript{13} and the International Arctic Sciences Committee\textsuperscript{14}, notes that climate change in the Arctic poses a range of stresses for human health, culture, and well being, as well as risks to other species and ecosystems.

Figure 2.2: Arctic Ice Extent and Concentration 1979-2007

Source: NASA

At the local level, these stresses have been best represented by the plight of the region’s hallmark species, the polar bear (Ursus maritimus). Dependent on sea ice as its

\textsuperscript{13} The Arctic Council is a high level intergovernmental forum for cooperation, coordination, and interaction among the Arctic States, Arctic Indigenous Communities, and other Arctic inhabitants, on common Arctic issues (http://arctic-council.org).

\textsuperscript{14} The International Arctic Sciences Committee is a non-governmental organization encouraging and facilitating all aspects of Arctic research (http://www.arcticportal.org/iasc).
hunting grounds, polar bears now encounter great difficulty in pursuing prey as the melt continues. Malnourished, starved, and drowned bears have become more common (Aars, Lunn, & Derocher, 2006; Amstrup, Stirling, Smith, Perham, & Theimann, 2006; Regehr, Amstrup, & Sterling, 2006). Recently listed as a threatened species under the US Endangered Species Act, the bear is a species of special concern in Canada where discussion of changing its official status is ongoing.

Other marine species adapted to the Arctic’s cold waters, for instance fish, seals and sea lions, whales, crustaceans, plankton, and algae, may be unable to withstand a warmer aquatic environment. On land, vegetation regimes may be altered by warmer regional temperatures, as forests and other tundra plants expand northward with the retreating permafrost. Pests, microbes, and disease vectors previously unseen in the Arctic could also intrude northward as climatic barriers subside (Arctic Climate Impact Assessment, 2004).

Human populations in the Arctic are also experiencing change due to rising temperatures. Inuit and other indigenous communities that have hunted and herded since time immemorial fear the erosion of their traditional economies and cultures with alterations in environmental conditions. Numbering around 160,000, indigenous peoples are arguably the most directly affected by a changing Arctic since they depend on the local environment for their identity and their survival.

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More contemporary way of life may also be challenged by a warming Arctic. Buildings, roads and railways, oil and gas pipelines, and timberlands, could all become destabilized with the thawing of the permafrost layer that underlies much of the region. Logistics in the harsh Arctic environment are already difficult, but with continued warming and melting additional risks may be added. More frequent storms and larger storm surges, sea level rise, beach erosion, and inland flooding – the result of oceanic instability linked to rising Arctic temperatures – threaten coastal and inland communities and industries in the Arctic (Arctic Climate Impact Assessment, 2004).

While Arctic warming can produce serious impacts on local ecological and human systems, the impact of these changes can also be felt outside the region. Snow and ice cover at the poles reflects excess solar radiation back into space, helping to moderate global temperatures. The cold Polar Regions also balance out the warmer conditions arising from Earth’s equatorial areas. The contrast between these hot and cold areas of the planet helps form Earth’s prevailing atmospheric circulation patterns (Chaturvedi, 1996). In this way, an Arctic meltdown could risk the malfunction of an important planetary thermostat.

Another far-reaching concern as the Arctic warms is the potential release into the atmosphere of millions of tons of stored methane from regional soils and lake beds. In the atmosphere, methane, a hydrocarbon, becomes a greenhouse gas and is many times more potent than carbon dioxide. Methane release thus has the potential to greatly exacerbate Arctic, and global, warming.

Finally, less ice in the Arctic means less ice in the Arctic, since darker ocean water revealed by melting ice absorbs more solar radiation, causing further melting. This positive feedback cycle, referred to by scientists as “Arctic amplification,” only hastens the overall melt. The loss of the Arctic ice cap could therefore contribute to greater and greater global climatic dislocations, touching off worldwide changes in temperature, weather, and ocean patterns, and reaching into plant and animal production.

**Arctic Resources and the Law of the Sea**

Interestingly, at the same time that Arctic warming trends are creating negative impacts on the local and global environment, some positive effects of environmental change in the Arctic have also appeared. As the polar ice has relinquished its hold, prospects of improved access to natural and commercial assets have emerged, reinvigorating economic interest in this environmentally sensitive but resource rich part of the planet. Components of the Arctic natural endowment, such as minerals and fish stocks, are increasingly viewed as prized commodities by rapidly expanding southern markets. Untapped stores of Arctic hydrocarbons are inspiring serious examination, particularly in relation to recent technological advancements and also an uncertain picture of global energy supplies. The potential for large-scale agricultural activities to return, after centuries of hiatus, to some Arctic lands, such as Greenland, is a promising development for local communities. And faster transport between markets through more navigable Arctic waters, the Northwest Passage and the Northern Sea Route for instance, could lead to reduced production costs for many goods. Significant economic gains for
industries, investors, and communities, both near and far, appear to be in the offing as Arctic development, abetted by warming regional temperatures, unfolds.

The existing and potential resources of interest lie in, on, or beneath the Arctic Ocean. The so-called Law of the Sea therefore becomes an important part of this resource picture. The United Nations Convention on the Law of the Sea (UNCLOS) is the international legal framework that guides the use of the ocean’s resources. Reached in 1982 and ratified by 158 countries, UNCLOS is the original “zoning plan for the oceans.” UNCLOS provides for a 200 mile offshore area, called the Exclusive Economic Zone (EEZ), in which nations can pursue economic development. In this zone, nations have rights to exploit and manage the resources of the water column, seabed, and subsoil. Waters beyond the 200 mile EEZ constitute the high seas, where access to the resources contained therein is open to all states (Byers, 2009; UNCLOS, 1982). UNCLOS also permits nations to utilize resources beyond the EEZ. If geophysical and bathymetric evidence demonstrates contiguity with its continental shelf, a coastal state can exploit and manage the resources of the seabed and subsoil out to an additional 150 miles.

Figure 2.3 below depicts the EEZ, the extended continental shelf, and other offshore jurisdictional zones established by UNCLOS. As the figure shows, baselines can be created by coastal states to join fringing islands and enclose indentions of the coastline. From the baseline, measurements for the EEZ and other zones are taken. To twelve miles seaward from the baseline is a nation’s territorial sea. In this zone, full

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19 Components of the Obama administration’s new ocean policy has been referred to with this moniker because of its use of the idea of marine spatial planning.
control over the resources of the waters, seabed, subsoil, and even the airspace above is held by the coastal state. Foreign ships can pass through territorial seas as long as their passage is deemed “innocent” – non-prejudicial to the safety and security of the coastal state (UNCLOS, 1982). Landward of the baseline lies the nation’s internal waters. It is in this zone that Canada claims the Northwest Passage lies. Under UNCLOS, coastal states have full territorial sovereignty over internal waters; they are essentially no different from the state’s land territory. Importantly, no right of innocent passage exists in the internal waters zone, as it does in territorial waters. Instead, coastal states can allow, prohibit, and

Figure 2.3: UNCLOS Jurisdictional Zones

Source: GFDL, adapted from Images: Zones maritime UNCLOS.jpg by an anonymous user
set the legal and regulatory standards of ship passage through internal waters. Because Canada sees the Northwest Passage as its internal waters, it asserts that it can apply national laws and regulations for environmental and public protection to any ship sailing through. The requirements of these laws and regulations could be more stringent than those presently governing international shipping. Furthermore, if it ever deemed such an act necessary, Canada would be within its rights to prohibit ships from sailing the Northwest Passage (Churchill & Lowe, 1983; McRae, 2007; UNCLOS, 1982).

In waters that comprise an international strait, the situation is quite different. International straits are those waterways “. . . which are used for international navigation between one part of the high seas or an exclusive economic zone and another part of the high seas or an exclusive economic zone (UNCLOS, 1982). In international straits, the regime of “transit passage” rather than innocent passage is employed. While ships in transit passage are bound to refrain from threatening acts or the use of force against coastal states, coastal states can only effect laws and regulations that comply with international standards. Maritime pollution or traffic separation regulations, for example, must first be adopted by the International Maritime Organization (IMO). Submarines can remain submerged while in transit passage; when in innocent passage they must surface (Churchill & Lowe, 1983; McRae, 2007; UNCLOS, 1982). As McRae (2007) puts it, “In respect of straits used for international navigation, the right of the coastal state to regulate shipping exercising the right of passage is more constrained” (p. 5).

One interesting exception to the authority of the coastal state regarding internal waters occurs when, by implementing straight baselines to enclose fringing islands and
indentions of the coastline, a strait that had been used for international passage becomes internal waters. This exception is often pointed out with regard to the Northwest Passage case, ostensibly to indicate a weakness in Canada’s legal argument. The idea is that even though Canada enclosed its Arctic islands with straight baselines thus making the waters between them internal, the Northwest Passage remains an international strait because it was used in this matter before the enclosure. However, according to McRae (2007), since Canada was not a party to UNCLOS at the time of its straight baseline implementation, this exception does not apply (p. 13). Canada implemented straight baselines in 1986; it acceded to UNCLOS in 2003. The history of the straight baselines policy adopted Canada is discussed in more detail below.

The Northwest Passage case demonstrates that applying the UNCLOS jurisdictional scheme to the Arctic is not without controversy. In the Arctic, history and a near-impossible environment have combined to create a situation where the end of one nation’s influence and the beginning of another’s can be controversial. This lack of clarity, combined with the massive ice retreat witnessed in the summer of 2007, prompted the mass media to predict that countries would quickly rush to the Arctic to “stake their claim” to the untold spoils of new resources that were suddenly becoming more accessible.

That prophecy appeared to be fulfilled when a Russian continental shelf-scouting submarine planted the nation’s flag in the seabed under the North Pole on August 3, 2007, symbolically gesturing that the whole of the Arctic was the property of the

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Kremlin. In response to the Russian tactics, Canada’s Foreign Minister, Peter McKay, stated, “This isn’t the 15th century. You can’t go around and just plant flags saying, ‘We’re claiming this territory’.”

Or can you? Territorial disputes are nothing new in the Arctic. Admiral Robert Peary raised the American flag at the North Pole in 1909 and the feat was immediately called into question, as were the attainments of many other polar explorers of the day. Today, the North Pole and adjacent territory up to the North Pole is simultaneously claimed by Canada, Denmark, and Russia (Byers, 2009).

Further disputes between countries over boundaries and islands in the Arctic persist. Denmark and Canada have an ongoing dispute over the ownership of tiny Hans Island, lying in the Nares Strait between Ellesmere Island and Northern Greenland, where Danish soldiers raised their nation’s flag in 2002. And besides their differences over the Northwest Passage, Canada and the United States have another Arctic territorial dispute in the Beaufort Sea, where the position of the maritime boundary between the Yukon Territory and Alaska affects rights to access offshore petroleum reserves. Russia and Norway have had a persistent maritime boundary dispute that affects fishing rights and oil reserves in the Barents Sea.

Competing claims to the Lomonosov Ridge, a giant undersea mountain range that runs beneath the North Pole and defines one of the two great basins of the Arctic Ocean,

24 http://www.american.edu/TED/ice/barents.htm
are very significant in the Arctic today. Russia, Canada, and Denmark are all claiming or seeking to claim the Lomonosov Ridge. Russia believes it to be an extension of its continental shelf; Denmark and Canada both have mapping expeditions underway to determine if the ridge is attached to their continental shelves (Currie, 2007; Dhanapala, 2008; Gray, 1997). Whoever can establish the Lomonosov Ridge to be a part of its continental shelf may be in position to bring a huge portion of the Arctic seabed, and the resources contained therein, under its control. Arctic coastal states are therefore spending considerable sums of money and using advanced technology under difficult conditions to map the extent of their continental shelves in hopes of substantiating their territorial claims. UNCLOS rules give nations ten years to make their case once the claim process begins.

To help resolve competing maritime claims, UNCLOS created the Commission on the Limits of the Continental Shelf (CLCS) and staffed it with geoscientists and marine boundary experts. Today the CLCS is working to process and offer advice on the extended continental shelf claims submitted by littoral states. What is at stake in this process? The chairman of the CLCS, Alexandre Albuquerque, knows. “Money. Money, of course,” he says. 25 Though the United States has not ratified UNCLOS, the estimated value of resources it could be entitled to by way of maritime claims totals $1.3 trillion. The size of the offshore entitlement encompasses an area as large as the state of

California. Not surprisingly, the work of the CLCS has been described as the “largest peacetime expansion of national territories in modern memory.”

Resources Becoming

What is happening today in the Arctic is a fascinating instance of the detection of value and the emergence of resources. The term “resource” has already been used several times in this study; what exactly is a resource? A short answer is that a resource is anything that helps. Buck (1998) in fact defines a resource as “anything used to meet the needs of an organism” (p. 3). She identifies two types of resources: natural resources, those materials that take on economic or social value once extracted from their natural state, and spatial-extension resources, whose value derives from their location. Other types of resources are well-known, like human resources and cultural resources. Capital is a resource, in its fiscal, physical, and even political forms. These various types of resources are similar in that they all help in achieving some goal. Whether that goal is the attainment of wealth, of knowledge, or of power, what comes to be a resource may in fact be constrained only by man’s own inventiveness.

The idea of inventiveness is at the heart of Erich Zimmermann’s (1951) landmark study of resources. In a work entitled World Resources and Industries, Zimmermann finds that resources have a lifelike quality to them. They ebb and flow, rise and fall, with the interests of man. “Resources are living phenomena,” he says, “expanding and contracting in response to human effort and behavior. They thrive under rational

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26 Ibid.
harmonious treatment. . . . To a large extent, they are man’s own creation.” (p.7). “Resourcship” is the act of creating resources. For Zimmerman it is “. . . the purposeful interaction of natural, cultural, and human aspects primed and kept going by demand based on availability for use” (p. 15). A necessary antecedent to resourcship is human appraisal – the recognition of a dormant utility, a potentiality, a latent ability, within some feature of the natural endowment. That feature can then be brought forward from the pre-resourcship world of “neutral stuff” (p. 12) and manipulated by man to his own greater benefit.

The result of Zimmermann’s analysis is the determination that the things we know as resources do not exist in and of themselves. To be a resource, a thing first requires man’s recognition of usefulness in it; its utility or value. It then requires his transformative hand to move it out of the world of neutral stuff and into a productive state. “Resources are not,” Zimmermann says, “they become; they are not static but expand and contract in response to human wants and actions.” (p. 15). Zimmermann’s study of resources was unique for its time in recognizing that human, cultural, and natural factors all combine to determine resource availability. He concludes the work by noting these factors in the broadest of terms as they relate to the availability of resources:

The problem of resource adequacy is also one of social institutions, of government policies, of international relations . . . it is the altogetherness of things. In this inextricable mesh of forces and conditions man appears as the responsible agent. The problems of resource adequacy for the ages to come will involve human wisdom more than limits set by nature (p. 818).
The Northwest Passage in a Changing Arctic

Zimmermann’s ideas are at their fullest expression in the contemporary Arctic. The extreme climatic conditions of the region, its remoteness, and its difficult logistics had previously maintained many of the Arctic’s potential resources as uneconomic, known but unavailable, “neutral stuff.” But with warming regional temperatures and the decline of both land- and sea-based ice, the region has entered an unprecedented period of resources becoming. Now man has looked upon the “new” Arctic assets – oil and gas, precious metals, fish stocks, transportation routes – appraised them positively, and with improving accessibility provided by warming temperatures and melting ice, is encouraged to bring them into production.

One component of the Arctic endowment that appears to be on the cusp of becoming a resource is the Northwest Passage. The Northwest Passage is the fabled sea route which passes through the ice-covered waters of Canada’s Arctic. For centuries, Europe and Asia, it was hoped, could be joined using this route instead of those requiring voyages around Africa or South America. With the rise of regional temperatures due to global warming, speculation continues apace that an ice-free Northwest Passage will enable regular inter-oceanic transits. As some 90% of world trade is today carried by sea,27 the prospect of a more dependably navigable Northwest Passage beckons shippers and maritime nations. It is estimated that the Northwest Passage offers a 7000-9000 km shorter route between the Atlantic and Pacific Oceans than more conventional ones.

27 “International Shipping: Carrier of World Trade,” International Maritime Organization
http://www.imo.org/includes/blastDataOnly.asp/data_id%3D18900/IntShippingFlyerfinal.pdf
It is only recently of course that the thought of regular shipments by way of this icy route could even be considered; sailing between the Atlantic and Pacific Oceans through the Northwest Passage has for the most part been known only to the annals of history. Frozen over with seasonal and multi-year ice for nearly the entire year, use of the Northwest Passage has always been relatively uneconomic, if not utterly treacherous. Moreover, competition has always surrounded the Northwest Passage. As far back as the 15th century, when state-backed and commercial expeditions sailed from Europe seeking a shortcut to the Orient, through to the modern era of exploration, when nationalism and personal prestige drove adventurers and men of science, the Northwest Passage has been nothing if not the scene of man testing himself, the natural world, and other men.

Roald Amundsen (whose map appears in Figure 2.4 below) was the first to successfully transit the Northwest Passage, between 1903 and 1906. A Norwegian who explored the Arctic and the Antarctic, Amundsen was the first to sail all the way through the Northwest Passage from end to end. He used a much smaller and lighter ship than previous Northwest Passage explorers; undertook superior preparation, especially regarding routing; and adopted techniques from Inuit met during the voyage. Amundsen later became the first person to reach the South Pole.

But whether courageous captains like Amundsen sailed for science, commerce, or glory, the promise of the Northwest Passage – that it would provide a shorter, dependable shipping link between East and West – remained ever elusive.
Until today. Now, a new chapter in the Northwest Passage’s history is being written. Abetted by warming temperatures and ice subsidence, ship traffic in the Northwest Passage has increased in recent years (see Figure 2.5 below and Appendix A). Between 1906 (when the first transit by Amundsen was completed) and 2004, ninety-nine transits, by sixty-seven vessels, under seventeen different flags have been made (Arctic Marine Transport Workshop, 2004). Canadian vessels have conducted thirty-eight, the majority, while American vessels have conducted eleven. Most transits are Coast Guard missions, and many are conducted for hydrographic research or other scientific purposes. However, there have been some passenger cruise ship transits, and even some private pleasure craft voyages. Appendix A contains these data.

Figure 2.4: Amundsen’s Northwest Passage Map 1903-1906

Source: http://libweb5.princeton.edu/visual_materials/maps/websites/northwest-passage/amundsen.map2.jpg
Today the Northwest Passage is the scene of increasing movement of people and goods. Heightened demand for use of the waterway stems from the expansion of resupply programs for growing northern Canadian communities, a burgeoning Arctic tourism industry, and intensifying resource exploitation, specifically mining, fishing, and fossil fuel recovery.

Figure 2.5: Transits of the Northwest Passage 1906-2004, by Decade

Source: Arctic Marine Transport Workshop, 2004

There is growing certainty among climate models that warming temperatures and ice subsidence will continue in the Arctic. Scientists now discuss an ice-free Arctic Ocean in the summer season as soon as ten and as late as thirty years from now.28 Under this scenario, a less risky, less time consuming Northwest Passage could become a more

28 P. Wadhams, Polar Ocean Physics Group, Cambridge University. W. Meier, National Snow and Ice Data Center.
economic alternative route for inter-oceanic transit shipping. Compared with the Panama Canal route, for example, thousands of kilometers in distance savings are possible (Charron, 2005; Dittmann, 2009; Wilson et al., 2004).

The idea that the waterways of Arctic Canada, the Northwest Passage most prominent among them, may someday be subjected to increased ship traffic is not a new topic to Canadian scholarship. A number of scholars (e.g. Byers, 2009; Byers & Lalonde, 2006; Charron, 2004, 2005a, 2005b; Griffiths, 1987; Huebert, 2001; McRae, 1987) have explored this idea. Indeed, in their recent examination of Arctic socioeconomic change and its prospects for Canadian policy, Coates, Lackenbauer, Morrison, and Poelzer (2008) recommend that in the face of melting polar ice, Canada should make preparations for a “rapid expansion of Arctic shipping.” “In all likelihood” they say, “the ships are coming” (p. 203).

These views of the future Northwest Passage certainly comport with predictions of economic theory. Several economic theorists have noted the instance of previously undetected opportunities arising from changing conditions (e.g. Davis & North, 1971; Demsetz, 1967; Furubotn & Pejovich, 1974). For Furubotn and Pejovich, it is none other than the activity of shipping that exemplifies this idea. They say, “. . . changes in the economy affecting private cost-benefit calculations tend to create opportunities for individuals and groups to capture profits by engaging in activities that were not previously considered profitable, e.g. high seas shipping” (1974, p. 9). Recognizing potential gains in new Arctic shipping routes, like the Northwest Passage, actors are moving to capture the benefits that emerge, as Furubotn and Pejovich predict.
Should the marginal cost of Northwest Passage transits in fact continue to fall, it seems Canada and the United States would be the two states most interested in transits of it, in the near-term. As noted above, Canadian Northwest Passage activities include the resupply of northern communities conducted by the Canadian Coast Guard and the movement of cargoes to and from resource development projects in Arctic Canada. Notably, much of this traffic moves north-south within the Northwest Passage and its vicinity, rather than through it from east to west. A third form of destination-oriented Northwest Passage traffic is cruise ship visitation to sites across the Northwest Passage itself. At this time however, these tourist cruises are not conducted by Canadian vessels (J. Falkingham, personal communication, March 19, 2009; D. Jackson, personal communication, March 19, 2009).

The most notable forms of American ship traffic in the Northwest Passage to date have been connected to the movement of petroleum cargoes and the repositioning of defense assets. For the most part, these comprise the voyages of the SS Manhattan in 1969, and the USCG vessels Polar Sea in 1985 and Polar Star in 1988. Future interest in Northwest Passage transits on the part of the United States would likely fall along similar lines. Such voyages could entail resource extraction, defense related, or scientific activities. Arctic marine science conducted from American icebreaking ships is ongoing – specifically offshore mapping missions carried out jointly with Canadian counterparts – and is certainly feasible in the future. With a less icy Northwest Passage, commercial transits to carry domestic oil shipments from the North Slope of Alaska to the east coast of the United States could materialize. The attractiveness of this option may increase if
thawing Arctic permafrost destabilizes land-based transportation infrastructure (J. Falkingham, personal communication, March 19, 2009). And should some Arctic-based threat ever jeopardize national interests or continental security, a United States Naval or Coast Guard voyage through the Northwest Passage could be vital. More generic training exercises or offshore law enforcement could also instigate such a transit.

In this context, it is important to note that the Northwest Passage is actually just one route in a group of alternative Arctic shipping lanes (R. Hodgson, personal communication, April 2, 2009; M. Treadwell, personal communication, November 9, 2009). Besides the Northwest Passage, this group also includes the Northeast Passage (or Northern Sea Route) along Russia’s northern coastline, the Arctic Bridge which connects Murmansk and Churchill around the southern tip of Greenland, and the potential North Polar route over the top of the planet.

The Northern Sea Route is similar to the Northwest Passage in that Russia claims the Northern Sea Route as internal waters while the United States views it as an international strait. The waterway runs the length of Russia’s Arctic coast, connecting the Atlantic Ocean and the Barents Sea with Siberia, East Asia, and the Pacific. The waterway has seen continued development for industrial and military purposes beginning in the early Soviet Era. Since the 1970s, the Northern Sea Route has been instrumental in developing the oil and gas resources of northern Russia (Ragner, 2008). In the summer of 2009, two German ships transited the Northern Sea Route carrying supplies from Vladivostok to Noyyov in Siberia, marking the first non-Russian commercial voyage of the route. And according to a Russian transport minister, a voyage of the Northern Sea
Route is planned for two Russian oil tankers in the fall 2010, sailing from Vitino on the White Sea to Southeast Asia. Hodgson notes the superior infrastructure of the Northern Sea Route, the relatively more conducive ice conditions, and the very capable Russian ice breaking fleet (R. Hodgson, personal communication, April 2, 2009).

The Northern Sea Route and the other alternate Arctic routes offer shorter inter-oceanic distances than conventional routes. Shipping enterprises may therefore have multiple routing options in an ice-diminished Arctic, where route choice would be guided by factors such as ice conditions and time and speed impedances.

The lack of transshipment facilities in the Arctic zone is another important factor worth noting. Without transshipment ports, ice-class vessels must steam long distances in open water when approaching and leaving the Arctic (R. Hodgson, personal communication, April 2, 2009). Were transshipment infrastructure available, cargoes could be carried by open water ships to the Arctic zone, then offloaded at the proper facility to ice-ready vessels. With a less than ideal port configuration in the region, Arctic routes like the Northwest Passage may be best suited to serve origins and destinations nearest to their end points.

Recent computer simulations appear to bear this out. Somanathan, Flynn, and Szymanski (2007) conducted modeling to evaluate the Northwest Passage versus the Panama Canal, including the port-to-port shipping cost component of the overall required freight rate. Recent historical ice conditions were also used. Shipping from St. John’s

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29 “Northern Sea Route to open for Russian oil tankers in fall,” RIA Novosti, June 11, 2011
31 There is indication however that some private shipping interests have invested in suitable technology to solve the open water/ice-covered water dilemma. See Borgerson, Arctic Meltdown, Foreign Affairs March/April 2008. These ships are no doubt prohibitively costly.
Newfoundland to Yokohama was found to be economic through the Northwest Passage. However extending the route to New York made the Northwest Passage non-competitive. The modeling showed that the critical economic variable is the incremental capital cost between an ice-capable and a standard Panamax ship (Somanathan et al., 2007).

Computer simulations conducted in 2009 at the Massachusetts Institute of Technology (Dvorak, unpublished; Pollock, unpublished) also support these findings. Combinations of vessels, alternative routes, including the Northwest Passage, and speeds were modeled for Arctic shipping. The time and expense of Arctic voyages were then compared to existing routes. Based on this work, the likelihood of year-round reliable containership service through the Arctic is, according to these researchers, a matter of “perspective.” The researchers claim that sending containerships over the Arctic is generally considered by the industry to be economically, politically, or environmentally unfeasible for continuous, reliable service. However, the modeling does indicate that these voyages could be economic if minimally ice-strengthened containerships could be reliably escorted through the Arctic at a speed of at least 10 knots.32

At present, private shipping enterprises conduct destination-based shipping within the Northwest Passage in transporting cargoes to and from project sites and assisting the Canadian Coast Guard with the seasonal resupply of Northern communities. Some tourist cruises with areas of the Northwest Passage have also been made (J. Falkingham, personal communication, March 19, 2009; R. Hodgson, personal communication, April 2,

32 Dr. Henry Marcus, “Economic Feasibility of Shipping Containers through the Arctic” (presentation, 91st United States Arctic Research Commission meeting, Cambridge, MA, November 2009.)
2009; D. Jackson, personal communication, March 19, 2009). With respect to inter-oceanic transits of the Northwest Passage, it has been estimated that since Amundsen’s successful voyage in 1903-1906, about one transit per year has occurred (J. Falkingham, personal communication, March 19, 2009).

To the extent that commercial transits Northwest Passage have or may occur, the shipping industry appears to have a number of wants. Fednav, for example, is Canada’s largest shipping company. In transporting dry-bulk cargoes all over the world, its portfolio includes Arctic shipping services. Fednav’s vice-president Thomas Paterson claims aviation and maritime safety, including a search-and-rescue agreement, are needed for shipping in the Arctic. He says,

> We need to have something to prevent a major incident before the incident shuts us down. . . (and) a set of rules not only for the construction of ships, but for the routes to go along Alaska and through the Northwest Passage. Until we get better ice and weather charts, (Arctic shipping will) remain a huge challenge, and all of these things are deterrents for commercial shipping. All these components need to be put into place before the Arctic truly opens up, even in the summertime (Gedeon, 2009).

Petro-Nav, a Canadian liquid bulk shipper that handles petroleum and chemicals, spends approximately 200 ship days in the Arctic every year. Christopher King, Petro-Nav’s director of operations, sees the need for an increase in icebreaking capacity, as well as for more navigational aids in the Arctic. King states,

> A lot of the charts and navigational aids that the ships are operating with were probably produced in the 1960s and ’70s when there were probably half as many ships and they were probably half to a third of the size. This is where the potential for an environmental disaster is (Gedeon 2009).

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33 www.fednav.com/anglais/home.html
Beyond navigational aids, the need for even greater supporting infrastructure to serve Arctic shipping has been identified in economic and engineering research conducted at the Massachusetts Institute of Technology. Dr. Henry Marcus, a professor of Mechanical Engineering and Maritime Systems at MIT, claims the technology to traverse Arctic shipping routes exists, as does the distance savings offered from traversing these routes. However what the shipping industry needs, and what the Arctic lacks, is sufficient infrastructure to serve the transshipment of cargoes.\textsuperscript{34} Hodgson agrees, noting that ice-capable ships are uneconomic in open water, and therefore transshipment ports in the Arctic would be necessary for routine transits (R. Hodgson, personal communication, April 2, 2009).

Apparently, details such as these are not lost on shippers. Laserre (2010) surveyed 125 shipping firms in Asia, Europe, and North America for their Northwest Passage shipping interest.\textsuperscript{35} Eleven indicated a possible interest. And of forty-six container shippers surveyed, only six reported a possible interest in any Arctic routes. According to Laserre, “These companies are really, really not interested in Arctic routes . . . It’s (the Northwest Passage) never going to be a Panama Canal.”\textsuperscript{36}

Although there is growing scientific evidence that Arctic ice will continue to subside, and an ice-free Arctic Ocean in the summer is likely, seasonal variability in ice coverage remains a concern for Northwest Passage shipping. Wilson, et.al (2004) warns against a “false sense of optimism regarding the ease of future shipping in the Canadian

\textsuperscript{34}Dr. Henry Marcus, “Economic Feasibility of Shipping Containers through the Arctic” (presentation, 91\textsuperscript{st} United States Arctic Research Commission meeting, Cambridge, MA, November 2009.

\textsuperscript{35}http://www.breakbulk.com/maritimebarging/survey-little-interest-northwest-passage

\textsuperscript{36}Ibid.
In reviewing predictions of warming impacts to future sea ice conditions, these researchers maintain that Northwest Passage ice conditions will be highly variable: “Shippers in the Northwest Passage will continue to be faced with a wide range of possible ice conditions and it is important to remember that this significant variability will remain” (p. 1855). Noting the presence of three key “chokepoints” in the western Northwest Passage caused by the break-up of older Arctic Ocean ice, the researchers state:

Future navigation in the Northwest Passage may see a blockage of western Northwest Passage routes by the southern shift in pack ice and an increase in drifting OI (old ice) creating chokepoints in narrow channels and significant navigation hazards. It is important to remember that with our present imperfect ability to predict future impacts on Arctic sea ice, there are a number of plausible climate change scenarios (p. 1856).

Finally, the American moratorium on offshore oil drilling after the April 2010 Gulf of Mexico oil rig disaster could also affect Northwest Passage use. If, as a result of this policy, oil in the Beaufort Sea is not recovered, the utility of the Northwest Passage as a means for inter-oceanic resource transport could be reduced. If, however, Beaufort Sea fields do produce, it remains unclear that recovered oil would be brought out via the Northwest Passage anyway. Prudhoe Bay and the northern terminus of the Alaska Pipeline are of course just adjacent to the Beaufort Sea. This alternative could be seen as more reliable; moreover, the Alaska Pipeline is currently operating under capacity (J. Falkingham, personal communication, July 30, 2010).
Policy Directions

All of this recent attention on the possibility of inter-oceanic transits of the Northwest Passage brings the Canadian-American governance dispute to the fore. As potentially North America’s sole transoceanic shipping route, who holds the right to determine how maritime traffic can operate in the Northwest Passage – one country, or the entire international community? The divergent views of jurisdiction of the Northwest Passage that were discussed briefly in Chapter 1 are returned to here in more detail and related policy steps taken by each government are noted.

Canada is certain in its sovereign right to regulate Northwest Passage transits since for it; the Northwest Passage is internal waters. Its preference would be to provide authorization to vessels for Northwest Passage transits, track and control this traffic, provide navigational aids to vessels in transit, and impose domestic rules for vessel design, crewing, and environmental protection and safety.

The desire to protect the unique Arctic marine environment from the potential harm of industrial shipping is where Canada’s practical efforts begin. However, over the years, Northwest Passage affairs have become intimately bound up with the expression of Canada’s national sovereignty and identity. As a Northern nation, the Northwest Passage is an integral piece of Canada’s national mystique. As an essential symbol of the “True North, strong and free,” the image of the Northwest Passage generates a near-mythic national and cultural affinity.

Since taking office in 2006, Canadian Arctic sovereignty has become a centerpiece of Prime Minister Harper’s national agenda. While a number of past
Canadian Prime Ministers have offered themselves as defenders of Canada’s North, Harper has taken the idea to a new level. “We have significant plans for national defence and for defence of our sovereignty, including Arctic sovereignty,” he said in 2006. The Prime Minister has made frequent visits to the North, which often include public pronouncements of policy goals and appearances with military personnel and native Canadians. In a recent visit to Nunavut, Harper stated:

The Government of Canada must be able to be anywhere, respond to anything, if necessary – from foreign incursions to emergency – and that is obviously why we have been boosting military and defence assets, to ensure we take responsibility for our territory. But obviously our sovereignty is far more greatly enhanced if we have thriving indigenous and domestic healthy communities throughout the territory, communities that are proudly Canadian, as the Inuit are.

Harper’s slogan regarding the Arctic – “use it or lose it” – appears to drive policymaking; an expanded military presence, the new Coast Guard icebreaker CGS Diefenbaker, extending the Arctic Waters Pollution Prevention Act to 200 miles offshore, mandatory ship reporting requirements (NORDREG), a study for a new national park at the eastern entrance to the Northwest Passage, and deep-water berthing facility at Nanisivik, also at the eastern entrance to the Northwest Passage, are some of the activities undertaken by the Harper government related to this issue.

The issue of “Northern sovereignty” for Canada, and its connection to the Northwest Passage, can be attributed in some measure to the influence of the United States, Canada’s outsized next-door neighbor and other main client of the Northwest Passage. The United States’ lack of acquiescence to Canadian domestic control of the

Northwest Passage is, in the Canadian view, a rejection of Canada’s national sovereignty. Having been unable to convince others of its control over the waters it claims as internal, increased foreign-flagged traffic in an unfrozen, internationalized Northwest Passage is therefore perceived by Canada as a threat to its national sovereignty.

Huebert (2007) discusses “sovereignty exercises” undertaken recently by Canada’s military. He says that with the onset of global warming and ice decline in Arctic Canada, the Canadian Defence Forces have “returned” to the North after an extended post-Cold War layoff. “Sovereignty exercises” have been stepped up in the Arctic, a new all-indigenous Arctic ranger group has been formed, and two new military bases in the Canadian Arctic have been promised. According to Huebert, Canada’s navy in particular sees an urgent mission. Monitoring and enforcement of Canada’s Arctic waters, including the Northwest Passage, are now enhanced commitments. Increased access to the waters of Arctic Canada and emerging resource wealth, both brought on by climate change, demand a renewed sovereignty and security response. The regimen of Arctic naval exercises has intensifies to better prepare for this objective, and as many as eight ice-strengthened patrol ships are on order (Huebert, 2007).

The Canadian Coast Guard (CCG) is likewise securing new ships. As indicated in the interviews, a new three-season ice breaker is being built. The vessel will be state-of-the-art, with a price tag of CD$720 million, and will replace the aging Louis St. Laurent, which has been scheduled for decommission in 2017 (D. Jackson, personal communication, March 19, 2009). This is good news for a department that finds itself
maximized by the growing demands of the Canadian North and a lengthened shipping season in the Northwest Passage.

These recent activities follow an historical trend. Over the years, Canada’s government has promulgated both domestic and international policies to reinforce its position of sovereignty over Arctic land and water, including the reconfiguring of its national boundary, anti-pollution laws, and shipping management systems. On January 1, 1986 Canada implemented the “straight baselines” method for enclosing the islands of its Arctic Archipelago, thus defining its internal waters. Under the Law of the Sea, straight baselines can be used to delineate internal waters from territorial seas by connecting offshore islands with straight lines to establish an outer perimeter (Charron, 2004). The Canadian enclosure move came on the heels of the second voyage of an American vessel through the Northwest Passage in sixteen years. In summer 1985 the Polar Sea, a United States Coast Guard icebreaker, was a controversial visitor to Arctic Canadian waters, after the SS Manhattan had made a transit in 1969. Considerable public and media outcry ensued in Canada. Canadian sovereignty had been violated. In a speech to the House of Commons often referred to as the “statement on sovereignty,” the Canadian Secretary of State for External Affairs (and former Prime Minister) Joe Clark noted the problem that the Polar Sea voyage presented. Clark stated that while Canada’s legal position was secure, means of actually exercising sovereignty were wanting.

Canada is an Arctic nation . . . Canada’s sovereignty in the Arctic is indivisible. It embraces, land, sea, and ice . . . The policy of the government is to maintain the natural unity of the Canadian Arctic Archipelago and to preserve Canada’s sovereignty over land, sea, and ice undiminished and undivided . . . no previous government has defined
(Canadian sovereignty’s) precise limits or delineated Canada’s internal waters and territorial sea in the Arctic. This Government proposes to do so (Griffiths, 1987, p. 270-272).

Secretary Clark went on to officially announce the straight baselines policy and also mention a variety of other steps the Canadian government would take to bolster its position, including construction of a state-of-the-art icebreaker and the opening of talks with the United States to discuss “cooperation in Arctic waters on the basis of full respect for Canadian sovereignty” (Griffiths, 1987, p. 272). The straight baselines enclosure was immediately protested by the United States, as have all other regulatory acts by Canada concerning the Northwest Passage. The European community also officially protested Canada’s straight baselines policy (McRae, 2007).

In the international arena, Article 234 of the Law of the Sea was implemented just before Canada’s straight baselines enclosure. The article was negotiated by Canadian policymakers and adopted in UNCLOS in 1982 (McRae, 1987). Known as the “Arctic exception,” Article 234 enables coastal states to enact laws and regulations to control marine pollution emanating from ships operating in ice-covered areas. The inclusion of Article 234 in the Law of the Sea provided international acceptance of existing domestic Canadian legislation, the Arctic Waters Pollution Prevention Act (AWPPA) of 1970. The AWPPA enabled a zone of pollution prevention control that extended 100 miles from Canadian Arctic coastlines. In this zone, tighter shipping standards are imposed to protect the unique Arctic ecology, especially from the threat of oil pollution. On June 10, 2010, the Canadian government amended the AWPPA to extend the pollution control zone to
200 miles outward from coastlines to match the dimensions of Canada’s Exclusive Economic Zone (EEZ).  

The Northern Canada Vessels Traffic Zone reporting system, called NORDREG, is an additional instrument to help implement Canadian policy in its Arctic area. NORDREG is a reporting and tracking mechanism for ships entering Canada’s Arctic EEZ. Mariners can obtain navigation, ice condition, and icebreaker assistance by participating in the system. Until recently, NORDREG was not mandated for vessels under Canadian law; it was a helpful service available to mariners if they chose to use it. Faced with the difficulties of navigating in the difficult Arctic maritime environment, most did. As of July 1, 2010 however, vessels greater than 300 tons and those with cargoes of pollutants or other hazardous materials are required to report and participate in the NORDREG system for the waters of Arctic Canada.

Changes to the AWPPA and NORDREG come under the framework of Canada’s so-called “Northern Strategy,” recently propagated by the Department of Foreign Affairs and International Trade Canada (DFAIT). This policy initiative was formally stated in 2009 and frames several goals under a renewed commitment to Canada’s Arctic, including: exercising Arctic sovereignty, protecting the environment, promoting social and economic development, and improving governance.

In pursuit of Northern Strategy goals, a variety of initiatives have been taken, including: continental shelf mapping; support for the recent International Polar Year;

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40 http://www.northernstrategy.gc.ca/gov/index-eng.asp
creating new protected areas and parks, building new harbor facilities, ordering a new Polar Class icebreaker, the CCGS *Diefenbaker*; deductions for affordable housing; incentives for resource development projects; the conclusion of land claims agreements and devolution of governing responsibilities to territories; and others. Tables 2.1 and 2.2 below present recent Northern Strategy commitments made by the Canadian government, including costs and revenues, where these have been determined.

### Table 2.1: Recent Northern Strategy Commitments, Projected Costs and Revenues

<table>
<thead>
<tr>
<th>Commitments</th>
<th>Cost (millions CD)</th>
</tr>
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<tbody>
<tr>
<td>Procurement of new CCG polar icebreaker</td>
<td>720.00</td>
</tr>
<tr>
<td>UNCLOS-defined continental shelf studies</td>
<td>40.00</td>
</tr>
<tr>
<td>Establishing an Economic Development Agency for the North</td>
<td>50.00</td>
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<tr>
<td>Renewal of Strategic Investments in Northern Economic Development program</td>
<td>90.00</td>
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<tr>
<td>Extension of Mineral Exploration Tax Credit</td>
<td>120.00</td>
</tr>
<tr>
<td>Northern geo-mapping to facilitate private mineral and petroleum exploration</td>
<td>100.00</td>
</tr>
<tr>
<td>Mackenzie Gas Project: environmental, regulatory, scientific, and Aboriginal consulting</td>
<td>37.60</td>
</tr>
<tr>
<td>Creation of commercial fisheries harbor in Pangnirtung</td>
<td>42.00</td>
</tr>
<tr>
<td>Northern social housing</td>
<td>200.00</td>
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<tr>
<td>Increase in Northerners’ daily residency deduction</td>
<td>20.00</td>
</tr>
<tr>
<td>Enhancement of Territorial Formula Financing</td>
<td>195.00</td>
</tr>
<tr>
<td>International Polar Year research</td>
<td>156.00</td>
</tr>
<tr>
<td>Feasibility study for Arctic Research Station</td>
<td>2.00</td>
</tr>
<tr>
<td>Upgrade of Arctic research infrastructure</td>
<td>85.00</td>
</tr>
<tr>
<td>Creation and expansion of protected areas in the Northwest Territories</td>
<td>15.00</td>
</tr>
<tr>
<td>total</td>
<td>1872.60</td>
</tr>
</tbody>
</table>

### Projected Revenue Streams

<table>
<thead>
<tr>
<th>Projected Revenue Streams</th>
<th>Return (millions CD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Issuing offshore oil and gas exploration licenses in the Beaufort Sea</td>
<td>1800.00</td>
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</tbody>
</table>

Table 2.2: Recent Northern Strategy Commitments, Costs Undetermined

<table>
<thead>
<tr>
<th>Commitments</th>
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<tbody>
<tr>
<td>Procuring new Arctic/Offshore Patrol Ships</td>
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<tr>
<td>Expansion and modernization of the Canadian Rangers</td>
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<tr>
<td>Establishing a Canadian Forces Army Training Center at Resolute Bay</td>
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<tr>
<td>Establishing a deep-water berthing and fueling facility in Nanisivik</td>
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<tr>
<td>Launching Radarsat II</td>
</tr>
<tr>
<td>Ongoing military and surveillance operations</td>
</tr>
<tr>
<td>Introducing new ballast water regulations</td>
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<tr>
<td>Amending the AWPPA</td>
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<tr>
<td>Making NORDREG reporting mandatory</td>
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<tr>
<td>Launching the Northern Regulatory Improvement Initiative</td>
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<tr>
<td>Establishing a three-year moratorium on the application of Marine Navigation Service Fees</td>
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<tr>
<td>Increasing funding for tourism promotion and community cultural and heritage institutions</td>
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<tr>
<td>Negotiating basin-opening financial support for the Mackenzie Gas Project</td>
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<tr>
<td>Investing in Northern recreational and green infrastructure</td>
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<tr>
<td>Extending broad-band services</td>
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<tr>
<td>Supporting Aboriginal Skills and Employment Partnership Program</td>
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<tr>
<td>Delivering the Food Mail Program</td>
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<tr>
<td>Improving territorial health systems</td>
</tr>
<tr>
<td>Supporting research in Northern industrial innovation, health priorities, and social and economic development</td>
</tr>
<tr>
<td>Establishing graduate fellowships on Canada’s role in the circumpolar world</td>
</tr>
<tr>
<td>Signing a MOU with the UK for polar research activities</td>
</tr>
<tr>
<td>Establishing conservation areas and national parks</td>
</tr>
<tr>
<td>Supporting the Health of the Oceans Initiative</td>
</tr>
<tr>
<td>Accelerating action on the reclamation and remediation of federal contaminated sites</td>
</tr>
<tr>
<td>Negotiating and implementing land claims and self-governance agreements with Aboriginal Northerners</td>
</tr>
<tr>
<td>Advancing devolution and implementation of agreements to build effective governance models</td>
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</tbody>
</table>

The Northern Strategy intends to be responsive to the “challenges and opportunities of the 21st century” that face Arctic Canada.41 These goals and initiatives indicate the concern for a strengthened presence in a stable and prosperous region. The Northern Strategy states plainly that Canada is an Arctic nation, but also recognizes the need for international engagement and cooperation in addressing Arctic issues.

The United States insists that international rules allow for the free passage of ships through the Northwest Passage. It holds a more utilitarian outlook on Arctic shipping issues, emphasizing the interests of seafaring states generally in the Northwest Passage over those of any one state. And though American dealings in the Northwest Passage have been relatively sporadic, for Canada they have had profound effects.

Like Canada, the United States also identifies itself as an Arctic nation. Its Arctic Region Policy is National Security Presidential Directive 66/Homeland Security Presidential Directive 25 (NSPD-66/HSPD-25), and like the Northern Strategy also dates from 2009. The Arctic Region Policy explains, first and foremost, that the United States has “varied and compelling interests” in the Arctic.42 It frames these interests in the context of several ongoing processes: evolving domestic security and defense policy, climate change and increasing human activity in the Arctic, the work of the Arctic Council, and increasing understanding of the Arctic environment. In this context, the policy states that it will meet the nation’s security needs in the Arctic, protect the Arctic environment, ensure sustainable development, strengthen institutions among the eight

41 Ibid.
42 http://www.fas.org/irp/offdocs/nspd/nspd-66.htm
Arctic states, involve indigenous communities, and enhance monitoring and research of Arctic environmental issues.\textsuperscript{43}

To implement these goals, the policy recommends a number of specific actions for many department and agency heads in what is referred to as a “whole of government approach.” Generally these call for departments to consult, cooperate with, and support the international community, international organizations, and individual nations on Arctic issues; define and protect American interests; develop a greater understanding of the Arctic domain, its environment, and its resources; pursue strategies to responsibly manage and sustainably develop Arctic resources; and continue to develop measures to improve Arctic management and identify opportunities for domestic or international response.\textsuperscript{44}

Notably, the policy states that in respect to some Arctic interests, the United States is prepared to act either independently or cooperatively. Such interests include “ensuring freedom of navigation and overflight.”\textsuperscript{45} The policy states in particular that “freedom of the seas is a top national priority” and that “the Northwest Passage is a strait used for international navigation, and the Northern Sea Route includes straits used for international navigation; the regime of transit passage applies to passage through those straits.”\textsuperscript{46} In further discussion of maritime transportation in the region, the policy also gives priority to safe and dependable navigation, and the protection of maritime commerce and the environment.

\textsuperscript{43} Ibid.
\textsuperscript{44} Ibid
\textsuperscript{45} Ibid
\textsuperscript{46} Ibid
In large part, the United States Department of State is leading on Arctic policy implementation. Secretary Clinton addressed the Joint Session of the Antarctic Consultative Treaty Meeting and the Arctic Council (see above) and attended a Canadian conference of Arctic coastal state ministers (mentioned below). The “Senior US Arctic Official” which represents the nation to the Arctic Council is also State Department official. Deputy Secretary of State James Steinberg recently explained the significance of Arctic issues at the Center for Strategic and International Studies:

We consider ourselves an Arctic nation and we have important strategic, economic, environmental, and other interests which will only become more acute as climate change transforms the Arctic. . . . the Arctic is kind of a test case of the ability of the international community to meet the international challenges of the 21st Century. And how we address this and our success in addressing this . . . really are going to foreshadow our ability as an international community to deal with the great transnational issues of our time. 47

Along these lines, the Arctic Region Policy also identifies the importance of international cooperation in the Arctic. In several areas, the policy calls for cooperation with the other Arctic states, with the Arctic Council, and other bilateral and multilateral organizations. Importantly, the Arctic Region Policy urges the United States senate to accede to UNCLOS. The United States is the only major country in the world not to have done so.

National level politicians from the state of Alaska also have a stake in Northwest Passage outcomes, and some potential influence over them. Acknowledging changing environmental conditions, new resource opportunities in the Arctic, and a potentially

47 “US Strategic Interests in the Arctic – Keynote by Deputy Secretary of State James Steinberg,” Center for Strategic and International Studies, April, 28, 2010.
navigable Northwest Passage, Congressman Don Young (R) and Senator Lisa Murkowski (R) introduced companion legislation in the House and Senate for the study of a strategic deep water sea port in Alaska (Arctic Deep Water Sea Port Act of 2009). The Alaska delegation, especially Senator Murkowski, strongly advocates for accession to the Law of the Sea. UNCLOS ratification enhances Northwest Passage outcomes by signifying the United States’ formal acceptance of treaty definitions for international straits, internal waters, and other maritime categories.

The Arctic Cooperation Agreement

Currently, the Arctic Cooperation Agreement of 1988 defines the system of rights and responsibilities between Canada and the United States for use of the Northwest Passage (see Appendix A for the full text of the agreement). Despite calls for changes to or even the discard of this institution, the agreement remains the rules in use by the two states.

From its name, the Arctic Cooperation Agreement (officially the Agreement between the Government of Canada and the Government of the United States of America on Arctic Cooperation) sounds as though it would be far-reaching, dealing with the full panoply of Arctic concerns common to both states. In fact, the agreement managed to capture only a narrow slice of common ground for both states – essentially that a shipborne scientific mission not be perceived as trespassing. The states’ opposing views of the legal status of the Northwest Passage made a broader regime untenable.
The agreement acknowledges a shared commitment to Arctic development, security, and environmental protection. However, the only actual guidance for vessel transits of the Northwest Passage is in a brief and somewhat opaque reference to American icebreakers conducting scientific research (see Article 3 of the Arctic Cooperation Agreement in Appendix A). The agreement requires that any such vessel wishing to navigate Arctic waters claimed to be internal to Canada must first ask for Canadian governmental consent. Beyond this, the agreement simply states that the two governments agree to take advantage of icebreaker navigation through the sharing of research information, in accordance with international law.48

Kirkey’s (1995) discussion of the negotiations that led to the 1988 agreement is insightful and quoted at length below. He describes the bargaining position of Canada upon entering negotiations with the United States just after the Polar Sea voyage in 1985:

Canada wanted an intergovernmental agreement that would unambiguously assert and reinforce existing Canadian claims to sovereignty concerning the waters of the Canadian Arctic archipelago - specifically the Northwest Passage; defuse a politically volatile, nationally symbolic, domestic issue; and be politically defensible before parliament and the Canadian public (p. 405).

The guiding principle for the Canadian negotiators became the statement in the House of Commons on September 10, 1985 by Secretary Joe Clark (mentioned above): “The exercise of functional jurisdiction in Arctic Waters is essential to Canadian interests. However, it is no substitute for Canada’s full sovereignty over the waters of the Arctic archipelago” (p. 406).

For its part, the United States sought in the negotiations to deny recognition of Canadian sovereignty over the Northwest Passage; to retain freedom of access to the Northwest Passage for United States maritime purposes; and to find a suitable arrangement for addressing Canadian political concerns without compromising the first two objectives – objectives that were fundamentally grounded in American oceans policy (p. 407).

The American position should be viewed against the backdrop of President Ronald Reagan’s policy statement from 1983 which declared, “The United States would not acquiesce in unilateral acts of other states designed to restrict the rights and freedoms of the international community in navigation and overflight and other related high sea uses” (Briggs, 1990).

With neither side willing to retreat from entrenched ideological and political positions, a stalemate in negotiations quickly arose. The impasse was revealed in a 1986 State Department memo:

Because the Canadian public has perceived this issue as a challenge to its sovereignty, the Mulroney government has little room for compromise. At the same time the United States cannot accept the Canadian claim because to do so would constitute acceptance of full Canadian control of the Northwest Passage and would terminate US navigation rights in other areas . . . Since the September 10 claim, we have had several meetings with Canadian officials to examine whether we might reach an agreement that provides a basis for cooperation in the Arctic region while not prejudicing either side’s legal position. So far we have been unable to agree on a way of dealing with the central issue of sovereignty (p. 410).

After two years of unsuccessful negotiation, a breakthrough finally came on the heels of a meeting between President Reagan and Prime Minister Brian Mulroney. Reagan essentially stated that the United States would not do “. . . anything (in the
Northwest Passage) without your (Canada’s) consent” (p. 414). Negotiators picked up on the President’s use of the term “consent” and used it to shape a compromise – “the tradeoff of passage for consent” (p. 416). In so far as American scientific research taking place in the Northwest Passage would be occurring within Canadian jurisdiction, American negotiators became amenable to the notion of seeking consent from the Canadian government for icebreaking ships engaged in such missions – as long as the final agreement included “disclaimer” language preserving legal positions without prejudice. The final text of the agreement therefore states: “Nothing in this agreement . . . affects the respective positions of the Governments of the United States and of Canada on the Law of the Sea in this or other maritime areas or their respective positions regarding third parties”. 49

The Arctic Cooperation Agreement is neither affirmation nor refutation of Canadian sovereignty for the waters claimed internal. Nor is it affirmation or refutation of international straits status for these waters. Instead, it preserves the states’ respective positions as non-prejudicial to the international legal status of the waterway. This means that requests for passage on the part of the United States, and grants of passage on the part of Canada have no bearing on international legal determinations of the status of the waterway. As the American Secretary of State George Schultz put it, “we have basically agreed to disagree at this point as to sovereignty and develop a kind of practical operation, a way for life to go on in a constructive manner” (p. 418). Indeed, McDorman (2008-2009) notes the Arctic Cooperation has been invoked five times for United States

49 Ibid
Coast Guard ice breaker transits since its inception, without incident. The most recent use of the agreement was concerning a 2003 voyage of the USCGS *Healy* (p. 287).

The Arctic Cooperation Agreement required over two years of expert negotiation to come about. Given the entrenched political positions of Canada and the United States and their unwillingness to seek international adjudication, it achieved a sufficient, or possibly efficient, balancing of the states’ interests and resolution to the conflict. Kirkey describes it as a mutually satisfactory outcome for both parties, achieved through an interdependent relationship, close relations between the executives of both states, and a process of integrative bargaining (p. 401-402). The agreement has been criticized however, particular regarding its “ambiguous” language as to what types of transits require Canadian consent (J. Kraska, personal communication, February 8, 2010). To the extent that there is some ambiguity in the text, the agreement could be seen as creating an “open-ended contract” that is applicable in changing conditions (Cooley & Spruyt, 2009).

The intent of the agreement was of course to enable a bilateral regime for transits of the Northwest Passage. However, it could be argued that what the Arctic Cooperation Agreement actually does is to implement Part XIII Section 3 of the Law of the Sea concerning the conduct of marine scientific research. It is in this section of the law that coastal state consent for the performance of offshore scientific research in its territorial sea, EEZ, and continental shelf is required.

This point was reaffirmed in 2006 by the United States Department of State in the form of a letter authored by then Ambassador to Canada David Wilkins. In clarifying the United States’ position on the Northwest Passage to Canada’s Department of Foreign
Affairs and International Trade, the letter made five points. First, that the United States could see no basis in international law for Canada’s internal waters claim over the Northwest Passage; second, that the Northwest Passage is an international strait where transit passage rights apply and coastal state permission is unnecessary; third, that marine scientific research is not a right of transit passage and therefore consent is needed; fourth, that the Arctic Cooperation Agreement of 1988 does not affect either state’s legal views in the matter; and fifth, that the United States sees no reason to seek Canadian consent to transit the Northwest Passage for vessels that are not conducting marine scientific research.

In the United States, the Arctic Cooperation Agreement is as an executive agreement, one of three unilateral policymaking tools, along with executive orders and proclamations, which can be exercised by the president. Executive agreements are somewhat controversial since they are contracts with foreign governments concluded without congressional consent. As such, they might be seen as somewhat less-credible commitments. Executive agreements do however carry the force of law, and the right of the president to secure these agreements has been upheld by the judiciary. As an executive agreement negotiated by the American president without congressional involvement, it could be argued that a “least-cost” method was used in negotiating the Arctic Cooperation Agreement. By the same hand then, would the costs involved in changing the Arctic Cooperation Agreement – renegotiating the contract – not be as high?
Chapter 2 presented a review of ongoing environmental change in the Arctic from which both positive and negative consequences result. Positive consequences of Arctic change stem from the phenomenon of resourceship (Zimmermann, 1951), where natural conditions and human appraisal can combine to produce valuable economic resources. The Northwest Passage is one such resource. With continued Arctic change, the prospect that the Northwest Passage would be useable for industrial-scale transit shipping improves. Because of interests in continued access to this resource, their extant Northwest Passage use agreement, and the larger economic considerations for global shipping; new emphasis has been placed on Canada and the United States and potential policy change for bilateral governance of this resource.

This chapter presents a contemporary assessment of Canadian and American interests, preferences, and positions regarding the Northwest Passage. International relations and economic research has suggested that actors’ preferences are shaped by their interests, and institutions are shaped by their preferences. An understanding of the interests of Canada and the United States in the Northwest Passage is therefore useful when considering the prospects for institutional change regarding this resource. To observe these states’ underlying interests with the Northwest Passage, this study employed expert interviews. Experts from both Canada and the United States assessed
the value of the Northwest Passage to each state, and the value of the position taken by each state with respect to its governance.

**Interview Format**

Semi-structured interviews were conducted in 2009 and 2010 with five Canadian experts (three academics, one active public official, and one former public official), and five American experts (two academics, two former public officials, and one active service member). The interviewees were: Dr. Rob Huebert, a professor in the Department of Political Science and a co-director of the Center for Strategic and Military Studies at the University of Calgary; Dr. Heather Nicol, a professor in the Department of Geography at Trent University; Dr. David VanderZwaag, the director of the Marine and Environmental Law Institute at Dalhousie University; Mr. David Jackson, manager of the Canadian Coast Guard’s Ice Breaking Program; Mr. John Falkingham, retired manager of the Canadian Ice Service within Environment Canada; Dr. Christopher Kirkey, a professor in the Department of Political Science and director of the Center for the Study of Canada at the State University of New York – Plattsburgh; Commander James Kraska, a professor of international law at the Naval War College in Rhode Island; Mr. Mead Treadwell, most recent past chairman of the United States Arctic Research Commission; the Honorable David Wilkins, former United States ambassador to Canada; and Commander Aundrea Taplin, a lawyer with the Office of the Judge Advocate of the United States Navy. These experts were selected because of their research on and/or extensive
knowledge of the Northwest Passage and the Arctic. They serve this study as able spokespersons for their respective state’s views of the resource in question.

Interview subjects appraised the position of both Canada and the United States regarding the governance of the Northwest Passage. The interview subjects were asked

What are the costs and benefits of the Northwest Passage as internal waters, and what are the costs and benefits of the Northwest Passage as an international strait?

In these interviews, ideas of costs and benefits were construed broadly by the informants; their assessments incorporated both qualitative and qualitative notions.

Interview Summaries

This semi-structured inquiry into costs and benefits revealed: (1) the importance of the Northwest Passage to either state, that is, the value of or interest in the resource, and (2) the importance of the position taken by either state, that is their preference toward its governance. A summary of each interview is presented here.

Dr. Rob Hubert

The most important benefit of Canada’s internal waters position in the opinion of Dr. Rob Huebert of the University of Calgary is that it serves Canadian nationalism and reinforces the emotional attachment that Canadians feel for the Northwest Passage and Arctic Canada. Hubert notes that this same notion is found in other popular and academic sources in Canada. Another benefit of the internal waters approach is that it utilizes the extensive Canadian expertise in operating in the Arctic environment. According to
Huebert, this benefit accrues not just to Canada, but to all potential users of the Northwest Passage. Dr. Hubert explains that the Arctic is a unique and technically complex environment characterized by extreme ice and weather conditions, seasonal darkness, and incomplete global positioning system (GPS) coverage. Huebert notes that of the 110 transits of the Northwest Passage (as of March 2009), only three failed to request Canadian assent. Huebert believes this is because shipmasters understand the need for Canadian assistance in Arctic navigation. He notes that while Arctic ice is in a state of overall decline, first-year and multi-year ice both remain seasonally variable, and that free floating multi-year ice can do serious damage to ships. In Huebert’s view the Northwest Passage is a risky environment where operations are best handled by Canadians, who possess the necessary expertise and experience.

Huebert identifies the cost of the internal waters position for Canada as the investment in the resources needed to enable Northwest Passage traffic. These include providing escort services, search and rescue, aids to navigation, monitoring, enforcement, and others. He characterizes Canada’s Northwest Passage problem as a “Rubik’s Cube” where commitment of Canadian resources, global demand for Arctic transportation, geopolitics, and environmental change are all moving parts of the puzzle. According to Huebert, the challenge for Canada lies in anticipating what is probably going to happen in the Arctic and the Northwest Passage and what it needs to do to respond.
Dr. Heather Nicol

Dr. Heather Nicol of Trent University agrees that Canadian nationalism and maintaining the emotional attachment to the Northwest Passage and Arctic Canada is a key benefit of the internal waters approach. This benefit is so great as to be “unquantifiable.” Nicol believes that the nationalistic and emotive sentiments concerning the Arctic are a construct of media, political, and public perspectives in Canada. In her view, the urgency of the Northwest Passage issue and its centrality to Canadian nationalism has been “pitched” to citizens. Dr. Nicol notes the possibility that an international straits regime for the Northwest Passage may require less outlay on the part of Canada for controlling and defending the waterway. In Nicol’s opinion however, the political benefits of the internal waters position outweigh any of its costs.

Mr. John Falkingham

John Falkingham, recently retired manager of the Canadian Ice Service in Environment Canada, concurs that with international strait status, Canada may not assume as many operating costs. Falkingham notes that currently the Canadian government provides satellite imagery, ice information, ice pilots, and other navigational aids for ships traversing Canadian and Canadian-claimed waters, with no cost recovery mechanism in place. Falkingham says that because there is no legal regime and because of international opposition, Canada cannot impose any fees on Northwest Passage transits. Falkingham goes on to note that with the internal waters regime, Canada would be encumbered with the cleanup costs of a fuel spill or other environmental mishap that
might occur in the Northwest Passage. It would also be Canada’s place to respond to a human emergency in the Northwest Passage, a disabled cruise ship for example.

Falkingham believes that reasonable laws made by Canada would best serve human and environmental security in the Northwest Passage. Canada would allow transits through the Northwest Passage in exchange for law-making authority, he believes. He states that Canada wants to have a presence in the Northwest Passage, providing services and protecting its national interests. However Falkingham wonders whether Canada is making sufficient investments in securing and controlling the Northwest Passage and the wider Canadian Arctic.

Mr. David Jackson

David Jackson of the Canadian Coast Guard acknowledges that fulfilling the Coast Guard mandate to provide nautical services is costly, and some of these costs are incurred through the internal waters position. With respect to the Northwest Passage, costs come in the form of the Coast Guard’s monitoring, response, and enforcement activities. Jackson notes that these costs are now rising as changing ice conditions have enabled the Arctic shipping season to begin sooner and last longer. To meet this new demand, Jackson says the Coast Guard will be required to extend its programs in the Northwest Passage and the wider Arctic. Jackson says the Coast Guard is dealing with ever-increasing cargoes heading north as communities in the Canadian Arctic grow. More aids to navigation and more bandwidth to download ice charts and other information are needed by vessels.
Jackson mentions that the Canadian government has recently appropriated $720 million to construct a new, state-of-the-art icebreaker. According to Jackson, providing this vessel will require the rebuilding of Canadian industry. In his view, the new icebreaker confirms that the Northwest Passage is Canadian waters. Jackson further notes that together with private industry, Canada will be required to increase waterway development and dredging activities in the Arctic maritime.

Jackson also sees the fulfillment of the Coast Guard’s mandate for nautical services as a benefit, and says that whatever the status of the Northwest Passage, internal or international, the Canadian Coast Guard will still carry out its mission.

Dr. David VanderZwaag

Dr. David VanderZwaag of Dalhousie University says that if ice conditions opened the Northwest Passage for transit traffic, benefits to regional and global trade would accrue in the form of savings on distance travelled, time spent en route, and fuel required for the voyage. However, VanderZwaag cautions that even if the Northwest Passage were open, it remains a risky environment, especially for hazardous cargoes. He says that with the internal waters approach, Canada bears the costs of environmental damage in the Northwest Passage from a ship-borne spill, for example. Canada would also bear the costs of any contingency planning taken to avoid this type of environmental damage. VanderZwaag also points out that while impacts to the indigenous people of the Arctic caused by pollution are difficult to measure, they are a great concern. He notes that
with internal waters, search and rescue becomes a Canadian endeavor, adding further costs.

Because of Canadian expertise in the Arctic maritime environment, VanderZwaag believes that keeping control of the Northwest Passage “in house” is the best policy for both Canada and for the international community. VanderZwaag notes however that the international straits approach would mean reduced costs to Canada. He comments that a benefit of cooperation is one of cost reduction; when faced with the high costs of going it alone, Canada may instead seek a cooperative, sharing approach for managing the Northwest Passage.

Commander Aundrea Taplin

Commander Aundrea Taplin of the United States Navy Office of Judge Advocate General states that the United States Navy’s position on the Northwest Passage is congruent with its National Security and Homeland Security Interests in the Arctic policy statement. Commander Taplin reiterates that for the United States, freedom of the seas is a top national priority. She states that the Northwest Passage is a strait used for international navigation, and that the regime of transit passage applies to passage through those straits. Commander Taplin notes that preserving the rights and duties relating to navigation and overflight in the Arctic region supports the United States’ ability to exercise these rights throughout the world, including through strategic straits.
Mr. Mead Treadwell

Mead Treadwell, who stepped down as director of the United States Arctic Research Commission in April 2010 to bid for Alaska’s lieutenant governor position, notes that the benefit of the international straits approach for the United States is that no permission is required to transit the Northwest Passage. The precedent-supporting effect of an international Northwest Passage is an additional benefit for the United States, and Treadwell notes that the United States does not hesitate to champion straits passage anywhere in the world. He says that the United States is only one of one hundred countries that view the Northwest Passage as an international strait, so the United States’ position is not a unilateral one. Treadwell notes the reluctance of the United States to cede to the political control of states that could bar access to Arctic shipping routes. According to Treadwell, the cost of internal waters to the United States is that it restricts access, especially for scientific research.

Treadwell notes that while the United States may not agree with Canada’s position on the Northwest Passage, it still respects it. He claims that the Arctic is important to the United States and that great opportunities exist to work together on economic and environmental issues in the region. As an example of ongoing cooperation between the United States and Canada in the Arctic, Treadwell cites work on search and rescue procedures, icebreaker design standards, and a joint proposal to the International Marine Organization for mandatory international Arctic shipping guidelines. Treadwell says that working together is in the interest of all parties, while an inability to cooperate on Arctic issues means everyone loses. In this vein, Treadwell recommends that a unified
effort be undertaken by Arctic states for managing regional shipping. With the full participation of all states in the region, rules to guide Arctic shipping would be made and applied inclusively. To this end, the Arctic Research Commission has created draft legislation which would enable funds for joint investment and the ability to negotiate with Canada, Russia, and other Arctic and seafaring nations.

The Honorable David Wilkins

The Honorable David Wilkins, former United States ambassador to Canada, says the Northwest Passage is, and can be managed as, an international strait. He feels that the position of the United States on this issue is unlikely to change. He identifies the benefits of the international straits approach for the United States as strengthening the precedent for navigating straits elsewhere in the world, and preventing Canada from barring access to the Northwest Passage. Wilkins acknowledges that Arctic sovereignty is a popular position in Canadian politics, but notes that for the United States, sovereignty is not the issue. Wilkins explains that the issue is whether a state can bar access to an international strait. For this reason, he says the issue is actually between Canada and the rest of the world.

Wilkins is of the opinion that Canada can and should continue to develop its presence in the North. He says that the United States encourages these efforts, and when the changing ice conditions reach a critical level, Canada and the United States will work out a solution for this problem. Wilkins says it is in the interest of the United States to resolve differences, and based on the relationship that exists between Canada and the
United States, and the history of mutual trust between them, he believes this issue too will be resolved.

Dr. Christopher Kirkey

Dr. Christopher Kirkey of the State University of New York at Plattsburgh says the benefit to Canada of internal waters is the continued assertion of political sovereignty over land and waters. He describes Arctic sovereignty as “mythical” for Canada. He notes that the Arctic Waters Pollution Prevention Act and the Arctic Cooperation Agreement were created to protect Canada’s Arctic “backyard.” He says that these past efforts strengthen Canada’s internal waters position because they forward Canada as a steward of the environment. If, however, the legality of Canada’s Northwest Passage policy were to be disproven, then these domestic acts could become untenable, and the internal waters approach would become a cost for Canada.

Kirkey finds the benefit of the international straits position for the United States is that it maintains access for the nation’s maritime activities, including military and commercial voyages. He explains that if Canada’s position on the Northwest Passage was recognized by the United States, it would circumscribe the regime of unimpeded transit, and straits passage for the United States could be jeopardized elsewhere. The United States therefore does not want Canada to set an example that other coastal states might follow.

Kirkey goes on to say that today Canada has a genuine concern for regulating the movements of oil tankers in the Northwest Passage. He says this concern extends beyond
sovereignty. He explains that beginning four decades ago, the possibility of sending tankers through the Northwest Passage was explored as a means for getting oil from Prudhoe Bay to southern markets. But with the 1989 Valdez spill in Alaska, the uncertainties of climate change, and the public and private sector interests at play in the Northwest Passage, it is in the interest of both Canada and the United States to be proactive on this issue. Kirkey says that the Arctic Cooperation Agreement had a short lifespan, and that it is now time for the two states to reengage on this issue.

Commander James Kraska

Finally, Commander James Kraska, a professor of international law at the United States Naval War College in Newport, Rhode Island, identifies two important benefits for each state with respect to its Northwest Passage policy. For Canada, the foremost benefit of the internal waters view is a psychic one. Because Canada’s historic demonstration of control over the Northwest Passage has been unconvincing; regulating access to it with the internal waters policy offers a sense of safety and security. The second benefit to Canada of the internal waters position is a political one. By standing firm on a position opposed to that of the United States; Canadian politicians are able to curry favor with the electorate. For the United States, the international straits view supports an important economic benefit; the global economy depends on freedom of navigation. According to Kraska, if the United States made an exception in the Northwest Passage case, other countries that make excessive internal waters claims would also want to make their own rules. The other major benefit for the United States of the international straits view is a
military one. Kraska claims that to maintain security and protect national interests, the United States military must be able to move about the world’s oceans as needed.

Kraska points out that the Arctic Cooperation Agreement of 1988 only applies to American icebreaking ships that are performing scientific research. Other types of ships do not need to request Canadian permission to transit the Northwest Passage. He notes however that Canada does not see the agreement this way, believing that the United States is required to ask for permission for any and all voyages. Kraska describes this difference in interpretation as the problem of “constructive ambiguity” that can occur in international law.

Kraska finds the internal waters view of the Northwest Passage to be insensible under international law. He also notes that Canada has changed its position on the Northwest Passage over the years. But now, by framing the Northwest Passage issue as one of contested sovereignty, Kraska believes that Canada has painted itself into a corner politically. The notion of Canadian sovereignty and its connection to the Northwest Passage has become an extremely popular position among the electorate. The opposing American position is seen by many Canadians as a challenge to its security and sovereignty. The combined message of politicians, the media, and academia in Canada reinforces this “threatened sovereignty” view, and also makes it very difficult for the government to convince citizens of any other position. Kraska says it would be extremely risky from a political point of view for Canada’s government to change course on this issue.
Canada wants to keep this a bilateral issue which, according to Kraska, it is not. He says that Canada wants to leverage American power against other foreign seafaring countries, such as China, so it wants to get the United States to take its side. The problem for the United States, as Kraska sees it, is its lack of concern with the issue. Unlike in Canada, where a large segment of the population is politically motivated by the Northwest Passage dispute, in the United States the situation is largely unknown. As such, Kraska feels it could be very easy for the United States to accept a deal with Canada that would look good politically, but ultimately not be in its best interest.

Finally, Kraska states that no country has the right to close off the high seas. Under the law then, the United States would not be able to make a bilateral deal with Canada that would have such an effect, even if it wanted to.

Discussion

What benefits are encompassed within each state’s preferred approach to governing the Northwest Passage? What costs are associated with each? Answers to these questions can be found in the comments of these interviewees. They are organized in Tables 3.1 and 3.2 below.

The value of the Northwest Passage to Canadian politics derives in large measure from its socio-cultural value, its place of primacy in the national identity. The sovereignty issue concerning the Northwest Passage and Arctic Canada stems from the connection between national integrity and national identity.
<table>
<thead>
<tr>
<th>Benefits</th>
<th>Costs</th>
</tr>
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<tbody>
<tr>
<td>Serves Canadian nationalism and maintains emotional attachment to the Northwest Passage and Arctic Canada</td>
<td>Investments in the resources necessary to enable Northwest Passage traffic and extending programs to effectively extend shipping season in Northwest Passage and wider Arctic, as ships start sooner and stay later, including: escorting; search and rescue; satellite imagery, ice information, ice pilots, and other aids to navigation; monitoring, and enforcement</td>
</tr>
<tr>
<td>Human and environmental security in the Northwest Passage, a unique and challenging environment, are better served through Canadian laws and expertise; keeping control of the Northwest Passage “in house” is best for both Canada and the international community</td>
<td>Canada would encumber the clean-up costs if a fuel spill or similar environmental damage occurred in the Northwest Passage, including indigenous losses from Arctic pollution which are difficult to measure; Canada would respond to a human emergency, such as a shipwreck, in the Northwest Passage</td>
</tr>
<tr>
<td>To Canada, internal waters means the continued assertion of political sovereignty over land and waters, enabling Canada “to be there” to fulfill government policy and mandate, provide services, and protect its national interests</td>
<td>In concert with private industry, Canada would be responsible for some costs of waterway development and dredging activities; $720 million for new icebreaker, and the “rebuilding Canadian industry to do it”</td>
</tr>
<tr>
<td>By standing firm on a position opposed to that of the United States; Canadian politicians are able to curry favor with the electorate</td>
<td>“Rebuilding Canadian industry” to provide a new icebreaker</td>
</tr>
<tr>
<td>A sense of safety and security for Canada</td>
<td>Restricts access for the United States, especially for scientific research</td>
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Table 3.2: Benefits and Costs of the Northwest Passage as International Strait

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Costs</th>
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<tbody>
<tr>
<td>Canada may not have to assume as many costs to control and defend the Northwest Passage</td>
<td>Impacts to Canadian relations, i.e. spillovers into politics, and possibly military collaboration, such as undersea navigation in Arctic</td>
</tr>
<tr>
<td>Freedom of the seas is a national priority for the United States; preserving the rights and duties relating to navigation and overflight in the Arctic region supports the ability to exercise these rights throughout the world, and maintains the precedent for international navigation; other countries would not be enabled to push for a special circumstance</td>
<td>Since overflight is included in international straits North American security is threatened, anyone can send bombers over the Northwest Passage, an invitation to kick open a vulnerable “back door”</td>
</tr>
<tr>
<td>Supports an important economic benefit for the United States in that it maintains access for commercial voyages; the global economy depends on freedom of navigation</td>
<td>Weakens Canada’s internal waters position and makes its authority for domestic acts less tenable; Canada would not be seen as the sole steward of the Northwest Passage environment.</td>
</tr>
<tr>
<td>A military benefit for the United States; to maintain security and protect national interests, the United States military must be able to move about the world’s oceans as needed</td>
<td></td>
</tr>
<tr>
<td>Prevents Canada from barring access to the Northwest Passage; no permission is required to transit the Northwest Passage</td>
<td></td>
</tr>
<tr>
<td>To counterbalance Russian arctic activity generally</td>
<td></td>
</tr>
</tbody>
</table>

Apparently a large segment of the Canadian populace feels that increased Canadian control over Arctic assets, including the Northwest Passage, is imperative. The government of Prime Minister Stephen Harper has delivered a similar message on several occasions. Prime Minister Harper’s pronouncements of a buildup of defense infrastructure in the Arctic region and his signaling of the intention to utilize the
resources of Arctic Canada to serve Canadian interests are by now well-known among the populace. Chapter 2 noted that the Canadian government identifies at least $1,800 million in commitments to public projects related to Arctic sovereignty as a part of its Northern Strategy.\(^5\)

Besides economic development and security goals, these pronouncements and policy initiatives serve to demonstrate the resoluteness of the government on the issue of Northern sovereignty. As Dr. Heather Nicol noted, “... nationalism and maintaining the emotional attachment to the Northwest Passage and Arctic Canada is a key benefit of the internal waters approach. This benefit is so great as to be ‘unquantifiable’... the political benefits of the internal waters position outweigh any of its costs” (H. Nicol, personal communication, March 18, 2009. And as another Canadian informant put it, for any government to appear soft on the sovereignty issue would be the equivalent of “electoral annihilation” (I. Townsend-Gault, personal communication, March 20, 2009). In this way, the Northwest Passage, the icon of Canada’s North, garners political capital for actors who use it.

Interest in providing for environmental integrity and stable shipping activities in the Northwest Passage are noted by the interviewees. It is felt that the ability to monitor ship traffic and enforce Canadian laws and regulations in the Northwest Passage allows for a more secure homeland, ensures territorial integrity, and reinforces the psychic bond between Canadian citizens and their homeland. There is a strong interest in providing these services unilaterally, which stems from the desire to reinforce Canadian sovereignty.

\(^5\) http://northernstrategy.ca
of the resource. Also expressed in the interviews was the confidence that Canadian expertise with Arctic navigation and hazards is the surest way to safe, dependable, and efficient shipping in the Northwest Passage.

The cost of Canadian implementation of the internal waters policy was noted by some interviewees, and appears to be a growing concern. Interviewees recognized the economic investments required of Canada to support safe, dependable, and efficient shipping activities in the future Northwest Passage. It was mentioned that cost reduction may in fact be the most compelling reason for Canada to seek a joint arrangement with the United States for managing the Northwest Passage.

The United States has a strategic interest in the Northwest Passage. Its position on Northwest Passage governance is important because it allows for the continuation of legal and customary principles concerning the freedom of the seas, legitimizing the movement of military and commercial assets. As a route used for international navigation, the Northwest Passage completes a file of other international straits across the globe to which the doctrine of transit passage applies. It thus helps maintain a worldwide precedent for straits navigation available to the United States and all other seafaring nations. From this view, freedom of navigation and the development of a state’s economy are fundamental values. Together they comprise an international norm. American informants point out that several nations, not only the United States, share this view. Through its view of the Northwest Passage and its international navigation policies, the United States sees itself adhering to and upholding this norm. Therefore, were the United States to submit to the Canadian Northwest Passage position, it is feared that the precedent for transit passage
through international straits would be circumscribed, and the United States and possibly other seafaring nations could lose freedom of access on the world’s oceans. The United States is unable to accept an internal waters approach to governing the Northwest Passage because it fears other coastal states could follow the example set by Canada and attempt to bar passage through straits.

Importantly, these interviews show that the fundamental interests of each state in the Northwest Passage have remained essentially unchanged since the institution that guides its joint use, the Arctic Cooperation Agreement, was created. For Canada, the Northwest Passage is a cultural resource. It is a unique component of the national heritage which helps fulfill national identity. It therefore deserves protection and stewardship. For the United States, the Northwest Passage is a strategic asset. By enabling the mobilization of commerce and the projection of military might, it helps to fulfill national interests and ideology.

While these interviews point up the stability of the two states’ preferences regarding the Northwest Passage, they also indicate some potential openings for institutional change. The following chapter discusses this potential. It also introduces two institutional models that have been forwarded in the literature and in interviews as alternative arrangements suitable for future Northwest Passage governance.
CHAPTER FOUR
THE BENEFITS OF INSTITUTIONS AND THE COSTS OF THEIR CHANGE

Michael Doyle, a scholar of international institutions, sees institutions as a necessary guide for economic, social, and political interaction at the international level. He advocates “broadening and deepening” the legitimacy of institutions to achieve this purpose. In the previous chapter, some interviewees suggested that Canada and the United States employ a cooperative arrangement to solve their resource governance dispute over the Northwest Passage. Calls from the wider academic and policy community have also recommended as much.

This “institutional solution” appears to be a sensible one. Canada and the United States share a robust history of developing institutions. From the Great Lakes Treaty, to NORAD, to NAFTA, the past century in particular has seen continued efforts by Canada and United States to strengthen their social and economic bonds by jointly creating and employing guidelines for mutually beneficial interaction.

Over twenty years ago, Oran Young (1987) discussed the need for Canada and the United States to work together to create an international regime for Arctic shipping. Young suggested that the new regime could specifically address the management of the Northwest Passage by refocusing Canada and the United States away from their resource jurisdiction concerns and onto more functional concerns, such as mitigating the impacts

of shipping to ecological and human systems (Young, 1987, p. 128-132). Recent commentators have followed Young’s lead, recommending Canada’s engagement in bilateral and international regimes for the Northwest Passage, and advising that such arrangements focus on environmental stewardship and human security (Charron, 2004, 2005a, 2005b; Griffiths, 2008). According to these commentators, participation in such regimes requires Canada to move “beyond sovereignty” or to “set sovereignty to the side.” Still other commentators have identified specific resource governance regimes upon which bilateral management of the Northwest Passage could be modeled (Kraska, 2007; J. Kraska, personal communication, February 8, 2010; Flemming, 2008; M. Treadwell, personal communication, November 9, 2009; D. VanderZwaag, personal communication, April 2, 2009).

Acknowledging the history of Canadian-American collaboration, as well as the above commentators’ recommendations, what advantages lie in the development of an institution for Canada and the United States in resolving their Northwest Passage resource governance dispute? What are the benefits to be had with this course of action? This chapter explores the development of an institution as a means for resolving these states’ resource governance dispute. Institutional concepts are presented, as well as the practical examples suggested by interviewees and other commentators.

And what are the costs? Importantly, this chapter will also consider the costs associated with institutional adoption. Scholars such as Ostrom and North, mentioned earlier, direct attention to the fact that devising new rules or altering existing ones cannot be done for free.
Concepts of Institutions

The concept of an institution was introduced in Chapter 1. The definition, function, and emergence of institutions are reviewed here in more detail. Institutions are sets of formal or informal rules that simultaneously constrain and facilitate the actions of their participants. Formal institutions include governments, firms, contracts, laws, markets, and property rights; informal institutions include conventions, customs, norms, taboos, and traditions (Coase, 1988; Haas, Keohane, & Levy, 1993; North, 1991). Treaties or other forms of agreement between states are an example from the international realm.

Institutions enhance the order, efficiency, certainty, and profitability of economic, social, and political interactions. They help participants to cooperate and to resolve conflicts, and they shape actors’ strategies and their expectations about the future (Haas, Keohane, & Levy, 1993; Mantzavinos, 2001, 2009; North, 1991; Ostrom, 1990). Often, institutions are simply referred to as “the rules of the game” (Mantzavinos, 2009).

Utilitarian theories of institutions find that institutions are demanded because they increase social welfare. By minimizing the costs of collaborative effort, institutions help produce goods that would not come about through independent effort. When actors have complementary interests, institutions can allow exchange to occur and the gains of trade to be realized, as with markets. When the interests of actors are in conflict, institutions can enable integration to occur, as in shared problem-solving (Fisher, Ury, & Patton, 1981; Raiffa, 2002). The problem-solving capacity of institutions is also recognized by Mantzavinos (2001). Given that actors are continuously striving to increase their utility,
Mantzavinos sees a problem of continuous conflict. He finds that institutions exist to help actors to resolve the conflicts that will eventually arise among them (p. 85-86).

Bates (1988) notes that when trust is present and actors’ commitments to one another are credible, the prospects for institutions to be supplied are improved. Actors who seek to form institutions can take steps to signal each other of their credible intentions and their trustworthiness. Repetitious interaction and an awareness of the shadow of the future reinforce trust and commitment among actors (Axelrod, 1984; Bates, 1988). The benefits of joint gains that accrue to institutional participants can serve as a strong disciplinary force at work in institutional preservation (Gourevitch, 1999). And when institutions are designed in such a way that actors’ strategies become contingent and a sense of community is encouraged, self-monitoring and self-governing can occur (Ostrom, 1990).

Choices must be made about the type of institution to be formed in a given situation. Further decisions about the specific structure and procedures of the institution, and other important details, must also be made. These choices are influenced by the preferences of the institutional actors themselves (Frieden, 1999). Furthermore, since institutions are often nested one inside another, these choices can also be influenced by the larger institutional setting in which actors operate (Morrow, 1999). And since information is imperfect and the events of the future uncertain, institutions may be incompletely structured. In this way, an institution can be reconfigured or renegotiated as new conditions warrant (Cooley & Spruyt, 2009).
The uncertainty and complexity that actors face is also discussed by Mantzavinos (2001). He explains that actors’ cognitive limits are challenged by imperfect information, uncertainty, and complexity, and therefore institutions exist to simplify and stabilize interactions in a world that often defies understanding. In this view, institutions, as sets of rules, implement problem-solving and decision-making standards. With an institution in place, problems do not need to be solved and decisions do not need to be taken on an “ad hoc” basis; actors are freed from the “need to decide each time anew” (p. 86). Through institutions, the opportunity costs of the time, energy, and other resources that would be invested in deciding and problem-solving are saved.

**Institutional Models**

Having formed a conceptual basis for what institutions are, what they do, and why they come about, this section examines two existing institutions recommended by some of the interviewees and other scholars. These institutions are offered as models of resource governance that could be applied to the Northwest Passage case. Both Flemming (2008) and Treadwell (personal communication, November 9, 2009) have advocated for the application of the Saint Lawrence Seaway model for use in governing the Northwest Passage. Kraska (2007; personal communication, February 8, 2010) and VanderZwaag (personal communication, April 2, 2009) however have both advocated for the application of the Straits of Malacca and Singapore model to the Northwest Passage case. An overview of the institutions that govern these waterways is presented below. These
regimes are viewed in light of salient institutional concepts just discussed, and the advantages that these models afford the Northwest Passage are noted.

The Straits of Malacca and Singapore

The Straits of Malacca and Singapore (referred to from here as “the Straits”) lie off the coasts of the Southeast Asian countries of Indonesia, Malaysia, and Singapore. At 520 nautical miles in length, the Straits connect the Indian Ocean with the South China Sea and the wider Asian Pacific. Since one-quarter of the world’s commerce and half of its oil passes through the Straits of Malacca and Singapore, they are considered vital to the health of the global economy (Ho, 2009). The International Maritime Organization (IMO) estimates that if the Straits ever closed to ship traffic, the effect would be an immediate increase in freight rates all over the world (Desker, 2005).

Before the agreement of the United Nations Convention on the Law of the Sea in 1982, both Indonesia and Malaysia had attempted to assert territorial waters claims over the Straits (Kraska, 2007). These assertions caused users of the Straits to fear an encroachment on their rights of free navigation. But with the advent of the regime of transit passage created by UNCLOS, a new balance was struck between the rights of states bordering international straits and the rights of the users of these straits (Kraska, 2007). By limiting straits states’ regulatory capacity in international straits, the regime of transit passage upholds straits users’ need for unimpeded transit of international straits. Straits states’ powers to regulate illegal activities in their territorial waters are reinforced by UNCLOS, and Article 43 of the convention encourages burden-sharing between states
bordering international straits and states that use international straits. Article 43 requires that:

User States and States bordering a strait should by agreement cooperate (a) in the establishment and maintenance in a strait of necessary navigational and safety aids or other improvements in aid of international navigation; and (b) for the prevention, reduction, and control of pollution from ships (UNCLOS, 1982).

By the early 2000s, all parties interested in navigation in the Straits of Malacca and Singapore would be called upon to do their share in ensuring safe and efficient passage. The events of September 11, 2001 in the United States combined with increasing acts of high seas piracy and political terror in the Southeast Asian region created concerns for the security of ships passing through the Straits of Malacca and Singapore (Desker, 2005). In 2004, forty-five acts of piracy and armed robbery occurred in the Straits, the second highest total since recordkeeping began in 1991 (Ho, 2009). As a natural chokepoint, the narrowness and shallowness of portions of the Straits make transiting ships easy prey for pirates. Worse, it was feared that political terrorists could use hijacked ships in the Straits in the same way that aircraft were used on 9/11 (Ho, 2009). For ships sailing east into the heart of Asia’s economic engine however, avoiding the Straits would add on an extra 600 miles, and the associated costs, to the voyage (Ho, 2009).

With these potential threats to security and efficiency looming, the Indonesian, Malaysian, and Singaporean navies together undertook increased security patrols in the Straits (Desker, 2005). The equity problem in this course of action was quite clear to the Straits states and to IMO, however. Users of the Straits also needed to be involved in
contributing to the safety and security of this global resource. In providing the collective benefit of efficient straits passage, both the rights and the responsibilities of all stakeholders – the sovereign straits states and the navigators of international straits – needed to be guaranteed. Faced with these new circumstances, in 2006 the stakeholders and IMO undertook a joint effort to ensure safe and efficient shipping through the Straits. Together these parties would implement Article 43 of the Law of the Sea, an action that, at that time, had yet to be done anywhere in the world (Ho, 2009; Koh, 2007; Kraska, 2007).

To operationalize Article 43 in the Straits of Malacca and Singapore, a framework for collaboration, the so-called Cooperative Mechanism, was devised. The Cooperative Mechanism enables the needs of the Straits, its users, and the Straits states to be addressed in a collective setting. The Cooperative Mechanism was agreed in negotiations between the Straits states, the user states, shipping industry representatives, and IMO between 2006 and 2007. It is composed of three parts: (1) the Forum for Cooperation, (2) the Project Coordination Committee, and (3) the Aids to Navigation Fund. The Forum for Cooperation, made up of officials from the maritime authorities of the Straits states, is the channel through which parties interested in assisting with Straits-related issues can engage the Straits states. The Project Coordination Committee oversees the development of infrastructure, clean-up, and awareness and response projects in the Straits. The Aids to Navigation Fund collects voluntary contributions made by stakeholders for financing these projects.
Under the Cooperative Mechanism, primary responsibility for security in the Straits remains with the Straits states. Funding for operations and infrastructure is requested from the user community, but is not required. In a commitment to transparency, the Cooperative Mechanism uses best international practices for managing the contributions of users and the financing of projects (Ho, 2009). As of 2009, these projects, either planned or in progress, have attracted approximately US$5.2 million in pledges and contributions from the Straits states, eleven user states, four industry groups, and one foundation (Ho, 2009). In-kind contributions in the form of capacity building exercises and shared expertise have also been made by states, groups, and IMO. Projects include repair and replacement of navigational aids, development of information technology infrastructure for maritime domain awareness, preparedness and response systems for ship-based pollution, and technological infrastructure for ship identification and tracking (Ho, 2009).

In successfully implementing Article 43 of the Law of the Sea Convention, the Cooperative Mechanism has served the needs of the Straits states, the user community, and the straits themselves. Tommy Koh, the president of the Third United Nations Conference on the Law of the Sea from 1981-1982, noted that in creating the Cooperative Mechanism, the Straits states, the user community and IMO were all able to work together in an open and inclusive manner (Koh, 2007). In this way, convergent interests in navigational safety and environmental protection in the Straits, and the preservation of the rights of users and sovereigns were managed effectively by this institution.
The Saint Lawrence Seaway

By the end of nineteenth century, the “shared resource” (Jenish, 2009, p. 10) of boundary and trans-boundary waters had become a growing concern for Canada and the United States. In water bodies such as the Great Lakes and the Saint Lawrence River, problems with water quantity, navigation, hydroelectric power generation, and scenic preservation were increasingly the focus of disputes between parties on either side of the border (International Joint Commission, 2008).

Canal building provided some relief. Canals for diversion and navigation had been built on shared waters by both countries for some years. The Welland Canal in Canada is a notable example. Skirting the Niagara escarpment to join the Great Lakes of Ontario and Eerie, the Welland Canal became fully operational by the mid 1800s. It would be rebuilt several times to accommodate increasingly larger vessels and improve the efficiency of marine transport from the eastern seaboard to the upper Great Lakes region (Jenish, 2009). To investigate still greater efficiency in commercial navigation, Canada and the United States formed a joint Deep Waterways Commission in 1895 and tasked it with a feasibility study for a fully functioning seaway from the Great Lakes to the seaboard. But after this commission’s work was complete, no cooperative effort towards a seaway was made.

The signing of the Boundary Waters Treaty in 1909 would smooth the way for addressing common concerns on shared Canadian-American waters, including commercial navigation. Now a century old, the Boundary Waters Treaty remains the mechanism through which Canada and the United States agree to manage their shared
water resources – including the Great Lakes and the Saint Lawrence River – for the benefit of both countries. The treaty created the International Joint Commission (IJC) to advise the two states in making joint policy for shared waters, and to resolve emergent disputes.

Despite the accession of Canada and the United States to the Boundary Waters Treaty and the formation of the IJC, there would be still more decades of studies, independent actions, industry lobbying, and further treaty-making connected to the joint seaway project, with no result. Finally in the mid 1950s, conditions ripened for the construction of the Saint Lawrence Seaway by the two countries.

The Saint Lawrence Seaway (referred to from here as “the Seaway”) was completed and opened to shipping in 1959 at a cost $475 million (Jenish, 2009). The Seaway is a 3700 kilometer-long deep draft waterway that allows commercial vessels to navigate from the Atlantic Ocean to Lake Superior, halfway across the continent of North America. The Seaway operates on the Saint Lawrence River and the Great Lakes, a combined system containing one-fifth of the planet’s fresh surface water. In the view of Richard Corfe, the president of the Saint Lawrence Seaway Management Corporation, the Great Lakes-Saint Lawrence River system is a “shared resource,” and requires that the Seaway and all other stakeholders in the system develop a common agenda for its sustainability (Jenish, 2009). Indeed, one-third of the population of North America lives in the states and provinces that border this resource system, one which has made an important economic impact in this region, and beyond. Since its opening in 1959, the Seaway has carried 2.3 billion tons of cargo worth $350 billion to markets in Canada, the
United States, and the rest of the world. These cargos include grains, iron ore, coal, sugar, aggregates, petroleum products, and others. Some 225,000 jobs in Canada and the United States are connected to the Seaway. The commercial activities of the Seaway account for approximately $9 billion annually in personal income, business revenues, and provincial, state, and local government taxes (Jenish, 2009).

Two corporations, one in either country, jointly administer the Seaway. The Saint Lawrence Seaway Development Corporation (SLSDC) is a government corporation of the US Department of Transportation. It constructs, operates, and maintains the portion of the Seaway between Montreal and Lake Eerie that lies within the territorial limits of the United States (SLSDC, 2009). The Saint Lawrence Seaway Management Corporation (SLSMC) is a Canadian non-profit corporation with a mission of providing safe and efficient marine traffic through the Canadian facilities of the Seaway (SLSMC, 2008). These corporations coordinate the rules and regulations, safety and environmental programs, tolls, daily operations, inspections, traffic management, navigational aid, operating dates, and trade development for the entire bi-national system (SLSDC, 2009). In this way, the two corporations together ensure safe and well-managed maritime commerce on the Seaway.

The IJC provides official oversight for the Seaway operations of the two corporations. It has the authority to review and approve the waterway development activities of the two corporations.\textsuperscript{52} The IJC is composed of six commissioners, three from either country which are appointed by the American president and the Canadian

\textsuperscript{52} Importantly, in 1952 and 1956. International Saint Lawrence River Board of Control
Governor in Council, respectively. The IJC holds public hearings, conferences, and meetings related to boundary and trans-boundary water resource and air quality issues. These events provide a forum for individuals, groups, and organizations to become educated on boundary and trans-boundary resource matters and to present their opinions and concerns. The IJC also investigates boundary and trans-boundary resource issues and recommends policy options based on its findings, when requested by the two states. The IJC has a quasi-judicial authority over development projects on the resources in its remit. Project approval hinges on the consideration of development impacts to interests on either side of the border. To mitigate potentially damaging impacts and harmonize competing interests, the IJC can compel design or operational changes before granting project approval. Boards are created and staffed with stakeholders and members of the public from both countries to monitor project implementation in accordance with IJC decisions (IJC, 2008).

The IJC also provides the corporations with a forum for the exchange of ideas regarding issues of common concern on the Great Lakes-Saint Lawrence River system. A recent example involves water levels and flows on Lake Ontario and the Saint Lawrence River. After management options for these water levels were proposed by the IJC, the SLSMC submitted its own analysis and commentary. In guiding policymaking for shared Canadian-American waters, the IJC must consider, among other stakeholder concerns, the maintenance of water levels sufficient for Seaway operations.

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**Beneficial Features**

In both the Straits of Malacca and Singapore and the Saint Lawrence Seaway cases, some of the conceptual features of institutions discussed at the beginning of this chapter are apparent. The Cooperative Mechanism in the Straits regime and the International Joint Commission in the Seaway regime both serve to mitigate conflict and enable cooperation. The Cooperative Mechanism provides an arena for collective action. It delineates the processes through which interested parties interact, take responsibility for resource-related issues, and commit themselves to other stakeholders and to the resource itself for providing these collective goods. The International Joint Commission provides a forum for exchange between stakeholders and develops guidelines regarding their activities. It authorizes and facilitates the activities of the two Seaway management organizations, the SLSDC and the SLSMC. These organizations themselves make rules that govern the day to day shipping operations of the Seaway.

These institutions encourage trust and credibility, and supply orderly and efficient transportation, a joint product available to all users and stakeholders. The Straits regime is based upon an open and inclusive process, where financial best practices and transparency are pillars. In the Seaway regime, Canadian and American corporations coordinate rule-making and other activities with each other and engage other stakeholders through the IJC. This coordination works so well in fact that despite twenty-three border crossings for ships steaming along the Saint Lawrence Seaway into Chicago from the Atlantic, there remains only one telephone number, one standards book, one toll location, and one inspection point required of these ships (M. Treadwell, personal communication,
According to Treadwell, this is the positive effect of the Seaway regime. He states, “We need to get to this (the Seaway arrangement) for Arctic shipping” (M. Treadwell, personal communication, November 9, 2009).

Flemming (2008) also advocates for the application of the Seaway model in the Northwest Passage case. He notes, in particular, the joint authority of the two states over the resource implemented by the Seaway model. Flemming suggests that a cooperative, treaty-based arrangement between Canada and the United States, like that of the Seaway regime, is what is now needed for joint management of the Northwest Passage (Flemming, 2008).

As with the Seaway, the institutions governing the Straits of Malacca and Singapore also offer important advantages for participants. The most important of these, according to Kraska, is the implementation of Article 43 of the Law of the Sea. In so doing, the Straits regime adheres to the elements of international law (J. Kraska, personal communication, February 8, 2010). VanderZwaag further notes that the Straits regime operationalizes the standard contained in Article 43 for cooperation between straits and user states in providing efficient transit through straits. (D. VanderZwaag, personal communication, April 2, 2009). In the case of the Straits, burden sharing among all interested parties followed with the implementation of Article 43.

Because of the advantageous elements found in the Straits and Seaway regimes, notably mechanisms for burden sharing, joint authority, and conflict resolution, both Canadian and American interviewees and scholars suggest these models for application
to the Northwest Passage case. Could these features be implemented for the Northwest Passage?

Burden Sharing

The high fiscal costs that Canada must assume in providing services, defending and monitoring, and responding to emergencies in the Northwest Passage was an important point made in the interviews. By using an institutional arrangement similar to that of the Straits regime, burden sharing could be achieved in the Northwest Passage to reduce these costs for Canada. Burden sharing arrangements make all users take responsibility for the maintenance of the resource. UNCLOS recommends burden sharing under Article 43.

How was burden sharing achieved in the Straits of Malacca and Singapore? The Cooperative Mechanism set up three organizations: a funds collector (the Aids to Navigation Fund), a development organization (the Project Coordination Committee), and a discussion group (the Forum for Cooperation). Through these bodies, Straits-related issues are raised by stakeholders; funds are volunteered by coastal and user states; and projects are carried out that benefit the resource, the users, and the coastal states.

Certainly Canada and the United States could implement a similar design if they chose. The costs associated with NORDREG, waterway infrastructure projects, search and rescue activities, enforcement activities, and other needs related to safe, secure, efficient, lowest-impact Northwest Passage transits could be shared by Canada and the United States. Personnel from each state, in equal numbers, could be tasked to carry out
these functions. An institutional design such as this can provide an equitable solution for Northwest Passage governance that is consistent with international law.

Joint Authority

With respect to the Northwest Passage, joint authority means that Canada and the United States would both have rights to the resource. In this way, as in the example of the Saint Lawrence Seaway, the states’ activities would be coordinated and rules would be made jointly. In the Seaway, two management corporations exist, one Canadian (the SLSMC) and one American (the SLSDC). These two corporations jointly administer the conduct of shipping in the Seaway. The IJC serves as an oversight body for the corporations and is composed of equal numbers of Canadian and American commissioners.

Again, Canada and the United States could implement an institutional arrangement for the Northwest Passage where authority over the resource is held jointly. Domestic entities could be devised in both countries which would coordinate administrative activities in the waterway. The IJC, or some correlate, could provide necessary oversight. Indeed, Flemming (2008) hypothesizes a “Northwest Passage Authority,” styled after the IJC, to serve this purpose.

Conflict Resolution

As Mantzavinos (2001) suggests above, the possibility of conflict is ever-present when actors constantly strive for utility increases. Institutions can help in these cases.
Since the two states disagree over the legal status of the Northwest Passage, and since the issue of Northern sovereignty has become highly politicized, evoking strong sentiments in Canada, diffusing emergent conflicts between the two states would be an important function for any institution adopted. In both the Straits and Seaway examples, a mechanism for resolving incipient conflicts exists; in the Straits it is the Forum for Cooperation, and in the Seaway it is the IJC.

To deal with emergent Canadian-American conflicts surrounding the Northwest Passage, the IJC is, again, an obvious choice. It is operational, so a new organization would not have to be constituted. It is also a trusted body that the two states have used for decades. Over these years, the IJC has proven itself to be effective in gathering competing positions and reducing and resolving the conflicts among them. Certainly, however, a different conflict resolution forum or body could be found or created by the two states. In any case, reducing tensions and resolving conflicts are an important function of institutions. The means for achieving these outcomes can be implemented within institutional designs.

Problems and Preferences

Burden sharing, joint authority, and conflict resolution are examples of key benefits that could be had were Canada and the United to implement the Straits or Seaway models for the governance of the Northwest Passage. These advantages notwithstanding, it is in fact quite surprising that both Canadian (Fleming and VanderZwaag) and American (Kraska and Treadwell) commentators would recommend
these models, since both the Straits and the Seaway regimes are fundamentally flawed when applied to the Northwest Passage case.

The problem, of course, with the Straits of Malacca and Singapore model is that it is a regime for governing an international strait. By implementing Article 43 of UNCLOS, it formally collectivizes the resource, enabling all parties to share in the costs and benefits of the Straits. Implementing this model in the present case would therefore create a serious predicament since international straits governance for the Northwest Passage is precisely what Canada does not want. Canada wants internal waters status for the Northwest Passage. It sees itself as the sole authority for governing the resource. For Canada, international straits status for the Northwest Passage means sovereignty, national identity, and the integrity of a treasured natural asset could all be compromised.

Similar problems emerge when implementing the Saint Lawrence Seaway model. The Seaway model of course implements a regime for internal waters. The Seaway is part of both countries; it is internal to both. It is therefore only fitting that both countries have joint control over the resource. But implementing this model in the present case also creates a serious predicament since the internal waters form of governance is precisely what the United States does not want for the Northwest Passage. For the United States, internal waters status for the Northwest Passage means national interests, free movement, and global commerce could be compromised.

This confusion between official preferences and institutional outcomes gives the analyst pause. A question arises as to whether misunderstanding of the Straits and Seaways models, the Northwest Passage case, or both, exist. The confusion appears to
run deep; in a recent book, well-known Canadian Arctic expert and professor of international law Michael Byers (2009) comments on the “. . . importance of demonstrating Canada’s commitment to make the Northwest Passage a safe and secure international shipping route. Without our showing that we are up to that job, there is little reason for anyone to recognize our internal waters claim” (p. 85-86, italics added). These comments do well to illustrate the “sovereignty trap” Canada finds itself in with the Northwest Passage; that is, the more navigational aid, monitoring and enforcement capacity, and related infrastructure Canada applies to the Northwest Passage in an attempt to demonstrate controlled internal waters, the more conducive the Northwest Passage becomes to international transit passage.

It appears that a review of the preferences of Canada and the United States with respect to the Northwest Passage, and the available alternatives for meeting these preferences is warranted. These alternatives include: submission, adjudication, a multilateralism, and unilateralism. In this analysis Canada and the United States are treated as a single problem-solving unit. The two states are viewed this way since, at the present time, a bilateral institution governing Northwest Passage use is in place – the Arctic Cooperation Agreement. To move away from the Arctic Cooperation Agreement would require a joint decision made by both states.

Submission

One alternative to resolving the Northwest Passage governance dispute could be for Canada or the United States to submit to the other’s position. Submission to the
other’s position would mean that either Canada willingly agrees to international straits status for the Northwest Passage or the United States willingly agrees to internal waters status for the Northwest Passage. The interviews presented in Chapter 3 have indicated that both states have deep-seated problems with the other’s position, and both appear to be firmly committed to their own position, as the interviews and statements of Arctic policy indicate. As long as these conditions prevail, submission is an alternative that is preferred by neither state and therefore a highly unlikely outcome.

Could submission ever occur? Submission only seems possible if Canada or the United States simply becomes convinced that the others’ position is in fact the “right” one. It seems that this change in course could only come about through a new understanding of the legal arguments involved. Based on the deeply ingrained legal views held by the two states (Charron, 2005a; McRae, 2007; Griffiths, 2008) however, this path to submission seems very unlikely. Submission would of course be possible if a court of law required it. This alternative is discussed below.

There could be at least one other cause for submission, however – tradeoffs. This possibility will be discussed in the final chapter of this study.

Adjudication

Another alternative available to Canada and the United States in resolving their governance dispute would be to let an outside party do it for them. In a word, this alternative means adjudication. Taking this approach, a party external to the dispute with the authority to allocate rights to the Northwest Passage would make a determination as
to what rights either party holds with respect to the resource. Are vessels from any country allowed use of the resource? Is Canada allowed to apply its own regulations to transiting vessels?

The International Court of Justice (ICJ) is an example of an adjudicative body with the capacity for dispute resolution that could be brought to bear on this issue. Indeed, past ICJ rulings concerning straits passage and maritime resource control are often mentioned in connection with the Northwest Passage. These rulings are the Corfu Channel Case\textsuperscript{54} and the Fisheries Case,\textsuperscript{55} respectively. Legal scholars have noted the precedent-setting potential of these cases as they relate to the Northwest Passage (e.g. Pharand, 1988).\textsuperscript{56}

But while capable adjudicators may exist, this alternative is also not preferable to Canada and the United States. Should the states submit their dispute for adjudication to the ICJ, or any other international arbitrator, one of them will end up losing. Once adjudication by an outside party is called for, the game instantly becomes zero-sum; whichever party is not favored by the decision of the outside adjudicator suffers a total wipeout. For Canada, a total wipeout means that sovereignty, identity, and the integrity of a treasured natural asset are compromised. For the United States, a wipeout means

\textsuperscript{54} The first case decided by the newly-created ICJ, the 1949 ruling determined that Albania was liable for damages to the British Royal Navy caused by underwater mines. Of relevance here is the definition of an international strait issued in the ruling: a waterway joining two high seas areas.
\textsuperscript{55} In 1951 the ICJ ruled against Britain in its suit against Norway concerning high seas fishing rights. The court found that in fact Norway was operating within its own waters under international law. This case legitimated the straight baselines approach for delineating a nation’s territorial waters.
\textsuperscript{56} Moreover, since 1986, the United States does not accept the compulsory jurisdiction of the ICJ on this or any issue. Canada only recently does.
national interests, national security, free movement, and global commerce are compromised.

Though both states are firmly committed to their positions, expert opinion has it that there are legal arguments in support of both views. Therefore neither state seeks third party adjudication on this issue because of the risk of wipeout. As noted in the research of Wang (1981) reviewed in Chapter 1, adjudicative outcomes are relatively evenly distributed between the Canada and the United States – an even chance of losing is not worth the risk of going to court. And as Byers (2009) points out, both states have likely not forgotten the outcomes of arbitration in 1903, which gave Alaska to the United States, and 1984, which gave part of the Georges Bank to Canada, much to the other’s chagrin.

Multilateralism

Yet another alternative for resolving the Northwest Passage governance dispute could be for Canada and the United States to include other parties with interests in the region in helping to determine an acceptable outcome. Other states beside Canada and the United States have interests in the region, including interests in Arctic shipping. Denmark, Norway, and Russia – the other Arctic coastal states – are obvious examples. Indeed all of the member states of the Arctic Council, as well as the permanent participants, observing states, and observing organizations could have potential interests in Northwest Passage outcomes. Tables 4.1 and 4.2 below present the membership of the Arctic Council as well as its permanent participants and observers. These parties may
Table 4.1: Members and Permanent Participants of the Arctic Council

<table>
<thead>
<tr>
<th>Members</th>
<th>Permanent Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>Aleut International Association</td>
</tr>
<tr>
<td>Denmark/Greenland/Faroe Islands</td>
<td>Arctic Athabaskan Council</td>
</tr>
<tr>
<td>Finland</td>
<td>Gwich’in Council International</td>
</tr>
<tr>
<td>Iceland</td>
<td>Inuit Circumpolar Council</td>
</tr>
<tr>
<td>Norway</td>
<td>Russian Association of Indigenous Peoples of the North</td>
</tr>
<tr>
<td>Sweden</td>
<td>Saami Council</td>
</tr>
<tr>
<td>Russian Federation</td>
<td></td>
</tr>
<tr>
<td>United States</td>
<td></td>
</tr>
</tbody>
</table>

Source: Arctic Council, http://www.arctic-council.org

Table 4.2: Observing States and Organizations of the Arctic Council

<table>
<thead>
<tr>
<th>States</th>
<th>International Organizations</th>
<th>Non-Governmental Organizations</th>
</tr>
</thead>
<tbody>
<tr>
<td>France</td>
<td>Standing Committee of Parliamentarians of the Arctic Region</td>
<td>Advisory Committee on Protection of the Seas</td>
</tr>
<tr>
<td>Germany</td>
<td>World Conservation Union</td>
<td>Arctic Circumpolar Gateway</td>
</tr>
<tr>
<td>Netherlands</td>
<td>International Federation of Red Cross/Red Crescent Societies</td>
<td>Association of World Reindeer Herders</td>
</tr>
<tr>
<td>Poland</td>
<td>North Atlantic Marine Mammal Commission</td>
<td>Circumpolar Conservation Union</td>
</tr>
<tr>
<td>Spain</td>
<td>Nordic Council of Ministers</td>
<td>International Arctic Science Committee</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>Nordic Environment Finance Corporation</td>
<td>International Arctic Social Science Association</td>
</tr>
<tr>
<td></td>
<td>United Nations Development Program</td>
<td>International Union for Circumpolar Health</td>
</tr>
<tr>
<td></td>
<td>United Nations Economic Commission for Europe</td>
<td>International Working Group for Indigenous Affairs</td>
</tr>
<tr>
<td></td>
<td>United Nations Environment Program</td>
<td>Northern Forum</td>
</tr>
<tr>
<td></td>
<td></td>
<td>University of the Arctic</td>
</tr>
<tr>
<td></td>
<td></td>
<td>World Wildlife Fund</td>
</tr>
</tbody>
</table>

Source: Arctic Council, http://www.arctic-council.org
wish to be involved in any discussion of Arctic shipping issues that takes place, including discussion of the Northwest Passage.

From the viewpoint of the United States, these parties should be included, since, for one, they are stakeholders in the Arctic region, and secondly, the governance dispute over the Northwest Passage is actually between Canada and the rest of the world. Equity concerns call for an all-inclusive approach, as noted in interviews (M. Treadwell, personal communication, November 9, 2009). By including other parties in Canada and the United States’ resolution process, or by moving that process to a multilateral venue, new and creative suggestions for problem solving could be discovered.

Indeed, these group dynamics were vividly displayed during a meeting of Arctic Ocean foreign ministers in Quebec in late March 2010. The day before the G8 Foreign Ministers meeting in Ottawa, Canadian Foreign Affairs Minister Lawrence Cannon took the opportunity to gather the ministers from the five Arctic coastal states. Their agenda was resource exploitation, environmental protection, and national security in the Arctic. Left out of the meeting, however, were Arctic indigenous groups and the three other circumpolar countries – Iceland, Finland, and Sweden. Indigenous groups voiced their objections to being snubbed, and Iceland also made public its displeasure at being excluded from the meeting. Norway’s Foreign Minister Jonas Store claimed it was “not a good thing” that the excluded parties were discontented. Also critical of the meeting’s exclusivity was the American Secretary of State Hillary Clinton who stated that when Arctic issues are under discussion, all parties with interests in the region should be
included. She expressed the hope that “. . . the Arctic will always showcase our ability to work together, not create new divisions.”

This example, combined with comments made in interviews, and the stated policy of international straits status for the Northwest Passage indicate that multilateral alternatives are preferred by the United States. In the interviews, the need for “unfettered access, like in Antarctica” and a “unified effort for shipping in the Arctic” was communicated (M. Treadwell, personal communication, November 9, 2009). As a superpower with worldwide interests who seeks to maintain its freedom of movement throughout the globe (Young, 1992), the preference of the United States is to ensure that the issue of Arctic access is not “scaled down” so that only a select few make decisions. Rather, the United States prefers that the issue of Arctic access be “. . . all hands on deck,” as Secretary Clinton put it. Including a larger segment of the international community would likely create a larger coalition supporting high seas freedom and the international straits view of the Northwest Passage.

Clearly the broad multilateral alternative is not preferred by Canada. Canada prefers involvement by as few states as possible so that its unique view of the Arctic situation has less chance of being dominated. Critical for Canada, interestingly, is Russia’s inclusion, especially in a small group setting. Russia provides a counterbalance to parties opposed to Canada’s internal waters position on the Northwest Passage since it has its own waterway with the same status. As mentioned earlier, the Northern Sea Route is viewed by the United States and other countries as an international strait providing

57 “Clinton blasts Canada for exclusivity of Arctic talks,” The Vancouver Sun, March 29, 2010
58 Ibid.
access to and from the Arctic Ocean. Russia however is steadfast that the Northern Sea Route is internal Russian waters.

Unilateralism

A unilateral approach however is favored by Canada. Under international law, Canada alone makes the rules that govern its internal waters, and since it sees the Northwest Passage as internal Canadian waters, it finds that it has sovereign authority to implement any measures it chooses for the waterway. Canada has taken and continues to take the steps it deems necessary to create a safe and secure internal Northwest Passage.

The United States of course does not favor unilateralism. It finds the Northwest Passage to be a strait used for international navigation; therefore under international law no one state can unilaterally impose a greater regulatory burden on the waterway than that implemented by the international community. In public and policy statements, the United States consistently proclaims international straits status for the Northwest Passage. The regime of transit passage, it claims, applies to the Northwest Passage, and no state can act unilaterally to impede access to and through an international strait in any way that is inconsistent with international law.

Table 4.3 summarizes the alternative approaches available to Canada and the United States for meeting their preferences for the Northwest Passage.

Based on interviews, policy statements, and other evidence reviewed here, neither state prefers to submit to the others’ position, and neither prefers to adjudicate the dispute. The states disagree on multilateral and unilateral approaches – the United States
prefers a multilateral approach to governance for the Northwest Passage, Canada prefers a unilateral one.

Table 4.3: Alternatives and Preferences

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Preferred by</th>
<th>Canada</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Submit</td>
<td>no</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td>Adjudicate</td>
<td>no</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td>Multilateral</td>
<td>no</td>
<td>yes</td>
<td></td>
</tr>
<tr>
<td>Unilateral</td>
<td>yes</td>
<td>no</td>
<td></td>
</tr>
</tbody>
</table>

How is it possible then for these states to neither submit nor adjudicate, and simultaneously allow unilateral and multilateral action? What institutional alternative could be adopted that would meet all of these preferences?

Doing Nothing

By agreeing to disagree on the legal status of the Northwest Passage and non-prejudicially implementing international laws for marine scientific research in territorial seas, the Arctic Cooperation Agreement – the existing institution – fulfills these preferences. Given the array of economic and political incentives surrounding the Northwest Passage that this study has reviewed; the only alternative for these states, now, and likely into the future, is to do nothing, to not make an institutional change from the Arctic Cooperation Agreement.

Doing nothing is a course of action. It is an alternative that is always available, and at times, may be the one with the lowest cost (Yandle, 2001). In this case, doing
nothing means to maintain the status quo, to continue to agree to disagree over the Northwest Passage, to continue to use the Arctic Cooperation Agreement as the rules of the game.

**Costs of Institutional Change**

Do nothing? In the face of Arctic warming; persistent, even dramatic, ice retreat; and the possibility of regular vessel transits through the Northwest Passage, how can doing nothing be suggested?

Again, theorists of institutional change – Ostrom (1990), Mantzavinos (2001), and Pierson (2000), for example – help provide an answer. Although institutions reduce the costs of collaboration and increase joint benefits, they themselves are costly to create, maintain, and alter. Trust, commitment, and thoughtful design all work toward solving the inherent dilemmas of collective action and encourage institutional supply, but the costs of institutional adoption and change will only be shouldered if net gains of doing so are perceived.

Ostrom (1990) refers to the “substantial” level of “transformation costs” that can be involved in changing from the status quo to a new set of rules. Transformation costs are the resources expended in the process of considering a rule change (p. 198). In this regard, Ostrom says actors are more attentive to the immediate costs they must bear than they are to future benefits they might receive. Therefore, when evaluating the future benefits of alternative rules for resource use, Ostrom claims that predictions of the future
quantity, quality, variability, and value of resource units under the proposed set of rules and the status quo rules are needed (p. 196). She says

It is highly unlikely that (actors) will pay immediate transformation costs to change their rules if the discounted net benefits of a rule change are not expected to be large . . . Benefits and costs have to be discovered and weighted by individuals using human judgment in highly uncertain and complex situations that are made even more complex to the extent that others behave strategically (p. 209-210).

For Mantzavinos (2001) this uncertainty and complexity are key factors regarding institutional change. Although relative price changes can incentivize actors to move to more efficient arrangements, in Mantzavinos’ theory, these changes do not occur so fluidly. Instead of actors who are constantly optimizing, Mantzavinos sees actors constrained by cognitive limits, who seek stability amid the uncertain and complex situations to which Ostrom refers. For Mantzavinos, limited cognition and actors’ desire to not have to constantly “re-decide” complex problems are important reasons for institutional existence and persistence. As such, institutions are adopted to standardize decisions, expectations, and behavior, thereby “unburdening” actors so that they can devote their energies to more productive uses (p. 88).

These ideas suggest that a kind of institutional “lock-in” or “path-dependence” (Pierson, 2000) can emerge. Pierson notes that institutional arrangements elicit adaptations from participants that make their change not only difficult but also unattractive (p. 491). Pierson says that

social adaptation to institutions drastically increases the cost of exit from existing arrangements. Rather than reflecting the benefits of institutionalized exchange, institutional continuity may reflect the rising costs over time of adopting previously available alternatives (p. 492).
Actors may demur when faced with unfamiliar with new rules, and as Simon (1957) has shown through the concept of “satisficing,” once a set of rules is found that meets actors’ present needs well enough, there is little motivation to continue the costly search for a set of rules that might do better.

The ideas of theses theorists can be seen in calculations of institutional change for Northwest Passage governance. In this case, the costs that accompany a change to the institution that guides the use of the resource, is outweighed by the benefits of maintaining the status quo institutional arrangement. In examining the evidence compiled in this study, there is apparent support for the conclusion that institutional change is inhibited rather than encouraged and therefore appears unlikely in the Northwest Passage case. This evidence is reviewed here in a manner consistent with the theoretical ideas just mentioned relating to the costs, benefits, uncertainty, and path dependence involved in institutional change.

Costly Transformations

Transformation costs, the costs of adopting other alternatives, may be too high to alter the status quo in governing the Northwest Passage. These costs outweigh the expected reduction in transactions costs – the benefit – which may accompany an institutional change. From the Canadian point of view, the problem in changing to the Straits of Malacca and Singapore institutional form is that if all have an equal voice in determining the use of the Northwest Passage, methods of management that present the lowest costs to stakeholders, rather than ones to produce the highest benefit for the
resource, will be agreed upon. Even then, shirking will remain a problem. This situation could translate into high costs for Canada in terms of future human and environmental security in the Northwest Passage. With the Straits model, both users and coastal states share burdens, however funds and in-kind contributions are only requested, not required. There is no guarantee that sufficient funds will be available for projects that enhance safety and mitigate impacts.

While multilateral alternatives can provide benefits in terms of additional problem solvers, they can also impose costs when newcomers bring their own interests to the table. Expanding the number of interests involved runs the risk that any particular interest will be drowned out as all parties attempt to guarantee their own needs under any new arrangement that emerges.

Excessive transformation costs are attached to the Saint Lawrence Seaway model, as well. Implementing a Seaway-type institution through a bilateral treaty, as Flemming (2008) recommends, will require the approval of sixty-seven American senators. By contrast, the Arctic Cooperation Agreement, which took over two years to negotiate, required the approval of only the two executives. The likelihood of passing the proposed treaty in a sharply divided Congress with a crowded legislative agenda, when Canada and the United States already have an agreement for use of the Northwest Passage, must be questioned. Furthermore, the Obama administration has proven to be largely unsuccessful with treaty passage (Bellinger, 2010). Though proclaiming support for the ratification of UNCLOS; the Obama administration has been unable to even get this treaty on to the floor of Congress for debate. This situation prevails despite sufficient Congressional
support for its ratification,\textsuperscript{59} and the fact that the country already abides by it as customary law.

Moreover, neither state wants to bear the costs of changing to “joint” authority for the Northwest Passage, of the type that exists in the Seaway model. Logically, joint authority is in place for the Seaway because the Saint Lawrence Seaway forms the border between the two countries. It is internal waters to both. By contrast, Canada wants to be \textit{the only authority} for the Northwest Passage, while the United States claims that \textit{no actor should have authority} over the Northwest Passage. The costs for Canada to “share” authority of the Northwest Passage, either jointly or collectively, could be substantial in a political sense. Indeed, 74\% of Canadians polled in an August 2008 survey reported that Canada should invest heavily on securing sovereignty over its Arctic territory (Angus Reid Strategies, 2008).

\textbf{Costly Transits}

Just as important as the costs associated with adopting these suggested institutional alternatives are the costs associated with the Northwest Passage itself. There are many.

While the long-term forecast is for overall less ice in the Arctic, significantly variable ice conditions have been forecast with respect to shipping in the Canadian Arctic, including in the Northwest Passage (Wilson et al., 2004). These conditions represent hazards for shipping, possibly of a type not widely encountered in the

Northwest Passage to date. This situation gives pause to shippers, as reflected in the comments of Thomas Paterson, vice-president of Fednav, which were presented in Chapter 2. Though Canadian expertise in Arctic shipping is alleged to be superior (R. Huebert, personal communication, February 30, 2009; D. VanderZwaag, personal communication, April 2, 2009), these comments indicate wariness on the part of Canada’s largest shipping company toward the Northwest Passage.

Insurance costs would likely be a critical concern for Northwest Passage shipping. With significant variability in ice hazards, it seems likely that the costs to insure cargoes transiting the Northwest Passage would rise. Moreover, if because of unfavorable conditions, transiting ships are unable to attain optimal speeds in the Northwest Passage; it seems likely that increasingly larger cargoes would need to be transported to make transits economic. It is likely that more cargo would also translate into rising insurance rates for shippers.

Additionally with respect to cargoes, it is unclear just what cargo American-flagged commercial vessels transiting the Northwest Passage might be carrying. Oil shipments from either Prudhoe Bay or deposits off the shores of Alaska would be most likely candidates. Indeed, the voyage of the SS Manhattan in 1969 was conducted to test the feasibility of transporting Alaskan oil eastward through the Northwest Passage. But with a transcontinental pipeline in place, continued lack of clarity with respect to the Canadian-American boundary in the Beaufort Sea, and the current uncertainty over American rules for offshore oil drilling in the wake of the Gulf of Mexico spill, there

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60 Dr. Henry Marcus, “Economic Feasibility of Shipping Containers through the Arctic” (presentation, 91st United States Arctic Research Commission meeting, Cambridge, MA, November 2009)
seems to be little demand to move oil through the Northwest Passage. Indeed, as far as this analyst is aware, since the dramatic loss of Arctic ice in the summer of 2007, there has been no indication whatsoever of any American shipping enterprise with an interest in carrying any cargo through the Northwest Passage from one ocean to another.

More favorable conditions for trans-Arctic shipping may be available with routes other than the Northwest Passage. The Northeast Passage (or Northern Sea Route) is one example. With better ice conditions and the infrastructure conducive for Arctic shipping reportedly in place (R. Hodgson, personal communication, April 2, 2009); this route will soon convey valuable cargoes from eastern Russia to Southeast Asia, as mentioned in Chapter 2. These developments suggest that the Northwest Passage could be outcompeted by alternative Arctic routes.

Overall, the preference of shipping firms is *certainty*. To deliver promised goods in accordance with schedules, shippers need dependable and safe routes. In the Arctic, and any place else that the shipping industry operates, it is intuitive that the preference would be for greater rather than lesser certainty. Based on the review of the evidence acquired in this study, the uncertainty surrounding the Northwest Passage as a transit route, including the cargoes that would most likely be carried through it, appear to make this waterway excessively costly for regular and reliable usage.

What does this situation mean, then? For decision makers in the United States there would likely be little impetus to change from the status quo bilateral institution that governs the Northwest Passage. Following Ostrom, it seems highly unlikely that American decision makers would be willing to assume the costs of transforming the rules
if the benefits of a rule change are not expected to be large. As a transit way between oceans, the future quantity, quality, variability, and value of Northwest Passage transits are as yet uncertain. As such, the Northwest Passage remains relatively uneconomic, a weak competitor in the Arctic shipping arena. No benefits of the required magnitude appear to be on offer to American decision makers to alter or depart from the Arctic Cooperation Agreement.

Benefits Locked-In

And what does this situation mean for Canadian decision makers? Do they also consider Northwest Passage institutional change to be excessively costly? Or are net benefits of changing the Arctic Cooperation Agreement perceived?

From the Canadian perspective, it is useful to consider the benefits that have been “locked-in,” in the Mantzavinos-Pierson sense discussed above. The Northwest Passage is a treasured cultural resource in Canada. As such, it merits stewardship and protection. Today, public sentiment joined with an assertive policy of security and stewardship makes the Northwest Passage an abundant source of political capital for politicians in Canada. This is especially so for Canadian politicians that “stand up to” the United States, seen as recalcitrant if not encroaching on the issue of Arctic sovereignty. Political points are scored with an electorate stirred by the rhetoric of resource nationalism; scenes of Canadian defense forces conducting sovereignty exercises; and steady community building, infrastructure upgrades, and increased environmental protection in “Canada’s Arctic.” Again in the words of Dr. Heather Nicol, these benefits are “unquantifiable” and
“outweigh all costs” (H. Nicol, personal communication, March 18, 2009). A policy of unilateral authority over this prized cultural resource, indeed over all of Canada’s “North,” translates into a sense of security in a part of Canada’s dominion where it has been questioned in the past, and it translates into votes.

There is nothing in the Arctic Cooperation Agreement or in the American position on the Northwest Passage prohibits Canada from continuing to do what it is doing – building its presence, its monitoring capabilities, and its safety and security infrastructure in the Northwest Passage and the Canadian Arctic. American officials have in fact publicly applauded and encouraged these efforts.

Indeed by maintaining the status quo, both states lock-in the benefits afforded under the Arctic Cooperation Agreement. The United States would still be able to send icebreakers engaging in marine scientific research through the Northwest Passage, after seeking Canadian consent. It would still be able to refer to the Northwest Passage as an international strait, reinforcing the straits passage precedent. And it could continue to depend on Canada to build its presence in the region, monitor activity in the waterway, and secure this portion of Arctic North America. Canada could continue to make its argument for its jurisdiction in the Northwest Passage, and would continue to receive nothing worse than a diplomatic protest concerning incremental regulatory expansion.

This discussion shows that, as the current institutional arrangement, the Arctic Cooperation Agreement has produced wider benefits for the two states than they could have achieved independently. How then has it fared in terms of its express purpose – to enable American icebreaker transits? McDorman (2008-2009) comments that the Arctic
Cooperation Agreement has been invoked on multiple occasions since its inception. He notes that each time this institution has been called upon, it has effectively allocated rights to the waterway, since, as he reports; there have never been any problems with its implementation. Apparently, the five United States Coast Guard transits of the Northwest Passage that have been conducted since the agreement took effect – two of the *Polar Star* in 1988 and 1989, one of the *Polar Sea* in 1990, and two of the *Healy* in 2000 and 2003 – successfully requested and received Canadian consent for their voyages and shared their scientific findings with the coastal state per the requirements of the Arctic Cooperation Agreement and UNCLOS.

The Arctic Cooperation Agreement was negotiated by experts from the Department of External Affairs and the Prime Minister’s office in Canada, and the Department of State in the United States (Kirkey, 1995). The creation of a formal intergovernmental agreement to standardize Northwest Passage operations demonstrates these states’ unwillingness to constantly re-decide the issue. An institution was desired and one was obtained, for reasons consistent with the theorizing above. As Francois Mathys, one of the Canadian negotiators explained, the agreement was “... a great success because it (the Northwest Passage) is off the bilateral agenda” (Kirkey, 1995). To use Mantzavinos’ term, the two states had become “unburdened” by this issue.
CHAPTER FIVE

CONCLUSION

Is it possible to identify any configuration of incentives that could motivate institutional change in the Northwest Passage case? Possibly a recalculation of the costs and benefits of the Northwest Passage on the part of either Canada or the United States could lead to a change from the status quo. One form of recalculation is discussed here. An approach forwarded by Byers (2009) and noted in the previous chapter, it is based on the near term payoffs from trade that emerge when the present governance dispute is linked with another. Although it may be difficult to imagine a new cost/benefit ratio emerging that would stimulate institutional change, this prospect cannot be rejected since, as Manzavinos (2001) has stated, “If one takes creative thought and action seriously, the possibility of predicting institutional change is reduced dramatically” (p. 97).

Issue Linkage

Creative thought and action is apparent in Byers’ (2009) suggestion for resolving the Northwest Passage governance dispute by linking it with the problem of the unresolved Canadian-American boundary in the oil rich Beaufort Sea. In the Beaufort Sea, “. . . surveys and exploratory wells have established that the seabed sediments there contain oil and gas comparable with that of Prudhoe Bay, Alaska – the largest oil field in North America . . .” (Byers, 2009, p. 98). In 2007 Imperial Oil and ExxonMobil Canada paid $585 million for exploratory rights in the Beaufort Sea, and in 2008 BP paid $1.2
billion for the same (Byers, 2009). To the northwest of the Alaska/Yukon Territory land border lies a 21,436 km² area of the Beaufort Sea which both Canada and the United States claim. Regarding this area, Gray (1997) says “Both countries have issued permits for petroleum exploration . . . but because of the dispute, they have established a moratorium on exploration” (Gray, 1997, p. 63).

Given this situation, Byers sees “. . . the opportunity for creative trade-offs involving multiple disputes” based on “. . . a trade, whereby one country’s position is accepted in one boundary dispute, in return for the other country’s position being accepted in another dispute” creates (Byers, 2009, p. 103-105). By linking disputed issues together – in this case, the Northwest Passage and the Beaufort Sea – the possibility exists that a package deal, a trade, could be constructed that would resolve both of these issues at once.

Here, this trade would involve either (1) Canada’s acceptance of a boundary line through the Beaufort Sea that gives a larger area of it to the United States, ostensibly granting it a larger portion of the oil reserves contained therein, in exchange for American recognition of the Northwest Passage as Canadian internal waters; or, (2) the United States’ acceptance of a boundary line through the Beaufort Sea that gives a larger area of it to Canada, ostensibly granting it a larger portion of the oil reserves contained therein, in exchange for Canadian recognition of the Northwest Passage as an international strait.

Put simply the trade for Canada is “oil for acquiescence,” and for the United States it is “oil for access.”
In considering the proposed trade, rational actors would likely want at least three pieces of information: (1) the location of new Beaufort Sea boundary lines, (2) the expected values of the resources contained in newly acquired areas, and (3) accurate valuations of a national or international Northwest Passage, for example as provided by this study. With this information in hand, the question for Canada becomes: would Canada be willing to accept more Beaufort Sea oil in exchange for relinquishing its internal waters claim to the Northwest Passage? And for the United States the question would be: would the United States be willing to accept more Beaufort Sea oil in exchange for an internal Canadian Northwest Passage?

Based on the evidence reviewed in this study, it seems highly unlikely that Canada would be willing to trade its internal waters claim for a greater share of Beaufort Sea resources. Significant in this determination is the dearness of the Northwest Passage to Canadian culture and identity, made plain in interviews. What about the United States? Would it be willing to trade acquiescence to Canada’s internal waters claim to the Northwest Passage for a larger share of Beaufort Sea resources, most notably oil?

Presented with this option, American decision makers would almost certainly balk. But they would do so not because they discount the value of greater shares of oil and other resources contained in the Beaufort Sea. Of course, these endowments represent substantial expected value and potentially great wealth. Rather, American decision makers would balk at this option because Canada discounts their values.

The American moratorium on offshore oil drilling implemented in the wake of the Gulf of Mexico disaster surrounds the exploitation of Arctic submarine oil reserves with
high levels of uncertainty. Under these conditions, evaluating the costs and benefits of the resources that would be received under the proposed trade could be quite difficult.

Furthermore, locations of boundaries can impute windfall gains and losses. The positioning of a boundary line that is favorable to American interests in the Beaufort Sea could prove unfavorable to American interests once it reaches the outer continental shelf (see Chapter 1, note 1). American decision makers would likely want to make full accounting of the impacts of all boundary line positioning.

But even more critical for American decision makers than the evaluations just noted would be the costs of the trade to Canada. It must be recalled that the United States receives more oil, gas, electricity, and uranium from Canada than from any other country in the world. With respect to oil, Canada is the world’s fourth-largest exporter, with a 2008 estimate of 2.421 million barrels/day.61 It is the world’s seventh-largest oil producer, with a 2008 estimate of 3.22 million barrels/day, and the world’s tenth-largest consumer, at 2.26 million barrels/day. What is more significant than all of this, however, is that when the tar sands of Alberta and Saskatchewan are taken into account, Canada holds the world’s second-largest proved reserves of oil, with a 2009 estimate of 178.1 billion barrels.62

With energy reserves in such abundant supply, it may not be surprising that Canada would be willing to part with some amount of Beaufort Sea oil in exchange for American submission to its claims of sovereignty in the Northwest Passage.

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62 Ibid
Comparing the opportunity costs of oil for Canada with the opportunity costs of acquiescence for the United States reveals the great disparity in the value of these tradables. This trade would likely be viewed by American decision makers as heavily skewed in Canada’s favor, amounting to an unheralded win for Canadian politicians, but a large loss for the United States. Institutional change based on the payoffs of a trade enabled through issue linkage seems unlikely to occur in this case. For Northwest Passage institutional change to be incentivized through trade, much greater parity between the traded values would be needed. The costs borne and benefits received by each must be more closely equilibrated.

Resources and Institutions

This study has examined the views of the Northwest Passage held by Canada and the United States, their preferences for its governance, and the prospects of changing the rules for its governance. A governance dispute exists between Canada and the United States concerning use of the Northwest Passage. After reviewing environmental and economic changes underway in the Arctic and the Northwest Passage in Chapter 2, expert interviews featured in Chapter 3 revealed the costs and benefits to each state of its preferred means of governance for the waterway. While these interviews do suggest some possible openings for Northwest Passage institutional change, they also recognize forces that hinder it. Most importantly these interviews reaffirm the states’ preferences for Northwest Passage usage over time. These preferences are, for Canada, unilateral control of the waterway, and for the United States, open access under international law.
further preferences surrounding the dispute are shared by these states: refusal to submit to the other’s preferred form of governance, and a disinclination for adjudicating the matter. These preferences have remained stable since 1988 when the Arctic Cooperation Agreement devised a set of joint rules for use of the waterway. This institution remains in place today.

Because Arctic environmental change could make regular Northwest Passage transits more feasible, bilateral rule changes have been called for by many observers. Changes however must be viewed in relation to the existing rules. Suggested institutional alternatives that could be adopted for use with the Northwest Passage were reviewed in Chapter 4. The sharing of costs and control and the mechanisms for dispute resolution offered by these alternatives are attractive, and could be implemented in the Northwest Passage through some design. However, when applied to the present case, these alternatives also bring forward high coordination and political costs that must necessarily be assumed to transform the Arctic Cooperation Agreement to the suggested institutional arrangements. Moreover, high value is placed on the continuation of political benefits derived from the current institutional arrangement. Despite the impact of global warming on the Arctic, the chance of regularized Northwest Passage transits, the calls of experts, and the benefits offered by exemplary institutional models, the weight of the evidence reviewed in this study suggests that Canadian-American institutional change for Northwest Passage governance is unlikely. Overall, the suggested institutional models cannot efficiently address both states’ governance preferences. To avoid the unattractively high costs of change and continue the flow of benefits locked in by the
Arctic Cooperation Agreement, the status quo institutional arrangement will likely be perpetuated. Tables 5.1 and 5.2 below summarize the costs of benefits of the institutional models reviewed above and the status quo institution, the Arctic Cooperation Agreement.

Table 5.1: Benefits and Costs of Institutional Models

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burden sharing</td>
<td>Straits of Malacca model internationalizes the resource, risks management for least cost rather than greatest benefit, funding from users is only requested; cannot meet Canadian preferences</td>
</tr>
<tr>
<td>Parties that benefits from the resource also assume the costs of its maintenance</td>
<td>St. Lawrence Seaway model internalizes the resource, no bilateral authority over an international strait; cannot meet American preferences</td>
</tr>
<tr>
<td>Joint authority</td>
<td></td>
</tr>
<tr>
<td>Parties’ activities are coordinated and rules are made jointly</td>
<td></td>
</tr>
<tr>
<td>Conflict resolution</td>
<td></td>
</tr>
<tr>
<td>Tensions arising from parties striving for utility gains can be reduced</td>
<td></td>
</tr>
<tr>
<td>Efficient allocation of rights</td>
<td></td>
</tr>
<tr>
<td>Gains of trade are realized when parties exchange rights to the resources rather than allocate them by fiat</td>
<td>Trading discounts American value of Northwest Passage and Canadian value of Beaufort Sea resources</td>
</tr>
</tbody>
</table>
Table 5.2: Benefits and Costs of the Arctic Cooperation Agreement

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manages dispute</td>
<td>Constructive ambiguity</td>
</tr>
<tr>
<td>Legal status of the Northwest Passage is not resolved, but agreement allows a way for transits to continue</td>
<td>The opaque language of the agreement can be interpreted to support either national position</td>
</tr>
<tr>
<td>Northern Strategy and political capital continues</td>
<td></td>
</tr>
<tr>
<td>Canada can implement its Arctic policy and Canadian politicians can reap the benefit of opposing the American position</td>
<td></td>
</tr>
<tr>
<td>Straits precedent and special relationship continues</td>
<td></td>
</tr>
<tr>
<td>American transits for consent continue, the United States can continue to refer to the Northwest Passage as an international strait, and Canada secures and maintains the North</td>
<td></td>
</tr>
<tr>
<td>Sovereignty and resource integrity maintained</td>
<td></td>
</tr>
<tr>
<td>Disputed legal status may deflect other countries’ transits, Canadian sovereignty therefore unchallenged, environmental and social impacts to Northwest Passage are mitigated</td>
<td></td>
</tr>
</tbody>
</table>

An institutional change – a change to the rules of the game – must be measured against the existing rules, in this case the Arctic Cooperation Agreement. Cost-sharing, shared control, and mechanisms for dispute resolution offered by the institutional alternatives reviewed here are attractive, and could be implemented in the Northwest Passage through explicit institutional designs. However, these alternatives also bring forward high coordination and political costs that must be assumed in order to transform
the Arctic Cooperation Agreement, the status quo institution. The costs of transforming
the existing institutional arrangement between the two states, and the benefits that
arrangement has locked-in for them appear, from this analysis, to be too great to
overcome. Rational decision-making dictates that participants will require institutions to
continuously provide them with net positive benefits. Therefore, calculations of costs and
benefits will necessarily be performed by all actors considering creating, participating in,
maintaining, and/or changing an institution. When the costs of institutional change
outweigh the benefits, it is likely that the status quo will be maintained. This study
suggests that the Northwest Passage case conforms to this logic.

In drawing this research to a close, it seems appropriate to ask: just what is the
status of this resource, the Northwest Passage? This question is indeed appropriate since,
as the evidence presented here indicates, *resources, and the net positive flows of benefits
from them to change agents, such as national governments, have much to do with the
process of institutional change*. This includes encouraging and inhibiting changes to the
rules that govern the Northwest Passage.

For Canada, the Northwest Passage, as a resource, has clearly become. In Canada,
the Northwest Passage is, more than anything else, a *cultural resource*. All but one
interview made this plain. And because it has become such a valuable cultural resource it
has also become a valuable *political resource*. Seventy-four percent of Canadians support
greater assertion of national sovereignty (Angus Reid Strategies, 2008); for the
government to appear soft on sovereignty would be to ensure “electoral annihilation” (I.
Townsend-Gault, personal communication, March 20, 2009). The Harper government has
been assertive in addressing these public desires. Major public works are planned or underway in Canada’s North, Canadian forces patrol the Arctic land and waters, a state-of-the-art icebreaker is being constructed for the Coast Guard, the AWPPA and NORDREG reach further than they ever have, and so on (see Tables 2.1 and 2.2).

But the situation is totally different in the United States, where there is essentially no public recognition of the “Northwest Passage issue.” It poses no concern to Americans whatsoever. The Northwest Passage is clearly not a political resource in the United States. It is an arcane legal matter, a diplomatic quarrel, but not a major agenda item.

The Northwest Passage is also not an economic resource. At least not for the United States, or for most any other country in the world, except for Canada (Lasserre, 2010).63 The findings of this study provide ample evidence in support of this claim – continuing hazardous conditions; no ports, refuges, or transshipment facilities; inadequate navigational aids and search and rescue capacity, and etc. Crucially, no American shipping firms with interest in transiting the Northwest Passage are apparent. Indeed, Lasserre (2010) has found that almost no shipping firms anywhere appear to be interested in transiting the Northwest Passage. In surveying 125 shipping firms in Asia, Europe, and North America for their Northwest Passage shipping interest, only eleven indicated a possible interest using Arctic routes. According to Lasserre, “These companies are really, really not interested in Arctic routes . . . It’s (the Northwest Passage) never going to be a Panama Canal.”64

64 Ibid.
This provides further explanation as to why the Northwest Passage is not a political resource in the United States. If the Northwest Passage were an economic resource, then the shipping industry in the United States would be lobbying government to make rules that favor its operations in the Northwest Passage. And in exchange for favorable rules, government would expect something in return, for instance campaign contributions, or high level corporate positions when public service careers end. Indeed, the influence over Northwest Passage institutional change wielded by the shipping industry could be quite large in the United States. As of now however, it is unclear that this influence is forthcoming.

The American congress has no committee hearings on the Northwest Passage on its agenda. UNCLOS ratification is not even on its agenda. The United States Coast Guard, with responsibility for protecting American interests along its Arctic shores, has suffered withering budget cuts. Its last available ice breaker is its lightest, the *Healy*, as the *Polar Sea* and *Polar Star* have been taken out of service for 2010.

Do Canada and the United States *want* the Northwest Passage to be a resource, one that facilitates regular commercial transits contributing to global trade? The legal uncertainty caused by their governance dispute likely deflects potential transiting ships. Would shippers transporting large highly insured cargoes through hazardous conditions risk additional costs stemming from legal and political uncertainty? And when there are other alternative Arctic routes that could prove safer and more efficient.

Both states may actually be well served well by maintaining the status quo. It helps to ensure that regular Northwest Passage transits will be unlikely. In this way
Canada need not worry over actual challenges to its claimed sovereignty while the United States maintains its “special relationship” with Canada for access to the Northwest Passage.

Effectively, these states keep the potential resource of the Northwest Passage in the world of neutral stuff. In this way, the Northwest Passage case confirms Zimmerman’s theory. It is mankind, through his institutional arrangements that can allow resources to become or unbecome. Political, social, and economic forces, all three, impact the status of resources. These can encourage neutral stuff to become positive resources, or they can relegate existing resources to a neutral status.

So if these states want the Northwest Passage to become a resource, and potentially deliver them wider benefits, they can make rules that will cause this to come about. They could together provide for safe, secure, efficient transits by rearranging the Arctic Cooperation Agreement in an innovative way. But again to do so requires their recognition of net resource benefits; there is a feedback relationship between resource change and institutional change.

Can this theory apply to other Arctic resources that may be in process of becoming? It already has. Russia and Norway jointly agreed new rules for the exploitation of Barents Sea oil in March 2010. This move ended a decades-long dispute over which state had jurisdiction over this resource. Canada and the United States have indeed begun to move forward in resolving their divergent claims to oil reserves in the Beaufort Sea. In these cases the existence of a positive economic resource was brought to the attention of these governments, who then instigated institutional change. The story of
the creation of the Law of Sea provides further evidence. The governments of the world recognized the bounty of the oceans and created joint rules for its capture. The costly differences that may have existed between those governments were far outweighed by the expected values of ocean resources.

**Other Actors**

On the subject of multiple actors, it would be short-sighted to close this study without turning at least some brief attention to parties besides Canada and the United States that have important interests in the Northwest Passage. Russia, just mentioned, is one; the indigenous residents of the Arctic comprise another.

Russia has its own internal waters/international strait dispute with the United States. Like Canada, Russia sees the Northeast Passage (or Northern Sea Route) that hugs its Arctic coastline as internal waters. The United States however finds the Northeast Passage to be an international strait, connecting the Atlantic and Pacific Oceans. Under these circumstances, what effect might Russia have on Northwest Passage institutional outcomes?

On one hand, it would seem that Russia would be an important supporter of Canada’s internal waters position for the Northwest Passage, since it would benefit from a wider precedent for internal waters. On the other hand however, Russia now finds itself in a powerful position with respect to Arctic shipping. The Northeast Passage, which is 4000 kilometers shorter than the conventional route through the Suez Canal, has seen
recent voyages from the ports of Western Europe and Russia to Siberia and East Asia.\textsuperscript{65,66} Joining Russian vessels, Norway now plans to ship iron ore to China via the waterway.\textsuperscript{67} If Russia wanted to protect this burgeoning monopoly on Arctic commercial transits, it could go silent on the Northwest Passage issue. By not lending support to the Canadian internal waters position, Russia could squelch its main competitor in the Arctic shipping arena.

What of the preferences of indigenous peoples of the Arctic, including the Inuit, Saami, and other groups, with respect to the Northwest Passage? These groups have, possibly the largest stake in the Arctic’s future. Do these groups wish to see shipping take hold through Arctic Canada, with potential economic development opportunities to follow? Or would they prefer that shipping not emerge, thus preserving the unique environment that sustains their way of life? Truly, the more discerning question might be: to the degree that some amount of ship traffic may occur in the future Northwest Passage, what is the role of indigenous people in the decision-making that surrounds it? Is there a role? Or are these decisions the province of national governments, as a representative of their citizens, solely?

At this point, it is clear that indigenous groups want to be at the table when Northwest Passage decisions are being made. And they are – by way of their permanent participant status in the Arctic Council.

Furthermore, a trend toward greater self-determination for indigenous Canadians – through devolution, lands claims agreements, and other efforts – has been underway for some time in Canada. The Northern Strategy specifically mentions “improving and devolving governance,” and takes special note of the well-being of indigenous Arctic communities. These are positive indications for inclusiveness in addressing Arctic resource management.

Whatever the preference of indigenous groups on this issue, it should be taken into account by decision makers in the south. But might Ottawa move cautiously here? Although Canada, like the United States, observes the Universal Declaration of Human Rights, neither country has joined the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). Representing a new bond between indigenous groups and nation-states around the globe, UNDRIP recognizes indigenous cultural rights and identity, as well as rights to language, health, education, and employment. By not acceding to UNDRIP, do the governments of Canada and the United States demonstrate some reservation in perhaps “giving away too much” to native peoples? Does their hesitation provide an altogether different signal in terms of the inclusion of indigenous residents in Arctic resource decision making?

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Other Models

Besides other parties that may influence Northwest Passage outcomes, there are also other institutional models, beyond those already reviewed, that could be influential in Northwest Passage management. These models include ones that manage the resource to promote ecosystem values, to ensure adaptiveness in the face of uncertainty, and to encourage agreement through contingent contracts.

Ecosystem-based Management

Ecosystem-based management is a framework for natural resource management that is being employed with greater frequency, including in marine environments. Ecosystem-based management takes a comprehensive approach to management by addressing conservation, economic activity, user conflicts, and sustainability together (Council on Environmental Quality, 2010). Both the Canada Oceans Act of 1997 and the United States’ National Policy for the Stewardship of the Ocean, Coasts, and Great Lakes (National Oceans Policy) of 2010 utilize ecosystem-based management, and an integrated approach to management is explicit in each. The Oceans Act seeks to integrate marine conservation and economic development activities using principles of sustainability and precaution.\(^{70}\) The National Ocean Policy claims to integrate coastal and marine management using so-called “spatial planning” techniques.\(^{71}\)


At the international level, ecosystem-based management has recently been adopted into the United Nations Environmental Program (UNEP) Regional Seas initiative. Across thirteen seas, 140 countries have adopted the regional approach to controlling pollution. Under this initiative, neighboring countries that share marine resources implement comprehensive and coordinated management actions through a regional convention and associated protocols. Among the objectives of the Regional Seas program, UNEP specifically calls for the ecosystem approach to integrated marine and coastal management. Two other objectives of the program particularly suit the Arctic Ocean: accounting for climate change impacts, and economic valuations of marine resources (United Nations Environment Program, 1982).

The Arctic Environmental Protection Strategy (AEPS), adopted by eight Arctic countries in 1991 (Canada, Denmark, Finland, Iceland, Norway, Sweden, the United States, and the USSR), is an outgrowth of a regional seas-type approach. The strategy concerns conservation, protection, monitoring, assessment, and emergency preparedness in the Arctic zone (Arctic Council, 1991). Environmental protection, pollution prevention, and accounting for the needs of traditional Arctic residents are more specific goals. The creation of the Arctic Council followed closely on the heels of the AEPS. The Arctic Council maintains the AEPS as its working strategy and in 2009 undertook the Arctic Marine Shipping Assessment (AMSA), which studied the effects of future shipping on the environment and native inhabitants of the Arctic (Arctic Council, 2009).

72 http://www.unep.org/regionalseas/about/default.asp
The AEPS is nonbinding on its participants, however, and there is no formal convention and protocol system as found in the UNEP Regional Seas program. This situation notwithstanding, it appears that the Arctic Ocean could be a prime candidate for future inclusion in the Regional Seas program.

Contingent Agreements

When multiple parties are negotiating in the face of an uncertain future, as in the case of the Arctic and the Northwest Passage, contingent agreements (Susskind, 1994) can be useful. As Susskind explains,

Contingent agreements sidestep the need for consensus on what the future holds or which policy responses are likely to be most effective. Instead of settling for a broad framework convention without targets or deadlines, the parties to a . . . negotiation could spell out – at the time a framework is debated – contingent actions that would come into force if certain events occurred or thresholds were passed . . . Not all of these would take effect. As measurements came in, it would be clear which protocols would apply. This would not eliminate the need for continued treaty monitoring and tightening (in fact, it would make monitoring even more important), but it would produce more effective agreement even when there was substantial . . . uncertainty . . . the lowest common denominator approach . . . could be avoided (1994, p. 80-81).

Although the exact trajectory of environmental change in the Arctic Ocean is not certain, there is good scientific information regarding general trends – increasing warmth and less ice, for example. Such an approach requires a comprehensive view to try to determine all contingencies. Scientific information and continuous monitoring would be the key to a contingency agreement. With respect to the Northwest Passage, contingency negotiation might include future planning for military or commercial voyages should the need, and favorable environmental conditions, arise. Negotiating contingent details may be more
easily done now than in the future. In considering and negotiating for various contingencies, advance planning and preparation must be undertaken so that dynamic and uncertain environmental conditions can be better accounted for.

Are various contingencies not already in the back of negotiators’ minds, driving their own propositions and their willingness to accept others? Certainly. And thus we have explained agreements with an incremental, short-term focus in the presence of uncertain and changing conditions. Canada and the United States however need not follow this course. They can negotiate with one another in the manner referred to as “Full, Open, Truthful, Exchange” or FOTE (Raiffa et al., 2002, p. 83). FOTE employs reciprocal and pre-play communication between the parties, collaborative decision making, and the revelation of true preferences. Its goal is the maximization of joint gains. Players using this method are not contestants in a zero-sum game. FOTE is what Canada and the United States do when they negotiate.

Adaptive Management

Understanding future contingencies encountered in the changing Arctic Ocean might involve more than just modeling. It may involve experimentation, i.e. “learning by doing.” This approach to resource management, known more formally as adaptive management, was popularized by the well-known Canadian ecologist C.S. Holling. Adaptive management goes beyond modeling to actual, often large-scale experimentation so that real-world responses of natural resource systems subjected to human intervention
can be detected and can inform managerial decisions (Walters, 1997). In the words of Walters,

. . . adaptive management should begin with a concerted effort to integrate existing interdisciplinary experience and scientific information into dynamic models that attempt to make predictions about the impacts of alternative policies. This modeling step is intended to serve three functions: (1) problem clarification and enhanced communication among scientists, managers, and other stakeholders; (2) policy screening to eliminate options that are most likely incapable of doing much good, because of inadequate scale or type of impact; and (3) identification of key knowledge gaps that make model predictions suspect. Most often, the knowledge gaps involve biophysical processes and relationships that have defied traditional methods of scientific investigation for various reasons, and most often it becomes apparent, in the modeling process, that the quickest, most effective way to fill the gaps would be through focused, large-scale management experiments that directly reveal process impacts at the space-time scales where future management will actually occur (1997, p. 1).

Awareness of the irreversibility of some human interventions in natural systems is necessary. Large-scale, real-world experiments involving human interventions in the Arctic Ocean and the Northwest Passage could involve high costs and high risks. When costs and risks are high, burden sharing is needed. Government, industry, and academia can collaborate in these instances to design useful experiments, hedge against risks, and share costs. The alternative may be a “natural experiment” in the Arctic Ocean, rather than a controlled one to demonstrate system responses and contingencies to decision makers. By way of recent example, had the United States carried out effective oil spill research – possibly through controlled experimentation – as it tasked itself after the Exxon Valdez spill in 1989, the recent natural experiment of oil spill response in the Gulf of Mexico may have been averted.
A “Dynamic Quo”? 

The dynamic and changing Arctic environment, just mentioned, cannot be ignored. This study has suggested that, for now at least, the benefits of the Northwest Passage for Canada and the United States are most efficiently captured by the status quo institutional arrangement. However, the other management models just reviewed have begun to suggest the need for a different framework. Possibly, the needed institutional framework for resource management is one that would be more adaptive to the unique Arctic situation than a static costs and benefits model.

Scientists who study Arctic climate are finding that, over the long term, dynamic physical and environmental change can be expected in the region. Their work has been noted in the earlier chapters of this study. As such, it could be a grave mistake to view the Northwest Passage situation in static terms, continuing to apply a status quo institutional model in the face of long-term change and future uncertainty. Doing so could induce unnecessary risks and foreclose future opportunities.

The Northwest Passage situation might be likened to that of peak oil. The general trend is known – relatively less oil is available going forward. However, the precise trajectory of diminishing oil is not well known, it may shift from point to point within an overall trend. In the Arctic, a general warming trend prevails. It appears that, overall, the regional ice cover will continue to decline. But variation within this trend – the precise trajectory of ice decline – remains unclear. As the exact course of Arctic ice decline plays out into the future, utilities that are wholly different than those that dominate today may be brought forward. Twenty or thirty years from now, politics and precedents may no
longer be the primary concerns of Canada and the United States in the Northwest Passage.

By focusing only on the costs of institutional change, the benefits of such change can be obscured, and in this way institutional innovation can be hampered. Institutional innovation may be what is needed now in this case – dynamic and changing physical conditions in the Arctic, with incumbent long-term uncertainty. A new institution for Northwest Passage management could be designed that accounts for both human and environmental values, that adapts its practices with new information, and that is flexible in dealing with contingent situations as they arise. Indeed, in a hot, flat, and crowded world, change and uncertainty is the true status quo. It is a “dynamic quo” where both risks and opportunities will emerge.

Environmental problems often find groups, individuals, and nation-states in conflicting positions. They often involve conflicts over economics, equity, ethics, and ideology. We might expect that in an increasingly interconnected world of competing claims to resources, disputes over the subjective or objective nature of values – like in the case of the Northwest Passage – may become more prevalent.

So “the Lexus and the olive tree” (Friedman, 2000) may feature prominently in the hot, flat, and crowded future. In competitions such as these, where identity is pitted against ideology, who will bid higher? Who will fight harder? Fortunately, for Canada and the United States, these questions can remain unanswered. As they manage their Arctic differences, Canada and the United States can draw on a rich history of institutional innovation for dispute resolution, and be forward-looking in designing
arrangements to deliver mutual benefits for an ever-improving relationship. Situations of Hobbesian disorder can be brought to resolution through the use of intelligently crafted institutions. In these situations, policy analysis can help that process by examining how organization occurs in the face of value disagreement and uncertain outcomes. From that point, policy analysis can then indicate a way forward. It can suggest not only what may be done, but what should be done.
Appendix A

Transits of the Northwest Passage 1906-2004

<table>
<thead>
<tr>
<th>Year</th>
<th>Vessel</th>
<th>Registry</th>
</tr>
</thead>
<tbody>
<tr>
<td>1906</td>
<td>Gjoa</td>
<td>Norway</td>
</tr>
<tr>
<td>1942</td>
<td>St. Roch</td>
<td>Canada</td>
</tr>
<tr>
<td>1944</td>
<td>St. Roch</td>
<td>Canada</td>
</tr>
<tr>
<td>1954</td>
<td>HMCS Labrador</td>
<td>Canada</td>
</tr>
<tr>
<td>1957</td>
<td>USCGC Storis</td>
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</tr>
<tr>
<td>1957</td>
<td>USCGC Bramble</td>
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</tr>
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<td>1957</td>
<td>USCGC Spar</td>
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<tr>
<td>1967</td>
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<td>1969</td>
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<tr>
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<td>CSS Hudson</td>
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<tr>
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AGREEMENT BETWEEN THE GOVERNMENT OF CANADA AND THE GOVERNMENT OF THE UNITED STATES OF AMERICA ON ARCTIC COOPERATION

1. The Government of Canada and the Government of the United States of America recognize the particular interests and responsibilities of their two countries as neighbouring states in the Arctic.

2. The Government of Canada and the Government of the United States also recognize that it is desirable to cooperate in order to advance their shared interests in Arctic development and security. They affirm that navigation and resource development in the Arctic must not adversely affect the unique environment of the region and the well-being of its inhabitants.

3. In recognition of the close and friendly relations between their two countries, the uniqueness of ice-covered maritime areas, the opportunity to increase their knowledge of the marine environment of the Arctic through research conducted during icebreaker voyages, and their shared interest in safe, effective icebreaker navigation off their Arctic coasts:

   — The Government of the United States and the Government of Canada undertake to facilitate navigation by their icebreakers in their respective Arctic waters and to develop cooperative procedures for this purpose;
— The Government of Canada and the Government of the United States agree to take advantage of their icebreaker navigation to develop and share research information, in accordance with generally accepted principles of international law, in order to advance their understanding of the marine environment of the area;

— The Government of the United States pledges that all navigation by U.S. icebreakers within waters claimed by Canada to be internal will be undertaken with the consent of the Government of Canada.

4. Nothing in this agreement of cooperative endeavour between Arctic neighbours and friends nor any practice thereunder affects the respective positions of the Governments of the United States and of Canada on the Law of the Sea in this or other maritime areas or their respective positions regarding third parties.

5. This Agreement shall enter into force upon signature. It may be terminated at any time by three months' written notice given by one Government to the other.

IN WITNESS WHEREOF, the undersigned, duly authorized to that effect, have signed this Agreement.

DONE in duplicate, at Ottawa, this 11th day of January, 1988, in the English and French languages, each version being equally authentic.

JOE CLARK
For the Government of Canada
Pour le Gouvernement du Canada

GEORGE P. SCHULTZ
For the Government of the United States of America
Pour le Gouvernement des États-Unis d'Amérique
Vol. 1852, 1-31529
Appendix C

Interview Data: Canadian Experts

What are the costs and benefits of the internal waters policy, and the international straits policy, for both Canada and the United States?

Dr. Rob Huebert, University of Calgary

United States’ benefit of international strait:

1. Maintain the precedent for international navigation, so that another country, esp. a hostile, won’t be enabled to push for a special circumstance
2. To counterbalance Russian arctic activity generally

United States’ cost of international strait:

1. Impacts Canadian relations, carries over into politics, and possibly military collaboration (e.g. undersea navigation in Arctic)
2. Security cost, because overflight is included in international straits, Russia or anyone can send bombers over, North American security is threatened, an invitation to kick open a vulnerable “back door”

Canada’s benefit of internal waters:

1. Serves Canadian nationalism and maintains emotional attachment to the Northwest Passage and Arctic Canada
2. To take full advantage of Canadian expertise in a unique environment – ice, weather, darkness, GPS dysfunctional, technically complex, technology has not kept pace with Arctic navigation, all but 3 transits out of 110 have asked for Canadian assent to navigate Northwest Passage because they know they need Canadian assistance, ice conditions diminishing but still seasonally variable, first year ice losing, and multi-year ice losing too, but free floating multi-year ice can damage ships, a risky environment where Canadians have the expertise and experience

Canada’s costs of internal waters:

1. Invest in the resources necessary to enable Northwest Passage traffic – escort, search and rescue, aids to navigation, monitoring, enforcement, etc, will it invest in these?
“How can Canada fully anticipate the actual mix of resources, demand, geopolitics, and weather that will be in understanding what is probably going to be happening and what do we need to do to respond? How do we know what’s right when even the best scientists aren’t in agreement?”

A “Rubik’s Cube” of 1) commitment of Canadian resources, 2) global demand for Arctic transportation, 3) geopolitics, and 4) environmental change
Dr. Heather Nicol, Trent University

Canada’s benefit of internal waters:

1. Serves Canadian nationalism and maintains emotional attachment to the Northwest Passage and Arctic Canada, this is unquantifiable, more a media, political, and public perspective, less of an academic perspective, this benefit outweighs costs, the central position of the Northwest Passage re: Canadian nationalism is what is pitched to the citizenry, an urgent issue

Canada’s benefit of international strait:

1. Canada may not have to assume as many costs to control and defend the Northwest Passage

Sorting things out will use scientifically grounded methods and legal benchmarks, there is a difference though in the policy approach and the legal approach, rule of law becomes important, a test for the law of the sea.
Mr. John Falkingham, Canadian Ice Service

Canada’s costs of internal waters:

1. Canada provides satellite imagery, ice information, ice pilots, and other aids to navigation, with no cost recovery mechanism
2. Canada would encumber the clean up costs if a fuel spill or similar environmental damage occurred in the Northwest Passage
3. Canada would respond to a human emergency, for instance if a cruise ship became disabled in the Northwest Passage

Canada’s benefit of internal waters:

1. Human and environmental security in the Northwest Passage better served through Canada’s “reasonable laws”
2. Canada “wants to be there” to provide services and to protect its national interests

Is Canada investing enough to secure and control the Northwest Passage and the wider Canadian Arctic?

Canada’s posture is “let us make reasonable laws and we’ll let people go through the Northwest Passage.”

Shipping natural gas could be a viable possibility in 20 to 30 years, with improving technology. Shipping may become more attractive than land transport of gas because Arctic lands are changing in a way dominated by greater uncertainty and higher risks. However, the engineering of open water shipping is known; the future favors shipping as the mode of transport for gas.

Because no there is no legal regime and because of international opposition, Canada can’t impose fees on transit to recover costs
Mr. David Jackson, Canadian Coast Guard

United States’ benefit of international strait:

1. Like all sea powers, the United States wants free seas for its navy

Canada’s costs of internal waters:

1. Generally, fulfilling Canadian Coast Guard mandate for nautical services per Canadian government policy
2. Monitoring, response, and enforcement in the Northwest Passage
3. Extending programs to effectively extend shipping season in Northwest Passage and wider Arctic, as ships start sooner and stay later
4. Deal with more cargoes going north as communities grow there
5. Increasing aids to navigation and bandwidth to download ice charts and other ice information
6. Waterway development and dredging activities in concert with private industry
7. $720 million for new icebreaker, and “rebuilding Canadian industry to do it”

Canada’s benefit of internal waters:

1. Generally, fulfilling Canadian Coast Guard mandate for nautical services per Canadian government policy
2. “Rebuilding Canadian industry” to provide new icebreaker

Whether internal or international Northwest Passage, the Canadian Coast Guard still has to do its thing.

New icebreaker “confirms the Northwest Passage” is Canadian

Canadian Coast Guard nightmare is a cruise ship with 3000 passengers rolls over in ice covered waters. How to get them off the boat or out of the water and where to put them? Currently incapable of handling just 500 – 1000 people in this situation.

Re: energy sources . . . a situation of rising world need, less ice, and available resources. If the world needs it, they’ll come get it, ice or not.

Canadian Coast Guard and Ice Services have a great partnership, but both are stretched.
Prof. Ian Townsend-Gault, University of British Columbia

Costs of internal waters versus international straits dispute:

1. Distracts from real issues: resource management and the development of a dedicated regime for a unique area and situation
2. Confused interpretations of international law, undervalues ability of law to be used to knit together equity, economic, and political strands into a treaty or contract

Benefits of internal waters versus international straits dispute:

1. Political and/or economic expediency that serves more narrow interests

Collectively, North America can do better than a “straight baselines v. international straits” argument. We should be able to move forward in a principled way.

For a Canadian government to look soft on Arctic sovereignty would be “electoral annihilation.”
Dr. Dick Hodgson, Dalhousie University

In the way that climate change is happening now, the consequences (“costs”) of shipping in the Canadian Arctic Archipelago are

1. The North Polar would be available sooner than the Northwest Passage/Canadian Arctic Archipelagic routes
2. Hazards may be even greater than before if multi-year ice is mobile
3. In Northwest Passage it is destination based shipping versus transit shipping…destinations are where traffic is going, not ocean to ocean, these destinations are ones of resource development, community resupply, and tourist attractions via cruise ships…for transits it is critical that the ship is the proper ice class, has appropriate power and heating, and the right navigator – in open water and in warm weather these types of ships are a loser, so when getting to and away from the Northwest Passage these ships are uneconomical

Therefore, transit traffic won’t happen until it can operate year round.

There has been no explosion of activity in the Northwest Passage to this point, as has been predicted.

However, even though Northwest Passage shipping remains imminent at this time, it does not mean that the situation should not be addressed.

Key issues/challenges regarding shipping in the Northwest Passage/Canadian Arctic

1. The current economy is dampening resource development in Arctic Canada generally. There is expectation surrounding hydrocarbons in the High Arctic, but no development initiatives right now. Resource development is project oriented, requiring an environmental assessment project, which includes shipping.
2. Community resupply in the North, few people in a large area
3. Cabotage rules constrain foreign built vessels and constrain efficiency improvements. Would Canada not want high grade cargo to travel in Canadian flagged ships? Want to encourage domestic shipping.
4. Arctic cruises offer less reward than Antarctic visits. Moreover, people live in the Arctic…Inuit are not sure where they stand on the Arctic cruise industry. Cruise ships don’t operate under Canadian flag because of costs, making for a longer trip from Greenland or the US to the Arctic. The cruise market is a “qualified success.” There are hazards to Arctic cruise passengers, often these are older persons…search and rescue related to cruise shipping is important. It is difficult
to support large expenditure for rare rescue operations of relatively few people. “Ships of opportunity” are needed to help in this effort.

5. Ballast water for managing cargo loads poses a serious environmental threat to Arctic waters. It can do irrevocable harm and Environmental Impact Statements are needed to address its exchange and treatment.

6. Monitoring and enforcement of shipping activities poses difficulties. Where are ports, refuges, and terminals? What will “ice-capable patrol vessels” do? Ice breakers would be better (US icebreaking is also foundering). Canadian legislation is pending to push the AWPPA out further…the law can be used to refuse entry only when calling at a port, not available for transit traffic which only passes through and doesn’t stop.

7. What about cost recovery for ice-related services? At present this is free assistance. What about competition between routes?

8. Who are the ice navigators to be provided? Where do they come from? How will they be provided and can the supply be ensured?

9. The International Maritime Organization’s Polar Code and the International Association of Classification Societies are working on Arctic ship standards. These standards need to be translated into domestic legislation.

A governance and policy framework that allows for the above should be the imperative.

The possibility exists for “regulatory collaboration.”

What commercial benefits are there for Canada for a ship to go through the Northwest Passage? The debate should focus on “bang for the buck” in the Northwest Passage, not the emotional elements.
Dr. David VanderZwaag, Dalhousie University

Benefits of shipping through the Northwest Passage (if open)

1. Saving on distance, time, and fuel
2. A benefit to regional and global trade

Potential costs to Canada of shipping through the Northwest Passage

1. A risky environment, even if “open”, for hazardous cargoes
2. Canada would bear the costs of a spill (for example)
3. Canada would bear the costs of contingency planning for a spill or other environmental damage, if the country “goes it alone”
4. Indigenous losses from Arctic pollution, very real, hard to measure
5. Search and rescue is a Canadian endeavor (at present, but there could be a move to a regional or bilateral S/R regime)

Benefit of internal waters

1. Keeping control of Northwest Passage “in house” is best both for Canada and for the international community, because of expertise and know how issues (see Huebert)

Benefit of international strait

1. For US Navy operations (not for commercial operations)
2. Reduced costs for Canada

Canada may want a cooperative, sharing approach when faced with the costs of “going it alone”, so the potential benefit of cooperating is one of cost reduction.

Domestic industries are impacted when Canada “goes it alone.”

The Malacca Strait model was noted as a cooperative solution, applicable in the Northwest Passage situation.
Appendix D

Interview Data: American Experts

What are the costs and benefits of the internal waters policy, and the international straits policy, for both Canada and the United States?

Mr. Mead Treadwell, United States Arctic Research Commission

US Benefit of International Strait

1. No permission required

2. In terms of NE Passage (NSR) for example, don’t want to cede to the political control of country that could shut down access – Commission views shipping in terms of the whole basin not just NWP

US Cost of Internal Waters

1. Restricts access, especially for scientific research, need unfettered access like in Antarctica

2. Precedent setting – US will go to bat for straits passage anywhere in the world

The US views all of Arctic shipping, not just the NWP - the Arctic Ocean as a “shipping area”. A unified effort is needed therefore for shipping in Arctic. AMSA studied this. Want to avoid cheaters so that traffic doesn’t proceed through waters of a coastal state that is less concerned about environmental integrity

At least 3 routes (potentially 4) – NWP, NSR, Bering Strait…Polar route. Master can select various routes or change en route per conditions. Further, the US sees the three current routes all as straits.

USARC wants nation to do its homework on Arctic issues. Be prepared. The US and Canada need to know what they need to know about the Arctic. AMSA related to this homework. USARC drafted AMSA implementation act attached to USCG authorization bill. Enables funds for joint investment, negotiate with Canada, Russia, Arctic, and seafaring nations for Arctic shipping regime. Need investment too (i.e. icebreaker) not just rules.
St. Lawrence Seaway as a model. Cross US-Can border 23 times if coming into Chicago, but only 1 phone number, 1 standards book, 1 toll location, 1 inspection point. Need to get to this for Arctic shipping.

Cooperative work with Canada ongoing – search and rescue, icebreaker design, together going to IMO for changes to Polar Code to mandatory international guidelines on Arctic shipping, article 234 had US backing cognizant of NWP issue so any argument for conditional NWP transit short of “no” has already been dealt with

US will go to bat for straits passage anywhere in the world. It is only 1 of 100 countries with the same view, so not a unilateral position

Military implications of moving assets back and forth is majorly important, a quietly played trump card for both sides

Plenty of ways to get around this problem…respect Canada’s position even if disagree…US sees great opportunities in the Arctic to work together on economic and environmental fronts

The Arctic is important to the US. Ottawa and DC ignore the importance of the issues to residents of the region. We collectively lose when we don’t agree on Arctic shipping issues or on broader Arctic problems. A brand new ocean - maybe up to a quarter of the American coastline in Arctic area
The Honorable David Wilkins, former American Ambassador to Canada

US Cost of Internal Waters

1. Weakens the US’s position worldwide regarding the ability to navigate straits

2. Canada could block entry to NWP

NWP can be managed as an international strait

Canada can and should increase its presence in the North and has, the US applauds and encourages these efforts, decisive Canadian presence is necessary and warranted

To the US, sovereignty is not the issue; it is instead a question of whether a state can close down an international strait. The sovereignty position is a popular one in Canadian politics.

Ambassador Celluci’s position, that Canadian control of the NWP would take the burden off the US, is not that simple…there are other countries involved…the issue is really between Canada and the rest of the world

Relationships matter. The Reagan-Mulroney relationship helped the ACA. This issue will be resolved because of mutual trust, a history of trust, and the relationship between Canada and the US. Relationships are the “deal closer.” When ice conditions are such that a critical mass is reached, Canada and the US will “figure it out.”

It is to our interest to resolve differences.

The US’s position is unlikely to change. How to go forward? Quietly restate our position and continue to applaud efforts of Canada in building its Arctic presence.
Dr. Christopher Kirkey, State University of New York – Plattsburgh

Canada’s Benefit of Internal Waters

1. Continued assertion of political sovereignty, not just over waters but also land, this is “mythical” in nature for Canada

2. Not much commercial activity (presumably this means the internal waters argument can still be safely made)

3. AWPPA and ACA were created to apply to Canada’s Arctic “backyard”, Canada’s efforts in those past positions do not dilute its legal position re: the NWP but instead help it and forward Canada as a “steward”; if the legal position re: the NWP were to be diluted by these acts, then the internal waters approach would become a cost to Canada

4. The context is the Valdez spill in Alaska and, starting in the late 1960s, exploring options for getting Prudhoe oil to market, which included the possibility of sending tankers through the NWP. So beyond sovereignty, just regulating oil tanker traffic in the NWP is, under today’s conditions (of a changing climate and diminishing ice) a genuine concern for Canada

Canada’s Cost of Internal Waters

1. Position risks being diluted if domestic legislation is untenable

US’ Benefit of International Strait

1. Maintains access for maritime, military, and commercial activities

US’ Cost of Internal Waters

1. If DC recognized the Canadian position it would circumscribe regime of unimpeded transit, other straits passage could be jeopardized, US doesn’t want other states to follow Canada’s example

Canada has played its hand (mostly) through domestic legislation. Much has changed now, though. In 1987, no real issue of resource development as a backdrop of the ACA. Today, public and private sector interest in the NWP and Arctic per climate change.
It is in DC’s and Ottawa’s interest to look ahead. A short lifespan for the ACA as it turns out; the states now need to reengage. The political nature of the situation means if they still can’t agree on whose is whose, then an ACA style model is needed (presumably Kirkey means one that looks past sovereignty in an integrative way).

The Canadian government may not be interested in a broader Arctic shipping approach or regime (as the US might press for) because Canada would not want the US to line up other players that oppose the Canadian view of the NWP.
The United States Navy’s position on the Northwest Passage is congruent with the Navy policy statement entitled “National Security and Homeland Security Interests in the Arctic,” which states:

“Freedom of the seas is a top national priority. The Northwest Passage is a strait used for international navigation; the regime of transit passage applies to passage through those straits. Preserving the rights and duties relating to navigation and overflight in the Arctic region supports our ability to exercise these rights throughout the world, including through strategic straits.”
Canadian benefit of internal waters:

1. Regulating access to the Northwest Passage through the internal waters policy offers psychological benefits to Canada in the form of a sense of safety and security over an area which historically the state has been unable to convincingly impose its control
2. Canadian politicians score points with the electorate by standing pat on a position that is opposed to the position taken by the United States

American benefit of international strait:

1. An economic benefit, in that if the United States made an exception in the Canadian case it would mean that many other countries that make excessive internal waters claims would also want to make their own rules. The global economy depends on freedom of navigation
2. A military benefit, in that to maintain security and protect national interests, the United States’ military must have the ability to be able to move about the world’s oceans as it needs

Until now, Canada has had the benefit of free security provided by the United States. The opposing American position is seen by Canada as a move contra to the maintenance of its security. Canada has painted itself into a corner politically by framing the Northwest Passage issue as one of contested sovereignty. This has become an extremely popular position among the electorate. The combined message of politicians, the media, and academia in Canada will make it very difficult for the government to convince citizens of any other position. For Canada’s government to change course is extremely risky politically.

Canada’s position is legally insensible. It has also changed its position over the years. The Arctic Cooperation Agreement applies only to US icebreakers doing scientific research. Any other type of ship does not need to request Canadian permission to transit the Northwest Passage. Canada does not see the agreement this way however. It believes that the US is required to ask for permission for all voyages. This difference in interpretation is a problem of “constructive ambiguity” in international law. It is possible that in the future during the summer months the fastest way to get military assets between Iraq and North Korea is through the Northwest Passage. Canada cares greatly about this issue and the United States doesn’t. The US could accept a deal with Canada that would not ultimately be in its interest, because there is no domestic constituency, because it
could be easily done, and because it could look good politically. Canada wants to keep this a bilateral issue which it is not; it is Canada vs. the world. It wants to leverage US power against other foreign seafaring countries, such as China, so it wants to get the US on board and to take its side. The Saint Lawrence Seaway model is a great deal for Canada because those are internal waters, and Canada gets free resources provided by the US. Such a model offers no benefit to the US. The Malacca model is better for the US and for everyone because it implements Article 43 of UNCLOS. No country has the right to close off the high seas; therefore the US could not do a bilateral deal with Canada that would have such an effect even if it wanted to.
REFERENCES


171


