Historical Configurations Of Knowledge Among The Iñupiat In Arctic Alaska

Joshua Andrew Van Drei
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By Joshua A. Van Drei

Entitled HISTORICAL CONFIGURATIONS OF KNOWLEDGE AMONG THE IñUPIAT IN ARCTIC ALASKA

For the degree of Master of Science

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HISTORICAL CONFIGURATIONS OF KNOWLEDGE
AMONG THE İNUPIAT IN ARCTIC ALASKA

A Thesis
Submitted to the Faculty
of
Purdue University
by
Joshua A. Van Drei

In Partial Fulfillment of the
Requirements for the Degree
of
Master of Science

May 2014
Purdue University
West Lafayette, Indiana
This thesis is dedicated to my wife Amanda and my children, Dominic and Savannah. This process was arguably harder for you than it was for me. I am thankful for your strength during this time and know that at times, you had to get along without me, traveling back and forth to Ohio to give me time to work.

I would also like to recognize my mother who always recognized and fostered my potential even when it was difficult for her to do so. Sacrifices were made, I know and acknowledge that. Thank you. Last but not least, I would like to recognize my father. If not for your guidance to go to the military to fix myself, followed by your insistence that I read *One River*, I do not know where I would be today. I will join you on the river when that time comes.
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# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Item</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIST OF TABLES</td>
<td>vii</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>viii</td>
</tr>
<tr>
<td>ABSTRACT</td>
<td>ix</td>
</tr>
<tr>
<td>CHAPTER 1. Introduction</td>
<td>1</td>
</tr>
<tr>
<td>1.1 Overview of the Iñupiat</td>
<td>2</td>
</tr>
<tr>
<td>1.2 Research Questions and Avenues of Exploration</td>
<td>6</td>
</tr>
<tr>
<td>CHAPTER 2. Methodology</td>
<td>12</td>
</tr>
<tr>
<td>2.1 Participant Observation</td>
<td>13</td>
</tr>
<tr>
<td>2.2 Historical Anthropology</td>
<td>15</td>
</tr>
<tr>
<td>2.3 In the Archive</td>
<td>18</td>
</tr>
<tr>
<td>2.4 Oral History</td>
<td>23</td>
</tr>
<tr>
<td>2.5 Ethnohistory</td>
<td>26</td>
</tr>
<tr>
<td>CHAPTER 3. What is Knowledge?</td>
<td>29</td>
</tr>
<tr>
<td>3.1 Introduction</td>
<td>29</td>
</tr>
<tr>
<td>3.2 Empiricism</td>
<td>30</td>
</tr>
<tr>
<td>3.3 Knowledge as Constructed</td>
<td>32</td>
</tr>
<tr>
<td>3.3.1 Situated Knowledge</td>
<td>34</td>
</tr>
<tr>
<td>3.3.2 Local Knowledge</td>
<td>35</td>
</tr>
<tr>
<td>3.4 Conclusion</td>
<td>37</td>
</tr>
<tr>
<td>CHAPTER 4. How is Knowledge Constructed?</td>
<td>39</td>
</tr>
<tr>
<td>4.1 Introduction</td>
<td>39</td>
</tr>
<tr>
<td>4.2 Transmission and Construction</td>
<td>40</td>
</tr>
<tr>
<td>4.2.1 Bourdieu’s Concept of <em>habitus</em></td>
<td>41</td>
</tr>
</tbody>
</table>
### Page Count

**4.3** Non-Anthropological Transmission Theories ........................................... 42
**4.4** Anthropological Cultural Transmission Theory ...................................... 44
  **4.4.1** Cavalli-Sforza et al. and Types of Transmission .......................... 48
  **4.4.2** Formal and Informal Education .................................................. 49
**4.5** An Iñupiat Point of View ........................................................................ 51
**4.6** Critiques ................................................................................................. 52
**4.7** Synthesis ................................................................................................. 54

**CHAPTER 5.** Knowledge in the Early Contact Period .................................. 57
  **5.1** Cook and Other Early Expeditions ..................................................... 59
  **5.2** John Simpson and the HMS *Plover* .................................................. 60
  **5.3** The Traditional Iñupiat Educational System ...................................... 63
  **5.4** Conclusion ............................................................................................ 67

**CHAPTER 6.** Knowledge in the Late Contact Period .................................. 68
  **6.1** Murdoch and Ray: The First International Polar Year Expedition ....... 69
  **6.2** Schooling and Missionization .............................................................. 70
  **6.3** Religious Conversion ........................................................................... 75
  **6.4** Conclusion ............................................................................................ 78

**CHAPTER 7.** Knowledge in the Mid-1900s ............................................... 81
  **7.1** Changes in Subsistence ........................................................................ 81
  **7.2** Loss of the qargi .................................................................................. 85
  **7.3** Educational Policy ................................................................................. 87
  **7.4** Education and the Iñupiat .................................................................... 92
  **7.5** Science and Traditional Knowledge at NARL .................................... 95
  **7.6** Conclusion ............................................................................................ 99

**CHAPTER 8.** Knowledge in the Contemporary Period .................................. 101
  **8.1** Prudhoe Bay and Land Claims .............................................................. 102
  **8.2** The Alaska Native Claims Settlement Act ......................................... 106
  **8.3** Education After ANCSA ..................................................................... 108
    **8.3.1** The NSBSD and Ilisaġvik College ............................................... 110
8.3.2 Views on Education and Knowledge ........................................... 113
8.4 North Slope Borough Wildlife ...................................................... 119
  8.4.1 The IWC and AEWC in 1977-8 ................................................. 121
8.5 STEM Camp and Climate Change .................................................. 123
8.6 Conclusion ................................................................................. 126

CHAPTER 9. Discussion and Conclusion ............................................ 128
  9.1 Findings ..................................................................................... 131
  9.2 Future Directions ....................................................................... 134

BIBLIOGRAPHY ............................................................................... 138

APPENDIX ..................................................................................... 180
<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 6.1 Comparison Between Traits of Christianity and Historical Iñupiat Religious Practices</td>
<td>76</td>
</tr>
</tbody>
</table>
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 1.1</td>
<td>Map of Indigenous Regions in Alaska (Barnhardt 2001)</td>
<td>3</td>
</tr>
<tr>
<td>Figure 4.1</td>
<td>Types of Cultural Transmission (From Cavailli-Sforza et al. 1982)</td>
<td>47</td>
</tr>
<tr>
<td>Figure 4.2</td>
<td>Synthesis of Dreyfus and Dreyfus (1986) and Ryle (1984)</td>
<td>54</td>
</tr>
<tr>
<td>Figure 7.1</td>
<td>Map of the Arctic in the Western Hemisphere showing the Distant Early Warning (DEW) Line</td>
<td>96</td>
</tr>
<tr>
<td>Figure 8.1</td>
<td>Major Provisions of ANCSA (from Arnold 1978)</td>
<td>107</td>
</tr>
<tr>
<td>Figure 8.2</td>
<td>The Iñupiat Learning Framework</td>
<td>111</td>
</tr>
</tbody>
</table>
ABSTRACT

Van Drei, Joshua A. M.S., Purdue University, May 2014. Historical Configurations of Knowledge Among the Iñupiat in Arctic Alaska. Major Professor: Laura Zanotti.

This thesis explores how the Iñupiat of the North Slope of Alaska have responded to cultural pressures, specifically those arising from the introduction of missions and schools, and characterized by an increase in permanent outsider settlement, and how they have internalized these pressures into their knowledge system. By examining political, economic, and social factors, this thesis provides a more holistic picture of how and why Iñupiat knowledge has changed through time, beginning with the contact period in the early to mid-1800’s until the present day. I find existing models of knowledge transmission cannot account for the ways in which Iñupiat knowledge is passed down. What I show is how traditional knowledge becomes incorporated into the individual by the twin processes of knowledge transmission and knowledge construction, two processes that are often considered apart, but that I forward should always be considered together. This conversation sets the stage for the later discussion on how knowledge has changed in the almost 200 year post-contact Iñupiat world. The post-contact history of the Iñupiat is characterized by the incorporation of new technologies and changing the ways in which knowledge is constructed and transmitted both
intergenerationally and within the same generation. I point to two major events, the introduction of schools and missions, in what I term the "Late Contact Period" that truly defined Iñupiat culture change and brought them into mainstream American culture. I argue that these two events, coupled with a rise in ‘Yankee’ whaling, provided communities with limited options and produced drastic changes in Iñupiat culture.
CHAPTER 1. INTRODUCTION

The Iñupiat of the North Slope of Alaska have endured many cultural changes and reacted to external and internal pressures since the early to mid-1800s. This thesis explores how an Iñupiat community, specifically in Barrow, Alaska, has responded to outside pressures and how the responses to these pressures have been internalized into their knowledge system.¹ Scholars that investigate traditional ecological knowledge, or TEK, agree that knowledge systems are inherently dynamic (Agrawal 2009; Antweiler 1998; Berkes 2009; Gomez-Baggethun and Reyes-Garcia 2013; Noongwook et al. 2009; Turner et al. 2000). These scholars, among others, show how a variety of impacts produce profound effects upon existing knowledge systems, changing them in unpredictable ways. The Iñupiat knowledge system has undoubtedly changed, but many methods of learning and living have been maintained. This thesis explores these cultural changes and the effects they have caused on the Iñupiat knowledge system in Barrow. To illustrate these changes, I blend oral history, ethnography, early explorer’s reports, and other sources, to reconstruct a history of knowing. These sources are accompanied by observations and

¹ While I use the term "knowledge system", I understand that knowledge is inherently dynamic and heterogeneous and argue for a more individualized process later in the thesis.
conversations that I had on the North Slope in the summer of 2013 while I was interning for the Barrow Arctic Science Consortium (BASC). I served as an outreach and logistics coordinator as a liaison between the plethora of scientists that work in Barrow and the community.

This internship, coupled with archival research, allowed me to develop a theoretical framework that was both relevant to the community and explores ways in which communities and their knowledge systems can be resilient despite often violent colonial and postcolonial assimilationist policies. I argue that combining social, political, economic, and environmental considerations provides a more holistic picture of the changing configurations of Iñupiat knowledge transmission and manifestation than has been investigated by previous scholarship. Furthermore, even through policies aimed at assimilation and destruction of a culture, the Iñupiat knowledge system has remained resilient to efforts by outside forces to transform it without Iñupiat input.

1.1 Overview of the Iñupiat

The Iñupiat are an Alaska Native people whose territory consists of the Northern-most portion of Alaska along with the Northwestern portion. Their territories are part of the North Slope Borough and the Northwest Arctic Borough of Alaska (a borough being similar to a county or parish). They are an Inuit-speaking group who speak one of two Iñupiatun dialects. The Iñupiat are traditionally hunter-gatherers. Like most Arctic peoples, they continue to rely
upon subsistence hunting in addition to a variety of engagements with the local and global market. The game that they utilize mainly comes from the sea. These animals include bowhead whales, beluga whales in some places, walrus, ringed and bearded seals, polar bears, and a variety of fish (Alaska Department of Fish and Game Report for Barrow). On land, they may hunt caribou, wolverine, fox, and the occasional wolf. Iñupiat communities in inland areas may hunt vastly more land animals than coastal groups. Coastal Iñupiat ways of life revolve around the sea.

Figure 1.1 Map of Indigenous Regions in Alaska (Barnhardt 2001)

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Festivals such as *Nalukataq*, the blanket toss, an Inuit-styled potlatch, are crucial to their communality as a people and continue to inform social relations. The main unit of organization for hunting groups is the whaling crew, often composed of close-kin, but may be composed of non-kin members. Constructing crews this way serves to enforce non-kin group solidarity. These whaling crews may or may not stick together year-round to participate with each other in a variety of other subsistence ventures. This resonates with what I encountered during my internship as well. Several crew members pointed out that hunting together year-round makes them more efficient as a group and since crew are commonly composed of kin and non-kin members alike, it also serves to strengthen the extra-familial kin network.

In terms of geography, Barrow is the northernmost community in the United States. It is an extensively multicultural village. According to the 2010 US Census, 61.2% of individuals identified as Alaskan Native or American Indian, 16.9% identified as White, 9.1% as Asian, 8.7% as Two or more races, 3.1% as Hispanic or Latino, 2.4% as Pacific Islander or Native Hawaiian, 1.0% as Black or African-American, and 0.8% as Some other race (NOAA Community Profile: Barrow, AK).

Since contact with Europeans in 1826, many changes have taken place in Iñupiat territory. Most of the Iñupiat people adopted Christianity and continue to be a highly religious people, although not homogeneously so, with many different churches and faiths represented in Barrow. Beginning in the 1880’s, Iñupiat children were forced to go to Euro-American-style schools and were shipped off
to boarding schools in other places in Alaska and the Lower 48. Later, the Alaska Native Claims Settlement Act (ANCSA) of 1971 gave all Alaska Natives land, money, and a corporation to manage as compensation for lost land taken by the State of Alaska and the US Government. With the passage of ANCSA, Alaska Native peoples were able to regain self-determination in terms of education, self-governance, and payment of past wrongs done to Alaska Native communities.

However, support for and analysis of ANCSA is not uniform across Alaska or recent scholarship on the subject, which points to divergent perspectives on the act (Anders 1986; Arnold 1978; Leask 1984; McNabb 1992; Thomas 1986). Recently, major changes impacting the Iñupiat have included the changing climate and the ever-increasing encroachment of oil companies, the State of Alaska, and the US Government, in terms of economic and political postcolonial management strategies. Alaska Natives continue to assert their self-determination and continue to battle the state and federal governments’ attempts to undermine this self-determination with legal precedent and posturing.

The focus of this thesis is on education and learning as they apply to local knowledge systems. In this analysis, I also found linguistic analysis useful to further decipher differences between Iñupiat and Euro-American views on education. For example, Leona Okakok, an Iñupiat scholar, points out that the Latin *educere*, meaning “to lead or to develop” (the etymological ancestor to English’s “educate”) is similar to the Iñupiaq word *iñuguq*, meaning to “cause to become a person” (Okakok 1989: 413). *iñuguq* refers to the process of helping a child to become a person. These are different pedagogical tools, different
methods of teaching and learning, which are commonly documented to be just as
difficult to learn for an Iñupiat child as English itself (Blackman 1989; Hensley
2009; Okakok 1989). These linguistic differences and their following actions
structure the ways in which people think about education and schooling. Drawing
upon these differences and their associated linkages, I examine the following
research questions.

1.2 Research Questions and Avenues of Exploration

A few major questions drive this research. How has Iñupiat knowledge
changed through time? How has Iñupiat conceptualization of what is considered
to be knowledge changed over time? How has knowledge transmission and
construction changed over time? What are the internal and external factors that
have driven these changes? How have these changes been realized in the
educational systems in Barrow?

The main purpose of this thesis is to analyze how the systems of
knowledge of the Iñupiat peoples have changed from just prior to contact until
today. To my knowledge, no other intensive survey has been completed of
Iñupiat knowledge transmission and construction, but bits and pieces have been
investigated by any number of scholars (Kassam 2000; Kassam 2009; Burch
2013).

One of the essential components of a knowledge system is its
epistemology or how one actually knows something. Epistemology includes the
factors that are considered for making information actionable, meaning what is likely to be believed and what is likely to be disregarded. This differs from its ontology, which is what actually exists, how these things exist, and how things can be categorized. An example of an ontology that is different from mainstream Euro-American culture is what Salmon (2000) refers to as “kincentric” ecology and what Cruikshank (2005) elaborates on in *Do Glaciers Listen?* Cruikshank’s book concerns Tlingit ontological realities; mainly that glaciers listen and Tlingit relationships with glaciers. Cruikshank shows that, to the Tlingit, glaciers are not just ice. Glaciers get angry, happy, and sad. They have emotions and their feelings can be hurt. They are not simple inanimate objects. More importantly, they are part of the Tlingit kin network. Glaciers get kin names and are expected to perform their kin roles in those kin groups. The Iñupiat have similar views about whales and other animals in their ecosystem.

Many North American indigenous groups classify objects Western knowledge claims to be inanimate, into categories of animate objects. In kincentric ecology, kin terms are extended out to non-human entities. Understanding kincentric ecologies and differing ontologies has become a growing thread of anthropological investigation. Much work is currently being done within anthropology and in closely related disciplines concerning the epistemological and ontological realms. Recent ethnographies such as Kohn’s 2013 *How Forests Think*, Blaser’s 2010 *Storytelling Globalization*, and Pedersen’s 2011 *Not Quite Shamans* investigate multiple epistemologies and ontologies. I hope this study will continue this avenue of investigation by
contributing a historical slant on how knowledge systems change overtime to incorporate new knowledges that are deemed to be effective. These two terms, epistemology and ontology, are the two main components of any system of knowing. Acculturation serves to produce changes in how these processes function and creates crises of ontology and epistemology. I focus on knowledge shifts and changes over time in Barrow, Alaska, and how these ontological and epistemological realities interact there.

To illustrate the ideas surrounding knowledge transmission and construction, I begin the thesis with a discussion of what knowledge actually entails. Inquiries surrounding knowledge transmission have been ongoing in the social sciences as well as the humanities for decades and in some cases (such as the arguments made by natural philosophers) have been ongoing for centuries. First, I will discuss knowledge and how different Euro-American scholars have viewed knowledge transmission and construction in the past four hundred years. I will start with the beginnings of science and quickly move forward to current scholarship. This conversation centers around the essential nature of knowledge, what exists, how can it be known, and how are things grouped that in fact do exist. This short section is essential for understanding the driving argument behind my argument, which is that knowledge and knowledge production must be viewed as inherently local, situated processes.

The second section of the thesis focuses on knowledge transmission and construction. I will examine the processes of how knowledge gets transmitted both intergenerationally (vertically) and within a generation (horizontally). Using
both historical and contemporary viewpoints, I synthesize a more holistic view of how knowledge is constructed and transmitted. This synthesis is a more recent discussion only really taking foot in anthropology since the 1960s and 1970s after the publication of Whiting's *Six Cultures* in 1963. Significant about *Six Cultures*, is that this is the first instance of a true compendium of studies of enculturation. The main focus of *Six Cultures* was to incorporate a plethora of enculturation methodologies. In effect, the study began a solid sub-field of cultural anthropology: anthropology and education.

Investigations into transmission of culture took place before this, specifically Margaret Mead’s *Coming of Age in Samoa*, Ruth Benedict’s *Continuities and Discontinuities in Cultural Conditioning* and Melford Spiro’s *Children of the Kibbutz*, but the vast majority of works published in anthropology directly concerning cultural transmission theory occur after 1970 (Mead 1928; Benedict 1938; Spiro 1958). I point to this period, the beginnings of the Council on Anthropology and Education section of the American Anthropological Association in 1968 and the founding of the journal *Anthropology and Education Quarterly* in 1970, as beginning this discussion on knowledge transmission and construction.

Lastly, the third section will outline the historical constructions and configurations of knowledge as expressed and experienced by the Iñupiat. As I am not Iñupiat, my reconstruction of this history is from an etic point of view. I surmise that this reconstruction would look different if the person writing it was Iñupiat. This section will be broken down into four major historical periods. These
periods are self-created, etic constructs I find useful for investigating changes in Iñupiat knowledge transmission and construction.

The first section I call the Early Contact Period. This period lasts from the 1820’s until just prior to the advent of Yankee Whaling in the 1870’s and is characterized by an increase in outsider presence, but not a permanent presence, in Iñupiat lands. The second period is the Late Contact Period. It goes from the beginning of Yankee Whaling in the 1880’s until the collapse of baleen prices in 1907. This period is characterized by the beginning of a permanent outsider presence in Iñupiat territory, the introduction of formal schooling, and missionization. The third period is the Early to Mid-1900s. This period goes from the aftermath of the collapse of baleen prices in 1907 until the beginnings of land claims in the mid-1960s. The fourth and final period is the Contemporary Period which begins with land claims and ends with my internship in the summer of 2013. This period is characterized by an increase in self-determination, an increase in living conditions, and further incorporation into the capitalist world system.

Throughout this thesis I will refer to the concepts of ‘resilience’, ‘adaptive capacity’, and the ‘social-ecological system.’ Holling (1973: 14) refers to resilience of ecological systems as “the measure of the persistence of systems and of their ability to absorb change and disturbance and still maintain the same relationships”. This idea has been used to measure changes in social-ecological systems. Social-ecological systems analysis is a framework that can be defined as the exploration of the hierarchical interactions between biophysical and social
phenomena, whose flow is regulated by certain factors and is perpetually dynamic and complex (Redman et al. 2004: 163). Inherent in this definition is the idea of continuous adaptation (ibid.). Forces within the system are constantly fighting against one another. Resilience is the ability of the social-ecological system to undergo change but to “still retain essentially the same function, structure, identity, and feedbacks” (Walker and Holling 2004: 2). Adaptive Capacity is the ability of actors within the system to increase resilience and act against vulnerability (ibid: 3).³ This framework is relevant to this research because it is this aspect of the Iñupiat knowledge system that I investigate. The Iñupiat knowledge system changes, but ultimately, it stays the same. It is important to investigate both the reasons for change and the reasons for resilience.

³ Vulnerability is how susceptible the social-ecological system is to collapse.
CHAPTER 2. METHODOLOGY

I utilized a series of qualitative methods to investigate Iñupiat knowledge change and resilience. These methods included interning with a local organization, which was complemented by an extensive literature review that drew upon sources from within and without anthropology to paint a post-contact picture of the Iñupiat knowledge system and the changes that have resulted from internal and external influences upon that knowledge system.

I began this research project in the role of an intern for the Barrow Arctic Science Consortium (BASC) in Barrow, Alaska, from late May until late July 2013. My role within BASC was as a logistics and outreach coordinator for science and scientists often facilitating logistics for community science talks that BASC holds almost every weekend. In addition to this role, I was also responsible for several outreach projects including exposing children from the community to science and scientists at the new Barrow Arctic Research Center (BARC). I was also employed for a short period of time by a scientific outfit needing help setting up their research station on tundra.

Other major activities included joining in on science and technology camps aimed at Iñupiat children from across the North Slope. One of these was conducted by Ilisaġvik College and aimed at blending science and traditional
knowledge in order to provide a more holistic picture for the students, while still teaching them the methods and theories of science. The other camp was conducted by the United States Fish and Wildlife Service (USFWS) with a local representative on the project. This project was designed to make the children aware of the various projects that the USFWS was currently undertaking in Barrow, while providing them with a local Iñupiat point of view at the same time.

In addition to my roles with BASC and a variety of scientists, I was able to attend an important meeting of the Alaska Arctic Policy Commission in Barrow on June 12th and June 13th. This was strictly in the role of an observer, but allowed me to observe Arctic policy-making in process. Designed to get local input on Alaska’s new Arctic Policy, the meeting was headed by a variety of politicians from Alaska and orchestrated so that people from Barrow, political figures and not, were able to voice their concerns and opinions on the future of Alaska’s Arctic. Below I discuss this observer role in detail and outline ways in which I was both able to participate and to observe in the context of my internship with BASC.

2.1 Participant Observation

H. Russell Bernard describes participant observation one of the keystone methods for anthropologists. As he succinctly (and realistically) puts it, participant observation is “stalking culture in the wild” (Bernard 2011: 258). More generally, he describes it as plunging into a culture, but being able to step back from that immersion in order to think about what has been seen (ibid.). Bernard describes
three major roles that a participant observer can take in the field: the complete participant, the participant observer, and the complete observer (ibid: 260). I shifted between all of these roles throughout my internship. Participating when necessary, observing when participation was not feasible, required, or allowed. But most of the time, I would classify my role as an active participant observer as outlined by Johnson et al. (2006).

Johnson et al. (2006) outline specific situations where active participant observation may be more effective than passive participant observation. They provide a framework for active participant observation and contend that an active role, such as a job or internship in the community the fieldworker intends to study, may provide opportunities that would otherwise be unavailable to the ethnographer. Agar (1980) recognizes that access in certain communities may be severely limited upon entry, in the role of a stranger. Active participant-observation can severely enhance one’s ability to negotiate this outsider status (Johnson et al. 2006). An active role may also open up new dialogues, new avenues of conversation, that would otherwise be unavailable to the researcher (Johnson et al. 2006: 117).

Johnson et al. (2006) summarize a number of factors that can influence one’s choice on what type of participant observer that they would like to be (ibid: 117-118). Some of these factors include freedom of movement, access to information, types of information, and a possible need for specialized information,
among many others. The authors conclude that it is important to analyze each situation specifically for what type of participant-observation would work best (Johnson et al. 2006).

As an intern for BASC, I had access to data sources and streams of knowledge that would have otherwise been unavailable to me. The community is rightfully wary of outsiders, seeing as how most researchers are up there for short periods of time and just to gain what knowledge they need and leave. This makes many individuals in Barrow unlikely to open up to an outsider without extensive rapport building. Being an intern for BASC, a well-recognized organization within the community, facilitated this rapport building at a much faster pace than would have been available to me otherwise. Johnson et al. (2006: 114) outline how much more speedily rapport can be gained in an active participant observation status as well.

2.2 Historical Anthropology

I supplemented my internship duties and participant observation with methods derived from historical anthropology. The basis of my methodology lies in what anthropologists term ‘historical anthropology’ or sometimes

4 Johnson et al 2006 also include charts of these qualities needed by participant observers and how they relate to a variety of active participant observation jobs based on each of the authors' personal experiences in research on pages 121, 122, 126, and 130.
‘anthropological history’.\(^5\) Axel describes historical anthropology as “a form of knowledge production that is based on an exchange of methods and theories between history and anthropology” (Axel 2002: vii). Axel argues that historical anthropology lies outside of mainstream anthropological practice. Axel also outlines the utility of naming this sub-discipline of cultural anthropology and why it should be distinct. He says that historical anthropology occupies a new niche in anthropology because it centers the effects of colonialism and historically colonized peoples by providing a discursive space for subaltern voices to speak (Axel 2002: 2-3, using terminology from Spivak 1988). Furthermore, the aim of historical anthropology is not to center a people in a certain place or a certain time, but to study the “production of a people, the production of a space and time” (Axel 2002: 3). Historical anthropology serves to problematize previous understandings of relations between groups and to bring peripheral relationships to the fore in order to constitute a new epistemological foundation for knowledge production (Axel 2002: 2).

Examples of historical anthropology from anthropology’s history include Benedict’s (1946) study of the Japanese and Lévi-Strauss’ 1966 *The Savage Mind*. In addition, volumes written about the anthropological study of history come from Mead (1953) and Evans-Pritchard (1962), both showing how history’s tools should be used by the ethnographer in order to better understand cultural presents by reconstructing cultural pasts (Axel 2002: 6-7). However, Axel goes to

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\(^5\) See also Kalb et al (1996) for the distinction and conflation of historical anthropology and anthropological history.
great lengths to make the reader aware of the role of ethnography and the archives (both as tools of history and anthropology) in the colonization process. Much of this collection of essays is devoted to explaining just how this was done and how the usage of ethnography and archival sources has affected the production of knowledge within anthropology and how it has impacted communities themselves.

Bernard Cohn and Ranajit Guha (1987) are central to historical anthropology and Axel describes their contributions throughout the introduction. Axel shows how Cohn and Guha trace the beginnings of history and anthropology to colonial processes and how the methods surrounding ethnography and the archive are inextricably linked to their colonial beginnings (Axel 2002: 9). To Cohn and Guha, history and anthropology were themselves narratives of power and domination concerned with the production of knowledge of the Other. Cohn and Guha eventually developed a methodology that blended anthropology and history in order to reconstruct a cultural history that informed the present (Axel 2002: 9).

This is also how I view the colonial and postcolonial production of knowledge, however, much has changed concerning Iñupiat knowledge since the 1970’s and the realization of the return of self-determination and political power for the Iñupiat.
One of the major avenues of investigation for a historical anthropologist is the archives and archival sources. The first contribution to *From the Margins*, Nicholas Dirks describes how history, anthropology, and the archives were used by imperialist states to colonize, oppress, and subjugate peoples around the world (Dirks 2002). Dirks (2002) uses the Foucauldian method of ‘archaeology’ to describe the paradigmatic shift that happened in the forms of knowledge during this time. Foucault (1972) stated that systems of thought and discourse would exist for long periods of time and then they would suddenly change (similar to a Kuhnian paradigm shift). Foucault calls his method ‘archaeology’ because he is uncovering layers of civilization.

Probably the most important point Dirks makes is that the state maintains the archive. Dirks (2002: 60-61) points out that the archive served not only to ensure the continued colony status of the indentured nations, but to “proclaim the colonial subject as lacking both in political capabilities and in historical understanding”. By guaranteeing the above two preconditions, the imperialist nations could then take their eyes off of the political and judicial structures of the

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6 See also Brettell (1998) for an extensive reconstruction of history concerning historical methodologies being used in anthropological contexts. She outlines a multitude of important studies using ethnohistorical methodologies covering the previous 100-plus years of anthropological practice. She also outlines current views on using methods traditionally used by anthropologists and how they can and should be used by anthropologists. In addition, she outlines how many anthropological methods, with slightly different analytical slants, can be used for historical analysis of cultural attributes.
colony and shift them towards controlling the social and cultural spheres, which were much easier to control. James Scott writes (1998: 82-3):

…builders of the modern nation-state do not merely describe, observe, and map; they strive to shape a people and landscape that will fit their techniques of observation . . . there are virtually no other facts for the state than those that are contained in documents.

These are important points for understanding the function of archives and archival sources, both of which are central to the content and methodology of this thesis because I extensively utilized archival sources to construct the historical periods which I use to explain the changes to the Iñupiat knowledge system.

In addition to postmodern critiques of the function of the archive, there are also critiques levied at historical sources and the institutions that collect them. First, archives are used to ascribe social kinds; to classify people and things into easily recognizable culturally specific categories (Stoler 2010). To understand the archive, Stoler says, one “needs to understand the institutions that it served” (Stoler 2010: 25). Stoler sees archives as “condensed sites of epistemological and political anxiety” and places in which “power relations were inscribed” (Stoler 2010: 20). In effect, archives are interesting visions into the past, a way to historically situate the culture of the archivers and a lens into the subject position of the archon (the actual person doing the archiving).

Galloway (2006: 8) follows Stoler’s line of thought and contends that historical representation is always of its time. Texts and events cannot be separated from the conditions in which they were produced. They are contextual and are produced in such a way that to not understand the culture that produced
them is to not understand the documents themselves. History is written by people, not omniscient beings and this must be understood in order to analyze history. Without contextualization, knowledge cannot be gained. Eric Ketelaar (2001: 36) also contends that archives are social constructs and forwards that they are only used in culturally prescribed manners. Ketelaar asserts that the techniques of recordkeeping, the practice of archiving, changes over time and is culturally specific (ibid.).

Furthermore, Galloway shows how history itself is a social construction. Who is allowed to produce texts, who is allowed to distribute them, and how this system is manipulated, all play into how history has been produced in the past and the present (Galloway 2006: 10). Stoler also sees this constructivist aspect of archives. She writes that archives are commonly seen as legitimizers of fact and critiques this notion by forwarding that archives can only be seen as not biased, but repositories of collected knowledges that represent the ideas of a time (Stoler 2010: 22). Stoler also views the archive as a space for competing knowledges (Stoler 2010: 24). Knowledges may clash in the archive and it is up to the archon to decide what to make of these clashes and determine how to measure credibility and reliability. However, as Dirks (2002) points out, the state has the power to control what is archived and what is not and in effect, produce history.

Critiques have also been raised about the archivization process and documents themselves (Derrida 1995; Ketelaar 2001; Galloway 2006). Derrida argues for a critical position on the archivization process (Derrida 1995). He
writes that it is important to analyze the processes of archivization, how something becomes archived, if one is to truly understand the document itself (ibid: 10). Ketelaar (2001: 133) asks the question: how does an archon decide what is worth archiving and what is not? The archivization process itself is a co-producer of knowledge, possibly just as significant as the event recorded in the documents itself (ibid: 17). Furthermore, by picking and choosing which documents are to be archived, the archon has considerable power over history and how that history is viewed. The essential fact of human memory, forgetfulness, is exactly why the archive is so appealing, but at the same time, why it is so dangerous (ibid: 19). Archival desire is driven by memory loss, by forgetting, but that essential nature of humanity is also why we must be wary of the archive, for it obfuscates truth and instead offers a biased view of history. If we understand this, the archive is useful, if we do not, it is perhaps the most dangerous object ever created.

Perhaps Derrida’s foremost argument in Archive Fever is about how the archive hides its own history. The archive never leaves any archives of its own. In fact, it destroys them before they can even be created. This is what Derrida refers to as ‘archive fever’, the propensity of the archive, the archons, and archival sources themselves to hide or prevent the gaze from reaching them (Derrida 1995: 13-15). ‘Archive fever’ actually holds dual meanings to Derrida, the other meaning being the fetish that literate cultures have with cultural memory, the inherent fetishization for the archive itself as a repository for that cultural memory (ibid.). In obscuring the true nature, the archive, the archons,
and the archival documents appear to remain unharmed by the passage of time, essentially locked away from change. In this way, documents are seen as pristine truths about the times in which they represent.\(^7\)

Galloway (2006) critiques historical documents themselves and shows that documents have their own lives. They are translated, transcribed, retranslated, and retranscribed. This is after they are written in the first place. If these are oral histories, then the documents are often second-hand, cross-cultural looks at something that the recorder does not often truly understand. Standards for practice also change (Galloway 2006: 2). This will often affect how a document is viewed just a few years later.

Texts concerning the colonization process in the Americas, such as the ones consulted during the research for this thesis, are situated within an ideology of discovery (Witgen 2012: 16-19). Furthermore, Witgen (ibid.) problematizes the framing of representation is problem and the predispositions to represent the native peoples as savages. Authors also often embellished their own role in events in order to curry favor with their readers, who were often colonial governments (ibid.). Galloway uses reader-response theory to outline the lives of historical documents. Reader-response theory critically analyzes texts to construct an understanding of the texts that places the author and the reader in a relationship, coproducing the text together (Galloway 2006: 6). This idea is akin to what linguists call a ‘joint construction of interpretation’. A joint construction of

\(^7\) See also Geiger et al. 2010 for an extensive postmodern critique of archives and archival sources.
interpretation recognizes both the teller and the listener as co-producers of the speech event (Duranti 1997: 314-315). Taken together, it is seen that speech events, like texts, are socially coproduced by the authors/tellers and the readers/listeners. Galloway uses reader-response theory to construct a narrative of texts as dynamic, much like how speech events change based on the author and listeners. This point about the joint construction of interpretation is important because I also utilize oral histories in this thesis.

Using multiple levels of analysis, Galloway shows how oral traditions are just as adept at representing history as so-called ‘positivist’ histories (Galloway 2002: 20-27). History, either orally recorded or written, should not be viewed as positivist in the first place. History can only be viewed through a contextual lens, a lens focused on the culture that produced the texts. By utilizing a contextual method, one can ascertain variances in culture and events. These variances and their repercussions are in return, valuable to the historical analysis of culture (Galloway 2006: 26).

2.4 Oral History

The use of oral histories in this thesis is significant because oral history serves to make visible, or to record the voices of, people who would otherwise not have been heard (Blackman 1989; Bodfish Jr. 1991; Brewster 2001; Gallagher 1974; Hensley 2009). These people would have effectively been “hidden from history” (Perks and Thomson 1998: ix). Okihiro shows oral history
as both a method and a theory, a loose theory that seeks to show a different way of conceptualizing history than mainstream historical methods (Okihiro 1981: 27). Oral history also allows hidden voices to speak and to contribute their own knowledge, emotions, and experiences, to the historical record (Perks and Thomson 1998: ix).

Oral history requires a human relationship with the source, something that the archive obscures. This is important because the knowledge produced by oral histories is different than knowledge produced by observation or mining the archives alone. Stories were told in a specific time and place, from a person to another person, in a relationship that was likely complicated to understand from an outsider’s perspective (Schneider 2002: 7). Okihiro (1981) points out that historical documents (both oral and written) cannot speak for themselves. Documents were written by a human with biases and they are read by a human with biases (Okihiro 1981: 32). Therefore the document is coproduced at the outset and upon reading. Scholars also overlook the cultural circumstances for misunderstandings in the recording, transcribing, and analysis of oral histories (ibid: 8). These cultural considerations are important in cross-cultural oral histories as “this influences how we understand what they say, how they see themselves as members of a particular group, and how they recognize and define others” (ibid.).

These characteristics are critical to using oral histories as evidence in scholarship and crucial to understanding acculturative processes through oral history. But combining oral histories with participant observation and archival
research, adds a different perspective to the narrative than using a single method alone. In my case, using oral histories provides this thesis with an indigenous voice, an emic perspective that I can analyze and utilize to provide a local, albeit partial, perspective on historical events. This is a voice that many times, I would not have been able to access, as many of the people in the oral histories that I have used are now deceased and would be unwilling to talk to me without extensive rapport building. Second, oral history recording is time-consuming. Considering my other duties as an intern, I did not have the time required to record an oral history. I was only in Barrow for two summer months and it is unlikely that, in that short time period, I would have been able to interview a respected elder in the community.

Oral history is an effective method for giving voice to speakers that have been silenced and it is an effective method for attaining a history of the dispossessed and colonized (Okihiro 1981: 42). By creating histories of the oppressed, historians can make visible histories that were previously concealed (ibid: 43). Especially in places where ethnic minorities or indigenous peoples do not maintain their own archive, oral history can serve to begin a minority or indigenous archive so that the people can reappropriate their own history.

Traditionally, the histories are written and maintained by the colonizers, and thus what gets appropriated to be archived, is determined by members of the colonizing culture (Okihiro 1981: 45). This subjectivity creates violence in the
archive, a violence against indigenous and minority groups. This violence results in a distortion of history, a preference of colonizing voices and a silent minority voice that is often unheard throughout history (Okihiro 1981: 45). I attempted to mitigate these silencing effects by consulting oral histories and applying delicate methods in this thesis.

2.5 Ethnohistory

To make my argument, I also rely heavily on ethnohistorical methods. Ethnohistory is problematic to define but two major articles, Carmack (1972) and Sturtevant (1966) have outlined historical uses and areas of interest. Alfred L. Kroeber emphasized the historical method in anthropology following World War II (Carmack 1972: 228). Kroeber (1963) provides arguments for the major similarities between anthropology and history and why a borrowing of methods would prove useful. Carmack also points to Leslie White advocating historical methods as well (Carmack 1972: 228). White’s (1945) article clearly states that using a historical method, while less scientific than a functional method, will provide a unique view of cultural forms in time and space.

Carmack forwards ethnohistory as the middle ground between anthropology and history (Carmack 1972: 230). Carmack defines ethnohistory as “a special set of techniques and methods for studying culture through the use of written and oral traditions” and states that it is complementary to ethnography for

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8 See also Derrida (1995) for how the archive is a violent structure.
the purposes of anthropologists (Carmack 1972: 232). In opposition to a single
definition, Sturtevant (1966: 6) contends that ethnohistory is self-defining and
highly variable. Sturtevant shows, using ethnohistorical examples, how the
definition varies by the scholar using it and the situation that the scholar is
studying. Bruce Trigger (1982: 10) holds that one of the major goals for
ethnohistorians is to document and explain specific cultural changes that have
happened as a result of colonial acculturative processes in individual cultures
(Trigger 1982: 10). This has been specifically realized in anthropology’s
investigations into Native American cultures. Trigger also forwards the idea that
both historians and anthropologists can benefit from using ethnohistorical
methods. For anthropologists specifically, a historical viewpoint may situate
certain phenomena in such a way that reveals previously hidden explanations for
current cultural practices (Trigger 1982: 17). Regardless of how each scholar
defines it, it is agreed upon that by combining methods and sources, ethnohistory
provides a more holistic picture than simply using historical or ethnographic
methods exclusively.

Especially important is Sturtevant’s (1966) treatment of the qualities of
ethnohistory. First, he describes three dimensions for characterizing ethnohistory.
These are (1) a concentration on the past or present; (2) the use of written or
non-written documents; and (3) a diachronic or synchronic emphasis (Sturtevant
1966: 6-7). Following this Sturtevant outlines the two principal interests of
ethnohistory. These are historical ethnography and the historiography of non-
literate cultures (not always non-literate, but the study of non-literate cultures is
more likely). Finally, Sturtevant outlines the major methods and avenues of investigation for ethnohistorians. These include written documents, folk history, oral tradition, and ethnography (Sturtevant 1966).

To investigate Iñupiat knowledge change throughout the historical period, I utilized the cornerstone method of anthropology: participant observation. In addition to this, to get to the past, to look at 19th Century Iñupiat culture, I needed to utilize archival sources produced mainly by British and American explorers that had extensive racial and cultural biases that tainted their views. Using methods from historical anthropology and ethnohistory served fruitful for this research because they allowed me to delve deeply into historical sources and mine them for potentially useful data. Utilizing multiple methods allowed me to gain insight into the Iñupiat from multiple avenues, eventually bolstering my research and making it more solid. When I utilize these historical sources, I am using them as biased stand-ins for knowledge that might have been lost, but at the same time realizing that these explorer’s and their journals are flawed because of these biases.
CHAPTER 3. WHAT IS KNOWLEDGE?

3.1 Introduction

What is knowledge? This question does not have one simple answer. A definition of knowledge does not exist, nor is there a single definition for how one comes to know something, the criteria that individuals use for telling knowledge from useless information (Valdueso 2011). Many knowledges exist as well as a plethora of ways to view and accumulate that knowledge (Nadasdy 2003: 9-11).

In this thesis, I take the stance from Deleuze and Guattari (1987) that knowledge is a ‘multiplicity’. Multiplicity is the idea that ideas exist on nonhierarchical lines. Multiple lines exist, instead of points. Lines are fluid and what Deleuze and Guattari term “rhizomatic” or non-hierarchical (Deleuze and Guattari 1987, also see Strathausen 2010).

Like a rhizome itself, there are multiple entry and exit points in the narrative. Discourses may enter the narrative and contribute without being subjugated or dominated by the current dominant discourse. To complete any narrative, multiple viewpoints are needed and all need to be given equal weight. Different people know the same thing in different ways and including different points of
view in the knowledge production process. Watson and Huntington’s (2008) ethnography of epistemic spaces produces a richer knowledge specifically because it is inclusive of different knowledge systems and does not exclude knowledge that is not ‘scientific.’ These are the central arguments of this thesis. I argue that participatory methods would serve to create a more holistic scholarship than simply using knowledge gained from methodological and epistemological homogeneity. The argument between empiricism and constructivism has been fought throughout the history of science and this is now where I turn in order to demonstrate how this is important for addressing resilience and change in knowledge systems.

3.2 Empiricism

The argument in philosophy of science lies between empiricism and constructivism. Empiricism, beginning with Francis Bacon and Galileo, is the idea that worldly truths can be discovered through sensory experience. Bacon thought that our minds were not _tabula rasa_, that to attain objective truths, that humans had to rid themselves of ‘idols’ (Klein 2012). These idols are historical trappings of information that cloud our objective lens. Galileo, a contemporary of Bacon, sought to extricate science from religious dogma. Akin to Bacon’s idols, Galileo thought that God tainted objective view. To attain objective scientific truths, one had to do so without God (Galileo 2001: 399).
Shapin and Schaffer (1985) discuss the beginnings of science and how and why knowledge gets produced in the ways it does today. Simon and Schaffer’s *Leviathan and the Air-Pump* is both a semi-historical account of the fight between Robert Boyle and Thomas Hobbes to outline evidentiary rules for science, and a critique of the requirements of scientific knowledge. Boyle’s idea is, in essence, to create abstract settings where context supposedly does not matter: laboratories. Hobbes on the other hand, sees context as important, as providing a backbone of meaning for the observation of natural phenomena. Hobbes sees power and people as important. In the end they both win, but not at the same game. Hobbes creates social contracts for power and Boyle creates methods for science (Latour 1990). Boyle’s methods are not dissimilar from the methods used in laboratories today (Latour 1990: 158-9).

One other major thread in empiricism is positivism. The basis of positivism is that any knowledge can be verified and falsified. The idea of falsifiability is a major cornerstone of modern scientific discourse. The ability to test and retest is paramount. Either the results replicated or they are not. Falsification is a major criticism from science about other knowledge forms. Methods then are very important to positivists because for knowledge to be considered knowledge, it has to be tested or at least the supposition has to be able to be disproven. However, just because a hypothesis cannot be falsified does not mean it is not knowledge gained, for example, experientially. These ideas will be explored in the context of indigenous knowledge systems. These systems do not live up to the standards of positivism, and thus are easily dismissed (Nadasdy 2003).
Methodologies in indigenous knowledge systems are irreproducible and therefore do not pass the positivist criteria of scientific knowledge. In opposition to this view, in this thesis I show that these knowledges should be valued and considered alongside other knowledges.

### 3.3 Knowledge as Constructed

Knowledge can also be viewed as a construction based in context. I cited Deleuze and Guattari’s (1987) ideas above, in that multiple knowledge assemblages can exist rhizomatically (non-hierarchically) within the same narrative. When knowledges interact, each of the interacting knowledges could be said to be a social construction, an alternate mirror into reality. Philosopher Richard Rorty’s *Philosophy and the Mirror of Nature* forwarded this epistemology (Rorty 1979). Rorty rejects that our minds mirror our sensory experiences (empiricism). His ideas attack objectivism and representative arguments in epistemology. His main claim is that phenomena can be explained and knowledge created only by “reference to what society lets us say” (Rorty 1979: 174).

Instead of viewing knowledge as explaining physical phenomena, Rorty argues that we need to “see knowledge as a matter of conversation and of social practice, rather than an attempt to mirror nature” (Rorty 1979: 171). Rorty’s issue with epistemology’s claim to representational truths created from the senses is that they suggest some sort of omniscient point of view. The main point to take
from Rorty is that our knowledge is limited by cultural and historical predispositions (a subconscious) that are not under our control. Individuals cannot act independently of these predispositions and cannot verify our beliefs except with the system that created them, which is subjective, not objective.

Methods of attaining knowledge are not paramount to knowledge construction (Feyerabend 1975). These views were forwarded by Paul Feyerabend (1975) in his Against Method. Seminal for its radicalness and the stir it caused within the social sciences, Feyerabend is infamously thought to call for complete epistemological anarchism, an “anything goes” type of methodology where methods are completely unimportant to the knowledge production process.

I argue that what Feyerabend was instigating was a discussion about the supposed superiority of science’s knowledge simply because of the methods it used and the supposed superiority for those methods, when in fact, those same methods are a constraint on innovation. The radical notion is his critique of science’s assumed knowledge superiority. Feyerabend promotes an alternate view. He views science’s assumed knowledge superiority as a false superiority and believes that science shouldn’t receive the privileged status that it does. The only reason that science is able to wield the power that it does is because it is the reigning paradigm and the one held by the power holders.
3.3.1 Situated Knowledge

Another critique of science as an institution of power is investigated through what Donna Haraway terms ‘situated knowledge’ (See also Doyle 1994; Stoetzler and Yuval-Davis 2002; Lang 2011). Haraway’s (1988) original article on situated knowledge changed the way knowledge was considered. She outlines her thesis best: “I am arguing for politics and epistemologies of location, positioning, and situating, where partiality and not universality is the condition of being heard to make rational knowledge claims” (Haraway 1988: 589).

The goal of situating knowledge is to fight against ‘the gaze’ and what Haraway terms the ‘god trick’. According to Haraway, the god trick is the misplaced authority that science places on objectivity. This misplaced objectivity is one of the Euro-American cultural narratives that splits mind and body, subject and object, creating distanced and irresponsible knowledge claims that cannot be accounted for (Haraway 1988: 583). In effect, the God Trick is assumed omniscience about the anthropological object. It is a trick in that scientists get duped into believing that their methods produce truth, that observation can reproduce objective reality.

According to Haraway, the gaze is how one sees, observes, and negotiates in their study of the other. This vision is polluted by the narrow methods and epistemologies of science, specifically the capitalist, militaristic, and masculine tendencies (also see Stoetzler and Yuval-Davis 2002). This produces a preferred eye for viewing the world that renders subjective truths invisible.
These subjective points of view can be ascertained if one acknowledges one’s tainted gaze and allows themselves and their objects to be situated. Haraway’s critique is useful for this thesis because it serves as an approach for understanding hybrid constructions of knowledge that are accommodating of indigenous knowledges.

### 3.3.2 Local Knowledge

Knowledge is also local. This is an important aspect of knowing because it disallows the hegemonic narrative to move and colonize other narratives. Locally produced, and because it is context-dependent, and locally meaningful. The idea that all knowledge is local situates knowledge as local knowledge with power coming from the ability to move that knowledge in space and therefore subjugate other forms of knowledge. On this subject, David Turnbull argues that the power that knowledge systems have is directly related to their ability to move in space (Turnbull 1993).

Viewing knowledge as locally produced by locally relevant methods, situates all knowledge systems rhizomatically only in relation to the locations of their production. Since all knowledge is locally produced, it must all be local knowledge, and thus only locally meaningful. In contexts, this equates science with any other knowledge system. Turnbull (1993) argues that while knowledge systems may differ in their underlying epistemologies and ontologies, they are all essentially locally produced. Following this argument, even Euro-American
techno-science is an essentially local process. Removed from nature, knowledge is produced in sterile laboratories and these conditions restrain how this data can be considered true. Abstracting data from constrained conditions makes extrapolation impossible. How can an experiment test a valuable component of an Arctic ecosystem in an Indiana laboratory? Conditions are controlled, which serves to essentially localize the knowledge produced in the Indiana laboratory, not the Arctic. In terms of competing knowledges on the North Slope, Inupiat traditional knowledge is the only locally produced knowledge and should be considered and utilized along scientific knowledge.

Science is often separated from indigenous knowledge by this very qualification (among others): indigenous knowledge is held to be local and science is held to be universal. Turnbull (2008) points to a few aspects of science that lead to the construction of this dichotomy. First is the idea that science has “structured the intellectual agenda” and through this process has “hidden its own agenda” from the other (Turnbull 2008: 1200). He points to movement of a knowledge system as the mechanism for power and hegemony. Second, it is not that scientific knowledge is universally applicable per se; it is being able to transport and configure knowledge elsewhere that holds the real power. Science is supported by a number of these mechanisms, mainly social, literary and technical, that help it to become locally relevant in locations where it was not produced (Turnbull 2008: 1201). Lastly, these abilities also interact with science’s ability to control knowledge inclusion, exclusion, and interpretation, thus allowing/disallowing and controlling the discourses that construct its narratives.
3.4 Conclusion

Kassam (2009) synthesizes two points about knowledge that are important to understand for knowledge and types of knowledge. Kassam cites Gilbert Ryle’s (1984) *The Concept of Mind*, in which Ryle points out differences in knowing. The major distinction he makes is between knowing *how* and knowing *that*. Kassam then takes Ryle’s views and a learning model first put forth by Dreyfus and Dreyfus (1986) and blends them together. Ryle notes a distinction exists concerning the quality of knowledge. The recitation of facts (knowing that), for example, is inferior to knowledge of action (knowing how). This distinction is important when considering indigenous knowledge systems. Most indigenous knowledge is gained from experience (knowing how) and most Euro-American knowledge is gained from books and abstracted from experience (knowing that) (Kassam 2009: 75-77). Following this discussion, he points out that this is however a false dichotomy and posits instead that they are both on a spectrum of knowing and not on opposite ends (Kassam 2009: 77).

This review of knowledge has served to draw out several key points that are relevant to examining the internal and external pressures of Inñupiat knowledge systems. From Rorty, it is gathered that our minds do not mirror nature perfectly. They may be said to mirror nature, but it must be realized that each person has mirror of their own construction. Knowledge is also never objective. It is always constructed locally in certain situations and contexts (Turnbull 2008). Ingold (2000: 90, in Kassam 2009: 71) points out that “we are
not impartial observers of nature but participate from within in the continuum of organic life”. Taken together, knowledge is locally produced in situations where it is meaningful. It is subjective is that each person produces their own knowledge of each situation. No two observers will report the same things because our minds cannot mirror nature. The human mind creates its own realities with the influences of past experiences. Since each of those experiences is different, each person is destined to create different knowledge. In the next section, I discuss these concepts further and specifically in relation to how knowledge is transmitted and constructed.
CHAPTER 4. HOW IS KNOWLEDGE CONSTRUCTED?

4.1 Introduction

I now seek to outline some of the major ideas about the construction of knowledge because I seek to illuminate gaps in these interpretations of the transmission and construction of knowledge so that I can elaborate on how these theories apply in the local Inupiat context. Most often, knowledge construction has been analyzed through the lens of an active teacher and a passive learner. The learner has not often been given agency in what he or she determines to be important to internalize, to construct their own knowledge (Daly 1982). The learner is an underrepresented component of the knowledge system in the ethnographic literature. I aim to highlight the learner and make visible the point of view of the learner. All ethnographies I have studied treat the constructor, the learner, as passive and without agency (Mead 1928; Whiting 1963; Benedict 1938; Spiro 1958; Ishizawa and Renfigo 2009; Laugrand and Oosten 2009; Mathez-Stiefel and Vandebroek 2012; Reyes-Garcia et al. 2009; Pearce et al. 2011; Hewlett et al. 2011; Demps et al. 2012; Zarger 2002).

I focus on active construction by the learner and forward a complex study of the transmission, combined with the construction of knowledge by an agentive
actor. In all of the ethnographies above, knowledge is viewed as “transmitted” but never actively constructed. I utilize these ideas to emphasize both parts of the process, both teaching and learning. It is important to note that these processes are often happening concurrently, but also may happen consecutively.

4.2 Transmission and Construction

An important distinction is between the terms ‘transmission’ and ‘construction.’ Transmission is the process of giving knowledge, of teaching it to someone else or a group of others. Construction is the process of learning, listening, and doing. These processes are often happening concurrently although they are not the same process. This distinction is important because a person has often been viewed as tabula rasa in the eyes of transmission scholars (Mead 1928; Whiting 1963; Benedict 1938; Reyes-Garcia et al. 2009; Pearce et al. 2011; Hewlett et al. 2011). This is not the case as I will show below.

Also significant is the difference between the forms of knowledge transmission and construction. Knowledge is not simply passed down vertically from an older generation to a younger one. Knowledge can be transmitted vertically or horizontally. Knowledge can flow upstream (from a younger to an older generation) or downstream (from an older generation to a younger generation). Knowledge may also flow from multiple teachers to a single learner, from a single teacher to multiple learners, or from multiple teachers to multiple learners. Knowledge production is a cooperative process.
The knowledge ‘recipient’ is not *tabula rasa*. Each learner brings with them a unique point of view. Knowledge is not simply a vertical, downstream process. Knowledge may flow upstream. Knowledge may also flow horizontally. Much enculturation happens from other members of the peer group, members of the same generation, and is transmitted and constructed without intergenerational influences (Hewlett and Cavalli-Sforza 1986; Ohmagari & Berkes 1997; Zarger 2010). This discussion is important to understanding how the Iñupiat knowledge system has been able to absorb waves of changes in their post-contact world and how their knowledge system has remained resilient to these changes.

4.2.1 Bourdieu’s Concept of *habitus*

Bourdieu’s concept of *habitus* helps to understand the transmission and construction of knowledge as a cooperative process as well. If *habitus* is meant as the entire cultural habitat that becomes internalized in the form of dispositions and ways of thinking, a structured structure that structures, then it helps with understanding the construction of knowledge (Bourdieu 1990). While *habitus* is completely internalized, knowledge construction is sometimes a conscious act. In this case however, Bourdieu’s *habitus* prohibits agency except through reflexivity. I would argue that in the case of knowledge construction, an actor may choose what to internalize, what to make knowledge, and what to leave out. “It is the specifically reflexive form of the knowledgeability of human agents that is the most deeply involved in the recursive ordering of social practices” (Giddens 1984:
3). Reflexivity is important because, in non-literate societies, active choices made by the learner ultimately make up the knowledge pool for the next generation. The *habitus* creates dispositions/norms/ideals which in turn inform practice which leads to embodied history, which then informs (not creates) the *habitus* for the learner. Now I would like to go outside cultural theory to investigate some theories from education that are useful for this thesis.

### 4.3 Non-Anthropological Transmission Theories

Studies from outside of anthropology have been crucial for understanding learning and teaching, particularly studies from education theory and psychology. One of the major philosophers of education in the 20th century, John Dewey, argued that education is an inherently social process that is culturally specific (Dewey 1916). Furthermore, Dewey held that education should be a practice used to experience the real world, an opportunity for the student to engage and take from their education, not be taught to (Dewey 1938).

Another contribution to the philosophy of education came from Europe, specifically from Lev Vygotsky. From Vygotsky comes two major ideas: the Zone of Proximal Development and scaffolding (Vygotsky 1978). Scaffolding is the idea that to learn, an individual must be taught at slightly above their individual learning ability. The area between a person’s ability to learn on their own and with the aid of an expert instructor is called the Zone of Proximal Development. By teaching in this Zone, a learner is drawn forward through their education by
the teacher. This creates optimal learning conditions by challenging the learner at just above their ability level and steering them in the proper direction for learning to take place.

Paulo Freire, in his 1970 treatise *The Pedagogy of the Oppressed*, also offers two important contributions to educational theory. The first is the oppressors-oppressed distinction and the second is the banking model of education. The former of these ideas refers to Freire’s argument that education is the tool of the oppressors used to oppress. He says that for a breakdown of this relationship between oppressed and oppressor to occur, both need to critically examine their roles in society and lead the change (Freire 1970: 50-60). The banking model of education refers to the deposition of knowledge from the previous generation into the new generation. Freire critically examines educational systems and concludes that the system views learners as empty vessels waiting to be filled with the system’s knowledge, what they consider to be important. Together, these theories laid the groundwork for what is now considered critical pedagogy and which also form the structure of my understanding of transmission and construction of knowledge.

Two major lines of thought arose from Vygotsky and Freire. These are culturally-responsive pedagogy and critical pedagogy (linked ideas, not distinct fields). Howard Zinn is probably the most popular advocate of these ideas. His book *A People’s History of the United States* (1980) has been both lauded and damned for its content, specifically for its anti-colonial stance and focus on non-white, non-male voices throughout the history of the United States. On his heels

According to these scholars, education is often a hegemonic process, especially when referring to subjugated and oppressed peoples such as indigenous populations. Drawing from Gramsci’s (1971) *Selections from the Prison Notebooks*, the idea of hegemony is oft used in anthropology and educational theory. Second, education often serves to homogenize the population and is used as a tool for discipline (Foucault’s idea of discipline forwarded in *Discipline and Punish*, 1975). I hope to return to these points later in the thesis when examining the introduction of schooling in Barrow and how that affected Iñupiat knowledge systems.

4.4 Anthropological Cultural Transmission Theory

In anthropological theory, cultural transmission has been important to investigating the complexes surrounding learning and teaching. Margaret Mead’s *Coming of Age in Samoa* (2001[1928]) was the first ethnography to focus on education and enculturation. In this text, the beginnings of scholarship on apprenticeship and on time-based conceptualizations of learning, specifically, age-appropriate knowledge and skill development are evident. There was no major thrust for knowledge gain; knowledge can be gained slowly over time with experience (Mead 2001[1928]: 16-28). Also, enculturation begins to be gender
specific around age eight or nine (Mead 2001[1928]: 20), which points to the
importance of gender-specific knowledge.

Ten years later, building upon Mead’s work in Samoa, Ruth Benedict
(1938) wrote an article referring to enculturation as conditioning. Benedict
juxtaposes American culture with that of Mead’s Samoan investigation. Benedict
states that in American culture, education is seemingly sexless in that children go
to school together and learn the same things. However, there are issues with
these ideas, specifically gender differences and emphases in education. But
when situated in the late 1930’s and juxtaposed with Mead’s Samoan
ethnography, it is easily seen how Benedict drew her conclusions. In an Iñupiat
context, Benedict’s conclusions do not seem to fit.

The second piece of information that is theoretically relevant is Benedict’s
investigation into Responsible and Non-responsible status roles. First, work and
play are not necessarily separate. In many societies, adolescent play mimics
adult work (Ruddle and Chesterfield 1975; Ruddle 1993; Mead [2001]1928,
Murdoch 1988[1892]; Whiting and Whiting 1963). Benedict says that this is a
major difference between many indigenous cultures and the culture of
mainstream America. She points out that children’s play mimics work in
indigenous societies, but also that indigenous children are seen as responsible
members of society and that age-appropriate tasks are always given to children
to foster that sense of responsibility. Benedict argues instead of responsibility,
our educational culture leans towards the dominance-submission paradigm,
which is the opposite of characterizations of the Iñupiat educational culture that I will describe in later sections.

Whiting’s *Six Cultures: Studies of Child Rearing* was published in 1963. This study was a cross-cultural look at socialization, enculturation, and cultural transmission in six cultures throughout the world. This study was a multi-team, interdisciplinary look at how children are raised. The work was looked upon at the time as objective and extraordinary, but problems abound with methodology and supposed systematization of results. Still, the study began more intricate, more useful studies into learning and transmission of culture.\(^9\) In the introduction, Whiting references the importance and relevance of Mead and Benedict’s work and acknowledges that any ethnographic history of education should start with them (Whiting 1963: 1).

Shortly after Whiting’s *Six Cultures*, Margaret Mead published *Continuities in Cultural Evolution* (1964). In it she proposed that all cultures have cultural forms that get culturally transmitted to each generation. These forms could be like the outline of a puzzle. Each learner is taught the outline of the puzzle, but it is up to the learner to figure out which pieces are to make up the middle. The possible type and number of pieces is many (Mead 1964: 39-40). Mead also argues that it is salient to understand that as nature changes, both the environment and human behavior, what puzzle pieces one chooses also change. In this way, a trait that might be commonplace among one generation, or one

\(^9\) See also Beals 1967, Chapter 7 for a similar approach with more focus on transmission, the *Case Studies in Education and Culture* series.
population, might be meaningless or not make sense for another. This is the agentive part of cultural transmission and why using a word such as ‘transmission’ is problematic. Each person is able to construct their own knowledge out of a number of cultural possibilities. Transmission is not static, it is a dynamic process and something that I will continually refer to as such throughout this thesis.

Following this thread, Ruddle and Chesterfield’s (1975) Orinoco Delta investigations describe how children learn how to contribute to a subsistence economy. Using a human ecology framework, Ruddle and Chesterfield outline the informal education system and its mechanisms. Their main contribution is to outline age-appropriate skills as determined by the primary teachers, the mothers. They also uphold Benedict’s previous observations of gender differences in knowledge and skill. Ruddle and Chesterfield draw the conclusion that this will in turn, lead to a gender difference in the teaching of skills as well, a difference Benedict does not outline. This gendered transmission of knowledge serves to

![Figure 4.1 Types of Cultural Transmission (From Cavailli-Sforza et al. 1982)](image-url)
produce a bottleneck of gendered information. Also a difference exists between types of knowledge that a person holds. A person may be able to identify a plant, but not know its uses. This specificity in knowledge creates a hierarchy in knowledge quality.

4.4.1 Cavalli-Sforza et al. and Types of Transmission

Cavalli-Sforza et al. (1982) were the first to focus on the quantitative aspects of cultural transmission, an area that they believed was sorely lacking quantification. The goal of their study was to determine rates of cultural change (or lack thereof) of specific type of cultural transmission. For this, they delineated types of transmission, which were vertical, horizontal, and oblique (ibid. 20). Vertical transmission is that which flows from parent to child. Horizontal is that which flows between members of the same generation. Oblique is that which flows between non-parental members of an older generation to non-kin members of a younger generation. Oblique transmission can take two forms: a many to one transmission or a one to many configuration. Figure 4.1 is a chart from their article that visually depicts their results. Cavalli-Sforza (1988) adds upstreaming to this model in a later publication, where upstreaming refers to transmission of traits from a younger generation to an older one. While I did not incorporate quantitative data into this thesis, these result are relevant because they produce an understanding of multiple levels of knowledge transmission and construction that each uniquely contribute to resilience and change.
4.4.2 Formal and Informal Education

Investigations into formal and informal education are also important. Lave and Greenfield (1982) discuss informal versus formal education and problematize previous thoughts about the juxtaposition of the two methods of teaching and learning. Informal education is usually conducted by the kin group and is more culturally conservative where formal education is usually conducted by an educational specialist and is more culturally progressive. Lave and Greenfield also focus heavily on teaching methods, however; they break down previous distinctions between informal and formal educational pedagogies. Their study does not support the dichotomy of informal and formal education. Instead they show that whereas previous scholars have relegated nonverbal instructional strategies to informal education and verbal pedagogies for formal education. They also reject the idea that there is little pedagogy in informal education (an attack from education theory). They show that informal education is just as structured as formal education and these strategies of learning are just as successful, if not better, at producing contributing members of a culture.

Jean Lave and her colleagues made further contributions to cultural transmission theory, specifically in regards to situated learning and communities of practice (Lave and Wenger 1991). Situated learning – the idea that learning is an inherently cultural, social activity and not solely a process taking place in the learner's head – developed out of a blending of ideas and fieldwork conducted by

Communities of practice are learning and acting communities that are formed by people in a shared domain, be it whalers, elephant hunters, or weavers. These communities build a communal knowledge that gets learned, held, and transmitted by members of the group. Three prerequisites apply. First, the domain must be a shared trait of interest. Second, the group is a community in that they share ideas. Third, practice is important; the trait must be a useable skill. Apprenticeship is significant to these systems as collective knowledge is disseminated at a personal level.

Rogoff (1990: 7) considers children to be “apprentices in thinking”, meaning that they are “active in their efforts to learn from observing and participating with peers and more skilled members of their society…” Rogoff develops the idea of ‘guided participation’ to show how children learn skills and the knowledge of how to apply those skills. In the context of culturally valued activities, guided participation suggests guidance of children and their participation in learning. Rogoff shows that this model, built on the above processes blended with intersubjectivity, produced a better learning environment and higher quality understandings of ideas and how to apply them.

10 See also Wenger (2000)
4.5 An Iñupiat Point of View

Following the ideas of non-Iñupiat scholars, an Iñupiat approach here proves useful because it forwards an insider perspective. Apprenticeship is one of Ongtooguk's four major elements of the traditional Iñupiat educational system.

Ongtooguk (2000) outlines the following:

1. Observation – For example, a young Inupiat’s first experiences in hunting entail observation (see Dreyfus and Dreyfus 1986). Young Iñupiat watch their parents prepare and test hunting gear and watch them practice shooting. As a young person, Iñupiat also learn the value system that surrounds hunting and how deeply sharing is integrated into their social systems.

2. Immersion in Stories and Customs – This includes knowledge of hunting customs, traditions, values, and beliefs is embedded in stories that are told to young Inupiat from the time they are very young. Immersion creates and fosters a narrative that surrounds the hunt.

3. Apprenticeship – Young hunters are not thrown into hunting their first time. They learn step-by-step how and why to do things so that the knowledge of hunting is fully embodied.

4. The Community as a School – Learning takes place out on the land or in the house by doing. Knowledge is taught by the kin group.

Ongtooguk provides us with an Iñupiat point of view for how knowledge is constructed and transmitted: very carefully. Alaska Native communities were and are always on the move. Food moves, they either move with it, or move to another food source for that time of the year: “Traditional Iñupiat society was, and is, about knowing the right time to be in the right place. With the right tools, to take advantage of a temporary abundance of resources” (Ongtooguk 2000). The knowledge necessary to do be able to do this for multiple animals takes decades.
of knowledge about variations in these patterns and how external environmental factors may affect the timing of these temporary abundances. Ongtooguk (2000) concludes that Iñupiat knowledge (like all knowledge) is local, specific, and gathered and transmitted through generations.

4.6 Critiques

In this section I would like to address critiques of traditional transmission and construction models, focusing specifically on agency. Martin Daly (1982) argues that people are not passive recipients of culture but rather active agents of change. Even after Daly’s publication, agency is often overlooked in transmission processes; the learner is still looked upon as a passive receiver of data. A person ultimately chooses which cultural traits are adaptive and which are not. Previously an individual may have been restricted somewhat by their culture (and many still are to a certain extent), but a 21st century technoculture does not limit, so much as inform which cultural traits that one is supposed to have. So whereas cultural transmission was previously seen to be replicative, now it is mostly seen as agentive.

Ingold (2000) also produced a model of transmission. While most previous models rely on external phenomena for learning to take place, or quality learning at least, Ingold takes it one step further and theorizes that the knowledge itself is never held inside the head of the individual, it is always held by the exterior world (Ingold 2000: 20-22). Ingold argues that when a person is learning about
something, they are learning from the external world about the external world.
That knowledge only enters the brain as knowledge from external phenomena, thus the knowledge is collectively held by the environment. The objects of observation hold the knowledge. Knowledge is simply an inscription on the brain of the characteristics of an external object. But, Ingold notes (ibid. 21), knowledge consists of the ability to situate the information about an object, to understand its meaning. This is why experiential knowledge or having something actually shown to a learner produces better quality knowledge. Ingold further denounces previous transmission models as viewing the process as ‘imprinting’, as if humans have an evolutionary module to be imprinted upon (ibid. 36). The basis of Ingold’s (2000: 55) theory is thus:

Knowledge of the world is gained by moving about in it, exploring it, attending to it, ever alert to the signs by which it is revealed. Learning to see, then, is a matter not of acquiring schemata for mentally constructing the environment but of acquiring the skills for direct perceptual engagement with its constituents, human and non-human, animate and inanimate. To recall a distinction I introduced in the last chapter, it is a process not of enculturation but of enskilment.

Ingold also argues that knowledge is gained along the plane of movement of life. Each individual’s life moves along a line of their life. People’s lives intersect at various points where those lines intersect. Knowledge is gained at these points of intersection along the way; intersecting lines of movement of two (or more)
different people (ibid: 145-6). The meeting of two or more lines of life produces a complex sharing of knowledge, not an inheritance of structure.

4.7 Synthesis

Synthesizing Ingold’s lines theory with Kassam’s model proves most useful because it produces a more robust explanation. Kassam (2009: 75-80) provides a model of knowing that is comprehensive, blending two theories of knowledge together (Ryle 1984; Dreyfus and Dreyfus 1986) to create a more holistic understanding of quality of knowledge that relates better to what has taken place in Iñupiat communities over time. First, Ryle’s 1984 *The Concept of*

![Table]

**Figure 4.2 Synthesis of Dreyfus and Dreyfus (1986) and Ryle (1984)**

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11 See Deleuze and Guattari’s (1987) *A Thousand Plateaus* for a full description of lines theory. Also see Ingold (2011: Chapter 1).
*Mind* gives us two major ways of knowing: knowing *that* and knowing *how* (Ryle 1984: 27-32). Dreyfus and Dreyfus (1986: 21-36) provide a scale model of knowing that is hierarchical, moving in five stages from ‘novice’ to ‘expert’, gaining better knowledge and more proficiency at each level. Figure 4.2 is Kassam’s visual representation of that synthesis. Ingold (2000: 164) adds, “most cultural learning takes place through trial-and-error and practice, albeit in socially structured situations, and although beginners may need to follow rules, these rules structure the situation of learning and do not themselves form any part of the content of what is learned.”

Ingold’s observations would apply to the level of a Competent Performer in that the learner is beginning to understand *how* to apply the information that they have gained in a meaningful way. In an indigenous context this hierarchy of knowledge is important. In contrast with a Euro-American context, knowledge of the land and the animals within it is vitally important for Iñupiat survival, even today. Knowing *that* is only the first step to Iñupiat knowledge. One needs to know *how* to apply that knowledge on the land, on their own. Without this knowledge of application, knowledge cannot be realized and transmitted.

Finally, Ingold points to the goal of the learning process and how this comes about. The learner, through trial and error and guided by his or her own experiences, gradually gains an understanding of *how* to use the knowledge that he or she has gained. In this way, the information that was taught at the intersecting of the two lines becomes internalized. This is a personal process, an individual one, for each person, armed with their own set of experiences, will
internalize the same information differently. In this way, it is impossible to hold to the belief that knowledge is solely formed by the structure of society itself.

Thus I see knowledge construction as an individual process by which a person learns with abstraction and experience, with traditional knowledge and new, with agency and structure. Using Vygotsky’s notion of scaffolding and synthesizing it here proves useful because it acknowledges the role of the transmitter and the constructor. A teacher provides the trellis, but the learner decides which roses to plant. From experience, a novel knowledge construction is created from the possible constructions provided by culture (Giddens 1984). So whereas previous scholarship has been either focused on the teacher or the learner, the transmitter or the constructor, I show how it is important to view knowledge exchange as more of a combined, simultaneous process. Viewing one side of the equation without the other fails to provide the entire picture of how knowledge is transmitted and constructed.
CHAPTER 5. KNOWLEDGE IN THE EARLY CONTACT PERIOD

Next, to demonstrate how these processes apply in a specific case study, I will construct a history of Iñupiat knowledge and knowledge change. First I reviewed what I mean by knowledge and the processes by which knowledge is transmitted and constructed. What is known about Iñupiat peoples comes from multiple types of historical sources, which is why I have taken an approach that includes multiple types of sources. The first source is material remains gathered by archaeologists. This mostly takes the form of excavated materials from before the historical period as reckoned by Euro-American scholarship. The second source is ethnohistorical documents written by Euro-American scholars with data gained directly from Iñupiat sources. These are often oral histories obtained through interviews; essentially biographies from the source. The third type of source is materials written by members of the Iñupiat community. These are often auto-biographies or stories. The fourth source is journals written by explorers and whalers, memoirs and journals of sorts. As I move forward through the historiography, the nature of sources often changes. As the previous review attests, I place just as much emphasis in a mid-20th century interview with an
Iñupiat elder about what his or her grandparents told them as I place in a 19th century explorer’s journal.¹²

This section outlines how the Iñupiat have conceptualized knowledge and its transmission with the period directly preceding contact at Point Barrow in 1826, through the two major contacts of this period (in 1826 and the early 1850’s) until right before the advent of Yankee Whaling, missionization, and formal schooling beginning in the 1880’s. This period is characterized by minimal outside influences, pre-European-style subsistence practices, and the transition from indigenous material culture to one that includes and is familiar with European material culture.

Knowledge systems during this period are difficult to synthesize because of the nature of the sources. Ethnohistorical accounts and explorer’s journals and observations have certain biases such as not acknowledging bias and many times being outright racist. Material culture such as hunting gear, children’s toys, and introduced Euro-American goods can provide a basis to hypothesize about changes in culture and changes in knowledge transmission as well as to hypothesize to the nature of knowledge being transmitted.

5.1 Cook and Other Early Expeditions

In 1778, Captain James Cook sailed into the Chukchi Sea, which makes up the northwest waters of Alaska (Edwards 1999). Cook sailed as far as Icy Cape, about 150 miles south of Point Barrow. That was the furthest north the Alaska coast had been explored. In 1816, Otto von Kotzebue explored and name Kotzebue Sound and make contact with some Iñupiat people (ibid.). Although south of Icy Cape, this is the first documented direct contact with Iñupiat peoples.

In 1820, Russian explorers sailed along the coast again, this time coming into contact with some Iñupiat that had guns (Foote 1965: 45-54). The Russians met an English ship, the Pedler commanded by William Pigot, that said it was trading for furs. The Pedler carried ammunition and firearms for trade (Howay 1973: 141-142).

In 1824 to 1825, John Barrow sent out three expeditions to map the northern coast of North America. William Beechey was captain of the HMS Blossom, one of the ships that Barrow sent to map the coast. Beechey’s crew made first contact with the Iñupiat at Point Barrow (Nuvuk). Beechey became wary of the ice around Icy Cape and sent the ship’s barge instead, under command of Thomas Elson, to chart further. They reached Point Barrow on August 13th, 1826, the date I use for contact (Beechey 1831).

Minor expeditions into the area took place in the 1830’s. These expeditions reported tobacco to be the major barter good, and both the English and the Russians reported in many records that the Iñupiat would act very
aggressive at first, attacking, stealing, and generally harassing any outsiders (VanStone 1977; Simpson 1843: 147-177). Historically, the Iñupiat were wary of outsiders and unless a kin relation in the village was quickly shown, outsiders were usually attacked on sight. This was for practical reasons, not because they were savages as reported by early explorer’s, but of course, indoctrinated into the ideology of discovery, these white explorers erred on the side of an interesting and heavily racialized narrative (Beechey 1831; Bockstoce 1988; Murdoch 1988[1892]). The first whaling ship moved into the southern Bering Sea in 1848. By 1852, more than 200 whaling ships were patrolling those waters, but not reaching north of the Bering Strait and moving into Iñupiat territory until 1879 (Bockstoce 1988). In 1884, the first permanent Euro-American presence in Iñupiat lands began. In 1881 and 1882, Europeans wintered at Point Barrow but left in 1883 and returned in 1884.

5.2 John Simpson and the HMS Plover

John Simpson, the Surgeon on the HMS Plover, made several observations of Iñupiat culture in the time that he was near Barrow in 1852 to 1854. The captain of the ship, Rochfort Maguire had a journal (Bockstoce 1988), but it did not provide any useful cultural data that was not included in Simpson’s ethnographic account (Simpson 1855). Simpson was the first European to make the argument that kin was the major driving force of Iñupiat culture. According to Simpson, when traveling, an Iñupiat needs to know where all his kin and
extended kin may reside. Children are taught this at a young age. But in small
groups and villages, one must rely on people who might not be kin. Simpson
observed that it was important to help those in need because one never knows
when they may be in need and need a favor. This is also a virtue taught to young
children.

Later, scholar Kassam (2009: 68) uses Brody’s idea of ‘individualistic
egalitarianism’ that serves to contextualize Simpson’s (1855) observations.
According to Kassam, the hunter kills the prey and it is important that the hunter
has the individual skills to do so. By the same token, the meat gets split between
Serving to demonstrate continuity in certain hunting practices, I observed this
myself in Barrow during my BASC internship in 2013. Five hunters went out
hunting for caribou. They killed six caribou, but only three hunters made kills. The
meat was split equally between the hunters. While butchering, the hunters were
making five piles of meat, one for each hunter. No one argued about the splitting.
Meat was put into piles by the hunters and the captain of the crew would
redistribute it to make it more even. For example if pile one had a small hind
quarter, they got a larger back strap, for not all caribou are evenly built.

Back in the 1850’s, Simpson observed that education of non-kin is
unknown, but that every adult will educate every child in the kin group at some
point or another. In this, children’s play mirrors adult work. This is pointed to by
other scholars in later publications as well (see Okakok 1989; Oswalt 1967;
Burch 2006). Specifically, Okakok (1989) shows a long history of sporting events
and says that these events often mimic necessary skills for survival in the Arctic. Sporting events are used to develop skills necessary for the hunt or to teach skills or values deemed necessary by the Iñupiat (Murdoch 1988[1892]: 383-4; Okakok 1989; Spencer 1976: 238-40).

One of the major events today is the annual umiaq race during the week of 4th of July in Barrow. Whaling crews pile into their seal-skin boats and race out to the ice floe and back, often about a mile or so each way, with mini-icebergs in between. When I observed this race in the summer of 2013, there were four rowers on each side of the umiaq, with the whaling captain in the back shouting to the rowers. Some crews took a young boy or two along with them, apprentices. The rowers did not look up the entire time; they rowed off the captain’s cadence. Once they got out far enough, the umiaqs had to dodge flowing ice, which often obstructed their way and created collisions and bottlenecks between crews. The race I observed took longer than 20 minutes. Seemingly hundreds of people stood on the beach. Everyone was cheering for their specific crew. I was shouting for one of my friends’ crews. The end of the race was close so the shouting rose towards the end with the rowers siphoning energy from the crowd. The prize consisted of nine 55-gallon drums of gasoline, which the whaling captain distributes amongst the crew. Paddling is a necessary skill for spring whaling and other marine mammal hunting and necessary to win the 55-gallon drums of gasoline for your crew. This was an interesting experience for me because by the time I had arrived in 2013, whaling in umiaqs had ceased because of ice conditions. Therefore I had not seen a whaling crew in action up
until this point. While these observations from the summer of 2013 resonate with some of Simpson’s findings and may indicate continuity in changing contexts, the retention of certain values and practices over time provides us with an example of resiliency of Iñupiat hunting practices.

In terms of gendered education, Simpson (1855) reported that education is typically gendered and that women typically do domestic work, while men hunt or go to the men’s huts (qargi). Women will hunt if necessary and they do most (if not all) of the butchering and cooking. According to Simpson, the men recognize the value of women however and do not view them as inferior. Women do separate but equally important tasks and also complete men’s tasks if necessary. Typically, the Euro-American view, such as Simpson’s described above, has been that rarely do men do tasks that are typically associated with women.

5.3 The Traditional Iñupiat Educational System

Moving to the historical Iñupiat education system, Leona Okakok, an Iñupiat, points to six Iñupiat knowledge domains that are traditionally held Iñupiat values (Okakok 1989). These are hunting, sewing, climate, geography, kin relations, and values. Education includes learning within all of these domains. The Iñupiat knowledge system is a holistic system in that knowledge about something must be complete. Anything missing is considered a major flaw. In this way, the Iñupiat knowledge system differs from Euro-American technoscience because of the rigid divisions and specialization of knowledge that takes place.
within the academy. Okakok contrasts with Simpson (1855) and says members from within and without the kin group constantly educated a child, but most education took place within the kin group because those were the people that the child associated with the most. It was every adult's job to point out anything dangerous to any child or to correct a behavior that could prove fatal.

Stories, myths, and personal biographies were the one of the primary means of transmitting culture in the pre-contact period and in what I call the Early Contact Period (Okakok 1989; Wexler 2006; Burch 2006; Spencer 1959). These stories were often told in the qargi by adult men to the young boys. Cultural ideas/domains were thus passed by accomplished, skillful storytellers who were part-time specialists. Iñupiat strengths and values were apparent in each story. One of the main foci for Okakok is that that children had the time to sit and listen to elders speak of Iñupiat history and culture, whereas overtime, the amount of time available has changed dramatically (Okakok 1989).

Lessons were often embedded in the stories as well as general knowledge of their world (Wexler 2006; Burch 2006). Storytelling was an art and a cultivated skill, which few members of the lineage had (Burch 2006). Competitions were often held to see how many stories a person knew. What was of paramount importance was to recite the story correctly (Spencer 1959: 383). Any minor deviation of knowledge was considered to be a major infraction and was corrected immediately by the listeners. Folke (2004) points to the importance of traditional knowledge for increasing adaptive capacity and overall resilience of the social-ecological system. By ensuring that knowledge was being transmitted
properly, older Iñupiat were able to ensure the correctness of the knowledge and contributing to social-ecological resilience. Children were taught how to read subtle clues in oration. Often the stories that boys heard at the qargi and girls learned at home, were told to each other to reinforce the lessons and to practice oration. As Wexler (2006) states, this also served to homogenize knowledge between groups of friends.

In terms of knowledge transmission, Burch (2006) points to two major transmission complexes in Iñupiat culture. The first is many-to-one type knowledge transmission and was centered on the qargi for boys or the house and immediate surroundings for girls. In these instances, the elders in the kin group chose what was talked about and the children listened. The learning in these settings was mostly stories and other knowledge that was transmitted orally such as history, myth, and biography. There was also much work done in these settings. For girls, they were scraping and sewing skins or cooking. For boys, they were making tools and weapons.

The second type of transmission pointed out by Burch (2006) was one-to-one instruction or one-to-many instruction. These were the instances of hunting and checking trap-lines for boys and gathering berries, hunting small game, or fishing for girls. The educators were most likely the parents or other close adult kin. In these instances, knowledge was gained by doing.

To these I would add a third, horizontal component. As Wexler pointed out, children would often practice oration by telling each other stories that they had heard while in the qargi or at home working. This served to train their oratory
skills as well as assisting them in remembering the stories correctly. I surmise that they would have corrected each other’s mistakes so that the stories were reproduced correctly. It is almost certain that younger siblings were part of these rehearsals and thus they served to help the younger siblings gain knowledge as well.

When a child expressed interest in learning something that was not dangerous for them at that age, they were taught, but not before. Like Ruddle and Chesterfield (1975) and Ruddle (1993) observe, Oswalt points out that tasks were scaled to age (Oswalt 1967). This is important because while doing their tasks, a child would see an adult or older child doing a more complex task and be familiar with it and even learn how to do it in theory before actually attempting it. For example, boys could not learn how to hunt until they were old enough not to be a hazard when hunting outside of the settlement (Burch 2006).

Children could however practice hunting by shooting a bow and arrow or by staking and killing shorebirds (Murdoch 1988[1892]; Spencer 1976). They could also help butcher animals, thus learn about the biology and traits of each animal. Something that helped me to conceptualize this process was one of my own experiences as a BASC intern. When helping to butcher a large bearded seal, I observed children doing tasks such as sharpening knives and ulus and completing the easier parts of butchering. The children were there the entire time, watching their kin butcher. They never left. They watched and listened to adults talking, learned what was going on and why. I asked them questions and they
gave answers only when they actually knew them and referred me to someone who they thought would know the answers if they did not.

Another important trait about how the Iñupiat transmitted knowledge was that particular faculties and skills were acknowledged and nurtured. Because someone in the kin group might also have that personal skill, parents might not be the main educator for that particular skill. Children may also be apprenticed to another member of the kin group, a member that excels at a skill that that child excels in and would like to learn. (Okakok 1989; Burch 2006; Ongtooguk 2000).

5.4 Conclusion

Major changes came towards the end of this period resulting in the catalyst that I use for the transition between periods. Whereas this period was characterized by non-permanence in relations with outsiders, the Late Contact Period will be where permanent contact with outsiders begins. The Early Contact period was a period of change, but slow change, characterized by the introduction of outside goods such as metal and guns, but not in sufficient enough quantities to change Iñupiat behavior and culture. Methods might have changed, but underlying structures did not. This is the very definition of resilience. The Iñupiat throughout this period were able to adapt to new conditions without completely changing their social-ecological system. What was it that made their system so resilient?
CHAPTER 6. KNOWLEDGE IN THE LATE CONTACT PERIOD

The Early Contact Period was characterized by the introduction of foreign peoples, foreign culture, and foreign goods. These foreigners that were converging on Barrow were members of other Inuit groups strewn along the Alaska and Canada coasts, they were other groups of non-Inuit Alaska Natives, and they were Euro-Americans from the Lower 48. However, these visitors were occasional or seasonal traders, and never stayed very long. The one exception to this was the wintering-over of the HMS Plover from the years 1852 to 1854. While the explorers stayed and interacted with the locals at Nuvuk (Point Barrow), they were still relatively isolated. This all changed with a permanent settlement at Point Barrow beginning in 1881 (with a year’s hiatus starting in the summer of 1883). Ever since, there has been a permanent outsider presence in the Barrow area. This is what I consider to be the beginning of the Late Contact Period, the focus of this section.
6.1 Murdoch and Ray: The First International Polar Year Expedition

The First International Polar Year Expedition (1882-1883), funded by the United States Signal Corps and the Smithsonian Institution, sent a small operation of about 10 men to Point Barrow for two years primarily to record meteorological and physical data (Burch 2009). Implicit in their instructions was to learn what they could about the local population. They operated a research station in present-day Barrow. The expedition leader, John Murdoch, published a major book on the subject (Murdoch 1988), in which his second-in-command, Patrick Ray, produced a well-written short ethnographic sketch (Ray 1988).

Murdoch and Ray’s insights form the context for the beginning of this period, before the missionaries arrived and before the school teachers arrived. Murdoch includes many cultural traits in his writings. For instance, Murdoch notes that the Iñupiat have had firearms since the 1840’s and that they have completely replaced bows and arrows by the time of his arrival in 1881. He does say however that whaling guns are not in complete usage and that some whaling crews still use the steel lance. Coupled with Ray’s insights into culture change, the lances were probably retained for spiritual or cosmological reasons. Both Murdoch and Ray point out the fact that many people were reluctant to use white man’s tools on the water. On land it was not a major problem, but the local people would tell them that the whales were smarter.

Ray (1988) states that the Iñupiat had not fully made the transition from stone tools to metal tools and this is shown by the many bone and stone
implements that they use even when iron replacements are available. Ray believes that the Iñupiat were so well adapted to using stone tools, that even when presented with iron alternatives, they would rather use the stone tools. While it is difficult to equate contemporary hunting practices with those of over one hundred years ago, I presumed that I could casually discuss tool use with Iñupiat hunters in 2013. When asked, the hunters said that they always use the best tool for the job, no matter how steeped in tradition an object might be. The best example of this from living memory was the transition from sled dogs to snow machines. One elder I talked with remembered this transition well. He said that one winter was noisy with barking dogs and the next was not, perhaps implying that everyone had killed their dogs.

When asked, Ray (ibid) said that some Iñupiat men claim that the white man’s implements are impure or inferior in construction. So either that they are somehow taboo, the animals do not like them, or that they will falter when put to the test. Another elder commented on his ability to fix his own boot when hunting. He said that he killed a deer, made a needle with a bone, used sinew as thread, cut some hide off the deer, and patched his own boot. He then asked Ray “Could a white man do that?” (Ray 1988: ciii).

6.2 Schooling and Missionization

Coinciding with the permanent arrival of Euro-Americans is the Organic Act of 1884 that mandated schooling for all children of Alaska regardless of race.
It was not until after the turn of the century however, that professional school teachers were sent to Barrow, those before were primarily missionaries. Sheldon Jackson, the first General Agent of Education for the Alaska Territory, took it as his personal mission to both educate and Christianize Alaskan Natives. He believed that to civilize Alaska Natives, they needed education and Christianization. In short, Jackson believed that the Iñupiat needed to be assimilated into mainstream American culture. Jackson outlined three major goals for Alaskan Native education (Cox 1991: 23). The first was to establish English-speaking schools. The second was to provide “moral and sanitary” education (ibid.). The third was to compel attendance. Jackson’s program of education was designed to “become the instrument whereby the original culture of the people could be replaced by the cultural norms of the American people” (Cox 1991: 24).

In terms of education and missionization, the first Presbyterian mission in Barrow came in 1890. The mission was founded by a minister from Ohio, Leander Stevenson (Burch 2013). Stevenson’s priorities, in order, were teaching, medical care, then missionary work. Much of his early work was hindered by bad ice conditions in the Chukchi Sea, disallowing replenishment of supplies or new supplies to reach him regularly. There were some summers where replenishment just did not come at all and he had to rely on the shore whaling station for support. He did eventually build the Presbyterian Church that still stands to this day, but he was not very successful at religious conversion. Stevenson was however successful at attracting the Iñupiat to hymn singing (Spencer 1959).
Because of the high level of interest in music, he continued this, with growing popularity for a number of years. His successor, Dr. Horatio Richmond Marsh, was much more successful, as his first priority was conversion, not education (ibid.). The success of the mission has to lie on his shoulders. He learned Iñupiat within two years and was thus able to teach them about Jesus and his resurrection, which dovetailed quite well with a myth of their own (Spencer 1959).

In addition, the mission always had medical care, food, and clothing and people could always come to partake. This created an atmosphere where people were coming and going as they pleased, similar to how Spencer viewed Iñupiat households.

Ann Fienup-Riordan provides a good overview of the beginning of Euro-American type education in Barrow (Fienup-Riordan 1991: 242-251). John and Edith Kilbuck were the first professional school teachers. They were hired by the Bureau of Education and contracted to begin education in Barrow. Missionaries did some teaching before this, but they were the first people whose job was to teach the Iñupiat at Barrow. The Kilbucks arrived in 1904 and left after only one school year. They had worked with Native Alaskans before, the Yupik and incorrectly assumed that the Iñupiat in Barrow were going to be the same as those down south. This didn’t prove disastrous, but surely hampered their attempts at acceptance.

The Kilbucks worked immediately to enact cultural and economic reform. John began by teaching English and mathematics, two very disparate disciplines. He did not disallow the usage of Iñupiaq in the classroom, but if a student spoke
Iñupiaq, they were required to stand up, often to ridicule by their peers (Fienup-Riordan 1991). So in effect, Iñupiaq could not be spoken for practical, school-related tasks and English must be learned to follow along with the lessons in class. John attempted to teach English and mathematics in culturally-relevant terms. But this was not because he was sympathetic to the children; it simply made learning easier for them.

The fundamentals of addition and subtraction were taught using monetary exchange principles. John used local items and phenomena to teach English rather than examples he might have used in the Lower 48. John strove for a complete overhaul of the Iñupiat way of life. He was outspoken against the indigenous worldview and active in his role to create good Christians. He was “anxious to replace Iñupiat rules of action with his own” (Fienup-Riordan 1991: 249). Fienup-Riordan (1991) saw it as John Kilbuck’s responsibility to civilize the Iñupiat. The Kilbucks did not make much effort to learn the Iñupiaq language, and this hurt them in the end. John wrote that the semi-nomadism of the Iñupiat made for sparse school attendance and blamed this as to why he was ineffective at ‘civilizing’ the youth.

Because the Iñupiat were required to go to school and church, the Iñupiat were required to become more sedentary (ibid.). This had a serious impact on Iñupiat ways of life and being that required new accommodations. While not completely nomadic, the Iñupiat were seasonally mobile, returning to their semi-subterranean houses in the fall. This all changed when Jackson insisted that they remain in one village year-round. This brought the Iñupiat into the disciplinary
fold of mainstream American culture and allowed the Iñupiat to be assimilated more easily.

Foucault (1975: 170) notes “The success of disciplinary power derives no doubt from the use of simple instruments; hierarchical observation, normalizing judgment and their combination in a procedure that is specific to it, the examination.” These were the tools used by Jackson and the Bureau of Education in attempts to assimilate the Iñupiat and all other Alaska Natives. The missionaries created a space where they could watch the Iñupiat, where they could judge them, and where they created the narratives and the discourses allowed in those narratives. Needless to say, none of those discourses were of Iñupiat origin. The introduction of schools and missions created spaces where the Iñupiat were at a severe disadvantage in terms of discourse. They did not know the rules of those spaces and were thus excluded from creating their own discourses and instead being forced to accept those that were created for them. This is colonization at its most brutal.

The discursive spaces of the school and the church were alien to the Iñupiat and there is a sharp distinction between Iñupiat-style learning and Euro-American type learning. The former is characterized by questioning and storytelling and personalizing education (Briggs 1992). In this way, each student got the best education to be successful in the culture. In contrast, Euro-American education is characterized by discipline, a complex ordering or right and wrong behaviors, and uniformity in pedagogy, praxis, and evaluation.
Wexler’s (2006: 25) argument is thus:

The decontextualized knowledge of missionary educators ignored that which is original, subjective and negotiated between people. In so doing, Western education negated the value of personal and conferred ways of knowing, replacing them with rigid doctrines that used foreign lenses to judge people individually.

This focus on the individual is important for discipline and for assimilation purposes. The individualization process is difficult for many people, especially people whose culture has a group emphasis. I suggest that Iñupiat culture is characterized by individual egalitarianism. The discursive spaces that were created by Euro-Americans in Barrow at the turn of the 20th century were attempts to break that custom. Applying Foucault (1972), removing individuals from context is essential for assimilation and for the powerful, a means of discipline.

6.3 Religious Conversion

Spencer highlights that the most important factor however, was that the mission undermined the power of the shamans, whom the Iñupiat feared and disliked (according to Spencer), but were nevertheless forced to consult because of the power that they wielded over illness and the supernatural (Spencer 1959: 381). According to Spencer, as soon as Marsh was able to articulate the intricacies of Christianity to the Iñupiat, they listened because it undermined shamanic authority. In addition, the nurses and medical practitioners at the
mission did not charge exorbitant fees for their services like the shamans apparently did.

In terms of religious conversion, Burch points to two major factors for why it happened so quickly and without much struggle in Iñupiat communities: timing and worldview. In regard to timing, Burch (2013: 67) indicates that the North Slope ecological system had been racked by the advent of commercial whaling and the decline of many sea mammal populations in and around Barrow. He also points to some major internal religious beliefs as changing shortly before this time. These beliefs are similar to angels and souls in Christianity and helped the conversion process. In terms of worldview, Burch (2013: 68-71) compares several orientations of Christianity and traditional Iñupiat religion that serve to make transition easier for the Iñupiat than with some other groups, as shown in Table 6.1.

Table 6.1 Comparison Between Traits of Christianity and Historical Iñupiat Religious Practices

<table>
<thead>
<tr>
<th></th>
<th>Iñupiat Religion</th>
<th>Christianity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operational</td>
<td>Inclusive</td>
<td>Exclusive</td>
</tr>
<tr>
<td>Temporal</td>
<td>Future-Oriented</td>
<td>Far Future-Oriented</td>
</tr>
<tr>
<td>Technical</td>
<td>Focus on Practical Results</td>
<td>Moralistic</td>
</tr>
<tr>
<td>Substantive</td>
<td>Supernatural Orientation</td>
<td>Supernatural Orientation</td>
</tr>
<tr>
<td>Response</td>
<td>Mechanistic (Deterministic)</td>
<td>Interactive (non-Deterministic)</td>
</tr>
<tr>
<td>Ecclesiastical</td>
<td>Non-Specialized</td>
<td>Specialized</td>
</tr>
</tbody>
</table>
As shown by Burch, the knowledge of these two religious groups is different. They live in different worlds than each other. The knowledge production processes are different, the knowledge transmission processes are different, and they are produced with different ontological and epistemological bases. The fundamental differences between these religious types produces a difference in culture because religion is entangled within culture. I consider that when the religion starts to change, so do the knowledge acquisition and transmission processes.

This is a major time of change for knowledge processes. It is a transition period between old and new (Burch 2013: 73-4). But these changes do not replace all forms of knowledge. Like Burch pointed out, Iñupiat religion was focused on practical results. This is a cultural trait as well as a religious one, and one that is still pervasive today. In the process of my BASC duties and in the literature (Nelson 1969; Spencer 1976; Ray 1988) it is always noted that while sentimentally tied to older methods, the Iñupiat are not long in accepting new technology that makes their subsistence harvest easier. The Iñupiat use guns instead of bows and arrows, whaling bomb guns instead of lances, and plastic floats instead of skin ones. But they still utilize the umiaq, which is easier to carry over the ice during the spring hunt. So the Iñupiat are pragmatic, but not pragmatic to a fault. Sometimes the best tool is of Iñupiat origin in the case of the umiaq and sometimes it is not. That does not matter; what matters for the Iñupiat are the practices themselves. Much like the hybridization of knowledges, the hybridization of practice also plays out in an Iñupiat context.
Stories rooted in the non-empirical world, in the world that Euro-Americans call “superstition” is many times considered to be truth by the Iñupiat. Harry Brower tells many stories that reflect this worldview (Brewster 2004: 123-4). The stories that are still told among the Iñupiat tell of ghosts, animals turning into humans, anthropomorphic beings, and a variety of other supernatural occurrences. Throughout Iñupiat post-contact history, stories such as these are commonplace to the Iñupiat, who grew up hearing such stories that often transmit cultural values and knowledge (Brewster 2004). The commonly held Iñupiat belief that whales “give themselves” to a ritually pure hunter still persists among all of the whalers that I talked to in Barrow and is also in the literature (Brewster 2004). They said it is a sight to see, like the whale is following you and refuses to go away.

6.4 Conclusion

By 1885, about half of the Iñupiat in Barrow incorporated wage work into their yearly activities (Wexler 2006: 21). But up until this point, the interaction between Whites and the Iñupiat was focused on economic exchange and did not really affect belief structures. The major changes began after the shore-whalers arrived in 1884. The whalers married Iñupiat women, promoted an extensive trade in baleen which lasted until the collapse of baleen prices and no doubt would have continued and led to the extinction of the bowhead whale. The whalers also used the Iñupiat as labor for building and for manning Yankee
whaling crews (Brower 1994; Jenness 1918). This was shore-based whaling conducted primarily by Charlie Brower and his employees and contractors and could be contrasted with ship-based whaling because Brower stayed in the Arctic year-round, and the shore-based whalers lived with the people, thus forging a different type of relationship and enacting change more heavily. This is important because the Iñupiat were being paid by Brower and the Pacific Steam Whaling Company to whale. Community members were compensated for work that they would have been doing anyway and catching many more whales, providing even more subsistence food in the process and allowing population to grow (Chance 2002: 36-7; Brower 1994).

Moving back to Iñupiat education and assimilationist strategies used by the missionaries, I refer to Wexler (2006: 26-27), who provides a deep discussion of William T. Harris’ beliefs about Native education in Alaska. Harris, the US Commissioner of Education, believed that it was necessary to convert traditional Iñupiat practices to Christian American ones. According to Harris, the United States needed to exterminate the culture of the Iñupiat because it was preventing the Iñupiat from civilizing. Wrapped up in this struggle was the Iñupiat religious practice. Harris believed that so-called “nature religions” and indigenous knowledge were characteristics of lesser humans and that it was the Bureau of Education’s responsibility to ensure proper education for all American children.
A good context to Harris’ arguments regarding education is the ‘colonization of consciousness’ perspective discussed by Comaroff and Comaroff.\textsuperscript{13} Comaroff and Comaroff (1989: 289) note:

The colonization of consciousness, in other words, entailed two levels. At its most tangible, it involved an overt effort to \textit{convert} the Tswana, an argument of images and messages intended to convince them of the ideological content of Christianity. Here the evangelists tried to disseminate, in the heart of darkness, the Good News, a persuasive narrative of biblical morality and ‘truth’. At a deeper level, only partially distinguished from the first, they set their sights on the total \textit{reformation} of the heathen world; i.e. on the inculcation of the hegemonic forms, the taken-for-granted signs and practices, of the colonizing culture.

This is an apt quote for what Jackson and Harris were attempting in Alaska. This consciousness gets incorporated into a person’s culture, their \textit{habitus}, and in turn, gets passed down to the next generation. The colonization of consciousness is a colonization of the whole person, psychically and mentally. Applying these ideas to the context of the Iñupiat’s situation during this time period, it is easily seen how pervasive Christianity and Euro-American assimilationist policies became in the wake of their arrival. These changes were to set the Iñupiat down a path where they would have to learn to negotiate their status in a world in which their knowledge does not count and where the discussions they enter are stacked against them from the outset.

\textsuperscript{13} Wexler (2006) discusses these ideas on page 28, but does not develop them fully, nor quote them properly. I went back to the original article to provide my own analysis of their work and its meaning for Iñupiat history.
The collapse of baleen prices in the US and in Europe in 1907-1908, spelled economic disaster for the Iñupiat. The Iñupiat had been drawn into an economy with the promise of at least some dividends from only one trade good. When the bottom fell out of that market, they did not have a solid backup plan and it took years to forge one. Similar to what an elder told me in Barrow in 2013, no matter what happens, the Iñupiat will be able to live off the land. For the most part, in the wake of the collapse of the commercial baleen market, this is what happened. The problem was that the populations of seal, walrus, and bowhead whale had been severely depleted (Sonnenfield 1959: 76).

7.1 Changes in Subsistence

After the collapse of the baleen market, some Iñupiat fell back to herding reindeer. In 1892, the first reindeer were brought across the Bering Strait along with Saami herders to teach the Iñupiat how to herd the reindeer and the

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For an extensive look at Iñupiat reindeer herding, see Kusiq’s autobiography (Bodfish Sr. 1991).
differences between reindeer and caribou (Fjeld 2010). Although both caribou and reindeer are the same species, *Rangifer tarandus*, a cultural and behavioral distinction exists between the domesticated reindeer and the wild caribou.  

Reindeer herding did not prove popular or profitable until the collapse of the commercial baleen market, because this coincided with a severe depletion of traditional subsistence game (Sonnenfield 1959).

The reindeer population continued to grow into the 1920’s and hit a high sometime in the 1930’s before it collapsed. The Barrow herd started with 125 reindeer and at its peak numbered more than 30,000 (Sonnenfeld 1959). By 1952, all of the Barrow reindeer were gone, they had all been absorbed by the rebounded caribou population (ibid: 80). Beginning in the 1920’s consolidation of the herds at Barrow began, combining the disparate herds into one corporate enterprise, to be herded by a select group of men (ibid.). Shares in the company were based on how many marked reindeer a person owned at the time of inception. Herders were supposed to be hired by the company, but the company often lacked capital to pay anyone. So often no one herded the reindeer. Between 1928 and 1930, no one herded the reindeer at all (Sonnenfield 1959: 83). Perhaps this was an instance when the Iñupiat demonstrated extreme resilience in their social-ecological system. They were able to change parts of their subsistence activities and parts of their culture in order to survive. But when

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15 See also Vorren (1994) for more information regarding the difference between caribou and reindeer and about the emigration of Saami and their role in teaching the Iñupiat how to herd reindeer as opposed to hunting caribou.
the populations of their historical sources of food were starting to rebound, they lost interest revived those practices, which they retain to this day.

Jenness (1918: 92) foresaw the reindeer population decline when he wrote about how difficult it was to turn a fierce hunter into a herder. He predicted a return to hunting as soon as the populations of animals rebounded. The reindeer continued to increase until 1935, then disinterest in herding dropped those numbers to almost none in 1939. Chance (1966: 15) uncovered what actually happened. He states that the population numbers of traditional Iñupiat prey rebounded and thus they lost their interest in herding reindeer. The numbers of reindeer did steadily decline from 1939 until 1950, when only 50 remained and it was deemed worthless to start again (Sonnenfield 1959: 90). Reindeer herding was important to see the Iñupiat through this period. Sources point to the reindeer as being crucial to Iñupiat survival throughout the lean 1930’s when the trapping business collapsed (Brewster 2004: 31; Blackman 1989: 23; Chance 1966).

During this time, there were two major ways to earn a living in Barrow: trapping and reindeer. Most trapped fox and wolverine for furs (IHLC Commission 1980: 65). Trapping was a lucrative business until Black Friday and the start of the Great Depression, which cut into fur prices throughout the North Slope. Trapping became part of the yearly cycle. Trapping was often done in addition to other ventures such as reindeer herding, caribou hunting, or out on the ice hunting walrus or seal.
Trapping became increasingly economically important in the aftermath of World War I (Spencer 1976; Chance 1966; Schneider and Whitehead 1987). A boost in the US economy meant a boost in fur prices. Trapping changed some aspects of Iñupiat culture, as it is not a collective enterprise (Chance 1966: 16). The sparseness of trappable animals along the North Slope lends itself better to an individualistic process rather than a group process. One family, maybe two, could set traps in one location during trapping season, which was the winter (ibid.). Usually, Iñupiat people lived in groups in the winter, but trapping changed this for many families. The trapping business started to decline in the late 1920’s and the Iñupiat were forced once again to shift their economic focus. Nelson writes that during this time, the population of the villages plummeted seasonally, as people returned to a full-time subsistence-based economy (Nelson 1969).

Trapping and herding however created new challenges for traditional knowledge transmission practices. Missions and formal schooling had already changed much about Iñupiat knowledge transmission, but trapping and herding on the Christian religious schedule also caused a major problem with transmitting culture (Anderson and Eells 1935). Furthermore, the nature of a semi-nomadic life did not suit the directors of the mission-schools. For the mission schools to be effective, the directors realized that the schools needed steady attendance. A conflict of demand soon arose between centralization – school, church, store, and decentralization – trapping, herding, and other subsistence activities (IHLC Commission 1980: 67).
Kusiq's (Bodfish Sr. 1991) autobiography speaks about this time period and living a trapping and herding subsistence life. He grew up herding reindeer and trapping a variety of animals for furs and for food. While his people no longer whaled in the magnitudes that they previously did, they still whaled. They would send a couple herders at a time to the coast to participate in whaling crews so that they would retain those kinship ties and gain access to meat they otherwise would not be getting. In terms of education, Kusiq never attended school and he says that he was never really shown what to do. He learned from observing first, not asking questions, then attempting it himself. If he failed, he figured out why, by himself, then tried again and again until he figured it out. No one really ever showed him much except for setting a trap. Laying traps was one skill that Kusiq says was actually taught.

7.2 Loss of the qargi

During the early 1900’s subsistence patterns were upset and because of the language loss and the loss of the qargi, Iñupiat communities were beginning to lose their traditional stories, which were being increasingly replaced by European fairy and folk tales (Bodfish Jr. 1991: 92-3). The missionaries did not like the qargi and thought that they were houses of sin. The qargi were primarily a place for male cultural transmission, although much else took place there such as weapon building and maintenance (Chance 2002: 23, 45-47; Spencer 1976: 49-51). Throughout the winter, traditionally families would stay together and not
disperse until the summer (Jenness 1918; Nelson, 1969; Spencer 1976, Blackman 1989). But trapping changed that. Sadie Brower Neakok (Blackman 1989: 57) states that stories were always told during the wintertime. Because of the tensions between centralization and decentralization, families were both spread across the tundra and localized at Barrow. This, coupled with a loss of the qargi and the winter dispersal due to trapping, changed knowledge transmission patterns and centered them on the immediate family instead of an extended kin network.

Nelson points to cultural transmission being interrupted during this period as well (Nelson 1969: 384). I agree with his analysis but disagree with his reasoning (see Nelson 1969, Chapter 19). Nelson states that the main reason for cultural transmission changes is due to the availability of non-subsistence foods (Nelson 1969: 383). If this were true, the Iñupiat subsistence tradition would long be forgotten. Instead, it is thriving. Much of what follows in Nelson’s argument is a simplistic view of how culture is transmitted and how these mechanisms were affected by acculturation. Little, if any, agency is given to the Iñupiat.

Along with the destruction of the qargi as a place for cultural transmission, increases in schooling meant that effectively, the school was taking the place of the qargi (Cox 1991). This put the teaching into the hands of outsiders that were intent on converting the children instead of teaching them (Wexler 2006; Fienup-Riordan 1991). So not only did the Iñupiat lose their primary means of transmitting culture, but at the same time, it was replaced by a similar mechanism with assimilation as its goal. Hopson (1977: 1) points out that the
Iñupiat began to lose control of cultural transmission when they began to send their children to Euro-American educational institutions that were intent on assimilation through education. Euro-American style education in an Alaska bush context contributed to an awareness of Euro-American culture, but at the same time it fomented disrespect for family and culture within Iñupiat communities (Getches 1977: 28).

Iñupiat children were sent away to schools where they were given a generalized education with members of dozens of different Alaska Native groups. They were not allowed to speak their native languages, were not allowed to eat native foods, and they were not allowed to contribute to subsistence activities (Hensley 2009; Hopson 1977; Blackman 1989; Okakok 1989; Cox 1991). The students were stripped of their Iñupiat identities and culture. In its place was build an assimilationist, colonialist knowledge that was foreign and of which they were supposed to be a part, albeit a subordinate part. The schools operated very efficiently at removing any traces of Iñupiat identity. Hensley, an Iñupiat, states “the goal was to isolate children from their cultures, to cut them off from the ancient way of life and leave them stranded somewhere between the old world and the new” (Hensley 2009: 72). Effectively, this is what happened.

7.3 Educational Policy

In Chapter Five I briefly referred to the Organic Act of 1884 and the changes that it caused for Alaska Native Education. I would like to continue that
thread here and discuss later developments in federal indigenous educational policy until the middle of the 1960’s. Major policy changes during this period included the Nelson Act of 1905, the Uniform School Act of 1917, the 1928 Merriam Report, the 1934 Johnson O’Malley Act, the Alaska Statehood Act of 1959, and the Civil Rights Act of 1964.

The Nelson Act of 1905 created a legal and practical distinction between native and non-native education (Barnhardt 2001: 7; Darnell and Hoëm 1996; Cox 1991; Getches 1977). The Nelson Act allowed the creation of schools outside of incorporated towns, but only white children or civilized half-blood children were allowed to attend (Barnhardt 2001: 11). This initiated a dual system of education in Alaska that would remain in effect until the 1970’s. The Nelson Act compelled each town to have a school, whereas previously it was only permitted (Getches 1977: 7). Once established, these schools would be under the control of a local council. However, none of these locally-controlled schools ever reached into Iñupiat territory. In Alaska’s rural villages, where native and non-native students intermingled, there would be two schools: one for native students and one for non-native students, a fact that remained in most places until 1967 (Darnell and Hoëm 1996: 66). There were also differences in knowledge taught to the children; native students learned vocational topics instead of topics designed for college preparation (Cox 1991). By 1907, Sheldon Jackson was replaced, but not much changed. The policy of cultural conversion was still the apex of the BIA’s educational goals (Cox 1991: 80).
The next important piece of legislation to impact Alaska Native education is the Uniform School Act of 1917. This Act established a Territorial Department of Education (Rosensteil 1971: 191). This Alaska department was supposed to absorb control of all Alaska Native education, but in effect, in only began to control certain parts. The Territory set up a few boarding schools across the state, but they were only for native students and most were very far away from the homes of many Alaska Natives. In practical terms, it legally continued racial segregation in Alaskan education and kept Alaska Native education inferior to Alaska non-native education.

The 1928 Merriam Report was an extensive survey of Native American and Alaska Native social and economic conditions (Barnhardt 2001: 12). The report concluded that the status of indigenous education was paltry at best. It recommended:

...a major reformation of American Indian education with Indian involvement at all levels of the educational process and with specific recommendations that education be tied to communities, day schools extended, boarding schools reformed, Indian language and culture included in the development of the curriculum, and field services decentralized.\(^{16}\)

Sadly, most of these recommendations would not be realized until Iñupiat educational self-determination in the 1970's. However, it was an important moment for BIA education. The report stated that Alaska Natives needed to be educated for self-sufficiency. This was of paramount importance to the

\(^{16}\) From (Barnhardt 2001:12)
educational program, but not much really changed in terms of praxis; they continued to educate the Iñupiat as if they were inferior and assimilation was still a major goal. The important aspect is that this was pointed to by Alaska Native advocacy groups in the 1960’s and the 1970’s as an invaluable precedent for self-determination in education (Barnhardt 2001; Darnell and Hoëm 1996).

By the 1930’s the BIA began to believe that the Iñupiat and other Alaska Natives needed higher levels of school beyond the eighth grade level that they were currently teaching to. Prompted by the Merriam Report, the BIA began to focus on preparing leaders for the new Westernized communities (Cox 1991: 89). The BIA began to make high school education available to more students finally opening Mount Edgecumbe school in 1947 (Cox 1991: 90). This school was an all-Native Alaskan school focused on vocational training beyond the eighth grade. In essence, it was a vocational high school. There were few places for Alaskan Native students to go to high school at this time. It was either to Mount Edgecumbe in Alaska or to the Lower 48. Alaska Natives, including the Iñupiat, were still absolutely disbarred from attending high school with white students in Alaska as per the Nelson Act of 1905.

Many of these policies were informed by two important pieces of legislation passed in 1934. The Indian Reorganization and the Johnson O’Malley Act both had direct impacts on Alaska Native education that continue to resonate today. The Indian Reorganization Act was an attempt to right the economic destructions caused by Euro-American encroachment. Due to a loophole, it was not effective in Alaska and the Alaska Reorganization Act (ARA) was passed in
1936 (Barnhardt 2001: 13). The ARA gave Alaska Natives the choice to create reservations or to establish local governments. Since most Alaska groups were seasonally mobile, most chose the second option and these tribal councils remain to this day.

The Johnson O’Malley Act (JOMA) introduced a direct national process for Alaska Native education. What JOMA did was to allow the Bureau of Indian Affairs (BIA) to negotiate with the state of Alaska to devolve responsibility of Alaska Native education to the state itself, effectively devolving educational responsibility of Native Americans and Native Alaskans to state and local governments. In effect, it subsidized Native American and Native Alaskan education. However effective it might have been in the Lower 48, it did not take effect in Alaska until 1952 (Getches 1977: 11). It did serve to merge territorial/state schools and federally operated BIA schools under the guidance of the state. However, JOMA was not universally successful and in the mid 1950’s Alaska shifted its emphasis to statehood and political and bureaucratic support for JOMA waned (Barnhardt 2001: 14).

In 1959, when Alaska became a state, many of these policies changed. For the first time, the Iñupiat could have representation in decisions made about them (Darnell and Hoëm 1996). Under the territorial government, Native Alaskans were viewed as wards of the state, objects to be managed and civilized. The Alaska Statehood Act of 1959, in theory, eliminated educational discrimination based on race. In practice, this did not happen (Barnhardt 2001: 14). While it did eliminate the most harmful effects of the dual educational system,
the dual system continued. What it did do however, was to promise schooling for all children of the state, native and non-native alike. This should have ended educational segregation in Alaska, but in practice, it just guaranteed all children access to education. It did not state that that education had to be equal.

The Civil Rights Act of 1964 also changed education for the Iñupiat. Self-determination of Native Alaskans was put at the forefront of national policy on Native Alaskan education. In addition to the direct importance and focus on indigenous education as a national policy forwarded by President Lyndon Johnson, self-awareness and political power of indigenous peoples in the US was beginning to rise (Darnell and Hoëm 1996). In 1966, the Alaska Federation of Natives was formed and lobbies to this day for all Alaska Natives. It was not until the 1970’s that true self-determination in education came for the Iñupiat and they were able to begin to create their own knowledge in education.

7.4 Education and the Iñupiat

Education is the primary means of cultural transmission (Darnell and Hoëm 1996: 225). Whether this is informal education on the ice or formal education inside a school, culture is being transmitted. Education is difficult when you are learning different values at home than those taught at school (Hopson 1977; Okakok 1989: 409-411). This formal versus informal education, education in school contradicting home values, is and has always been a difficulty for Iñupiat children. Furthermore, it is difficult to transplant an educational system
from the Lower 48 into smaller villages in Alaska, which is exactly what was tried for the first three-quarters of a century in Arctic Alaska (Getches 1977: 4). In fact, attempting this may be detrimental to the culture and unforeseen short and long-term impacts. It is not only because the students come from a completely different epistemological and ontological tradition, but the schools are often small, more than one grade will be together in a classroom, and things that make sense in the Lower 48 simply might not make sense to someone that lives in the Arctic.

For example, the sun does not always rise in the east and set in the west every day of the year in the Arctic. Additionally, Iñupiat children are often taught from their kin group not to say anything unless they know, 100% that their answer is correct (Okakok 1989: 412). This is because of the dire ecological reality of a harsh Arctic environment. When the difference between an educated guess and knowing is death, it is valuable to keep quiet until you know for certain, beyond the shadow of a doubt, that what you are saying is 100% true (McBeath and Shepro 2007: 49-50).

Okakok (1989) describes how in the Iñupiat world, education means teaching a child how to survive and give them all of the tools necessary to do so. This includes Iñupiat traditional values as well as practical knowledge about the environment (Okakok 1989: 411-2). When considering Iñupiat education, it is important to keep in mind that a fundamental difference of epistemology lies between the words “schooling” and “education”. When it is said that someone is

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17 See Okakok (1989: 411) for an extended discussion on the cultural inapplicability of certain phenomena in an Arctic context.
“educated” in a Euro-American context, that person is referring to how many years of schooling that person had; but not so in the Iñupiat context. In their eyes, education is often done autodidactically, or self-taught.

Since traditional knowledge is often experiential knowledge, it is a fundamental shift in ontology to view “schooling” as “education”. Therefore to tell a student that they have to go to school to learn and that they will be graded on learning abstract items that are completely different from what and how they learn at home, produces an atmosphere that is detrimental not only to learning, but also to identity.

Walk into any Iñupiat school on the North Slope and there are posters of all twelve of the Iñupiat Core Values everywhere. Examples include a poster talking about the importance of anquniallauniq or hunting traditions and another referring to the Iñupiat value of nagliktuutiquagniq, or compassion. I can only surmise about this but having the posters may serve two purposes. First, it serves to reinforce Iñupiat values in Iñupiat children. Second, it serves to introduce the non-Iñupiat children in North Slope Borough schools to the Iñupiat core values. Now I would like to take a look at how this discussion played out in the middle of the 20th Century with the blending of traditional knowledge and science in Barrow.
7.5 Science and Traditional Knowledge at NARL

The last theme that I am going to discuss in this section is the interface between science and traditional knowledge in the context of the Naval Arctic Research Laboratory (NARL) and the construction and maintenance of the Distant Early Warning (DEW) Line, a string of 93 missile defense radars that stretched over 3,000 miles from the Western coast of Alaska to Greenland. With an increasing worry about petroleum security in the aftermath of World War I, the United States government sent petroleum prospectors to all corners of the United States looking for unknown oil reserves, ultimately culminating in the designation of Naval Petroleum Reserve No. 4 in 1923 (Schindler 2001: 29). This encompasses, to this day, the lands surrounding Barrow for hundreds of miles around, consisting of an area larger than the state of Indiana (ibid.). Developing this Petroleum Reserve did not produce jobs for the Iñupiat or expose any of them to scientific studies, but it did lay the groundwork for the construction of the Arctic Research Lab (ARL, later renamed NARL) in Barrow. The ARL was established by the Office of Naval Research (ONR) in 1947, concurrent with discussions about possible locations for the Distant Early Warning (DEW) line (Schindler 2001: 29). Both the ARL (later NARL) and the DEW Line are important because they created jobs for the Iñupiat and specifically jobs where they were exposed to science and scientists. This served to change their perceptions about the environment and the world and to influence their traditional knowledge.
Construction on the DEW Line began in 1954 (Lackenbauer et al. 2005: 9). Iñupiat men provided much of the hard labor for building the stations on their lands, as the men from the Lower 48 could not handle the harsh Arctic winters very well (Brewster 2004: 83; Lackenbauer et al. 2005). Much of the construction was done in the winter because they only had three years to build them and the Arctic winters are long in comparison to winters in lower latitudes.

In 1957, the (DEW) Line was completed however this did not spell the end for jobs related to the DEW Line. Extensive maintenance of the DEW Line facilities was still needed (Chance 1960). NARL was established to base and house North Slope petroleum prospectors. From the beginning however, it was
also used for scientific investigations. Dr. Laurence Irving of Swarthmore College was one of the first scientists at NARL and set a precedent of using Iñupiat labor and assistants. Irving wanted to study arctic acclimatization on the human body, and thus needed Iñupiat research assistants. (ibid: 30). By 1948, only one year after the opening of NARL, nine research projects were undertaken (ibid.). NARL had become a popular research destination.

The village of Barrow quickly allied itself with NARL and vice versa (Norton 2001: 1). The Iñupiat from Barrow were able to get paying jobs as laborers and research assistants, often helping scientists understand the region or the things that inhabited it. Iñupiat traditional knowledge became important to scientists new to the area and looking for help. Iñupiat knowledge was often considered to be important and having traditional knowledge, traditional ecological knowledge (TEK) was considered to be an important quality in a research assistant, a quality in which researchers from the Lower 48 did obviously not have and sorely needed. The Iñupiat got a variety of jobs from basic labor on projects and in NARL’s construction, to sharing knowledge about local phenomenon that eventually made careers (Brewster 2001: 24). However, the benefits of NARL went both ways. NARL employees received good pay and benefits, got to travel frequently, and got to learn about science (Brewster 2001: 25). This last point is important because it often changed knowledge and beliefs about how knowledge could be acquired and transmitted. The Iñupiat who worked at NARL learned how to synthesize science with their TEK and how to integrate that into their beliefs. NARL and the scientists that worked there also
served to foster a community-wide appreciation for science (Brewster 2001: 25; Brewster 2004: 39). It also helped the Iñupiat to recognize the importance and power of science in both political and practical contexts, and pass the knowledge of the importance of science down to their children, while at the same time retaining their own traditional knowledge.

This period was characterized by community engagement and growth. As NARL grew, so did Barrow, fueled by good jobs and fair wages. In addition, the work was seasonal, and did not negatively impact subsistence pursuits. Often researchers were (and are) only there in the summer, a time when the subsistence hunt was located in and around Barrow, not out on the ice or tundra. In NARL’s first 20 years, scientists worked very closely with the community, often hiring them for projects, to be guides, and to share their knowledge (Norton 2001: 2). This good relationship started to wane in the mid to late 1960’s as ‘Big Science’ started to change the research landscape. Scientists seemingly estranged the younger generations. Currently major strides are being taken to rekindle the relationship between local people and scientists, and this was a major purpose of my internship in Barrow in 2013. In terms of local scientists, they are treated and tolerated quite well. But an emic distinctions seems to exist between the in-and-out type of scientists and the scientists that work and live in Barrow. This appears to be an issue of reputation and reliability.
7.6 Conclusion

In a talk with another elder, I was told a story of how he gained employment at NARL in the 1950’s and how it contributed to how he viewed the world. He said it was like seeing the landscape through snow goggles, that it gives you a different point of view. I prodded him on just how he was able to integrate that with the knowledge he already had, and he said that it was different knowledge about the same subject and that it was easy to simply add this to the knowledge that he already had. He went on to describe the process of learning - how he learned as a boy in Barrow and how he believed that differs from how those scientists learned. He concluded to himself that it was not all that different, that he learned from listening to his elders and then incorporating that into his observations and that scientists really do the same thing.

The observations by this elder nicely encapsulate the changes that were taking place in the middle of the 20th century. Many changes were happening throughout the country and world at this time and many Iñupiat saw this as a chance to forward an agenda that they had been waiting decades to advance. The Land Claims process began in the middle of the 1960’s but did not culminate until 1971 with the signing of the Alaska Native Claims Settlement Act. Problematizing this movement was the discovery of oil at Prudhoe Bay in 1968 on traditionally-held Iñupiat lands. Together with a growing indigenous rights movement in the United States, it would set the Iñupiat and the rest of Native Alaskans down a path of a new era of self-determination and self-governance,
both of which contribute heavily to social-ecological system resilience, which I will discuss in the next section.
CHAPTER 8. KNOWLEDGE IN THE CONTEMPORARY PERIOD

Since the early-mid 1960s, several major events have impacted Iñupiat knowledge and culture. The first of these is the increasing presence of scientists and the integration of science with traditional ecological knowledge (TEK). This has been taking place since the founding of NARL, but has increased steadily since the 1960’s and now is more important than ever with Barrow being a center for scientific research on climate change (Wohlfforth 2004; PC 2013). With the discovery of oil at Prudhoe Bay in 1968, science and scientists have been progressively encroaching on Iñupiat knowledge and culture and the Iñupiat needed to learn how to manage this influx of knowledge.

The second major event is an increase in self-determination in many domains including governance, education, and health. With self-determination came a re-appropriation of knowledge; both of language and of Iñupiat knowledge in general. This self-determination is important because it is key to resilience. With the Iñupiat now being able to make decisions about themselves in terms of governance and education, they could reflexively look at their own practices and critique current and historical trends. In this way, the Iñupiat were able to mitigate certain external pressures and agentively negotiate them to
contribute to the adaptive capacity of their social-ecological system. Iñupiat organizations such as the Alaska Eskimo Whaling Commission (AEWC), the North Slope Borough School District (NSBSD), and the North Slope Borough Wildlife Division (Wildlife), have made TEK a priority in education and policy specifically focusing on its relationship with science. Two major events precipitated these changes. The first is the aforementioned discovery of oil at Prudhoe Bay, the largest oil field ever discovered in the Western Hemisphere. Prior to and concurrent with this was the Alaska Native land claims struggle. First legislated in 1971, the Alaska Native Claims Settlement Act (ANCSA) provided the Iñupiat with money and land to manage themselves, in turn providing self-determination on a scale not seen on the North Slope for a hundred years.

8.1 Prudhoe Bay and Land Claims

The discovery of oil at Prudhoe Bay in 1968 prompted many changes in the Iñupiat world (Thomas 1986; Brewster 2004: 16). Both the influx of outside workers and money would change the Iñupiat lifeways. By the end of 1969, the Trans-Alaska Pipeline had been proposed to take oil from Prudhoe Bay, on Alaska’s North Slope, to Valdez, on Alaska’s southern coast. But without a land settlement, the oil companies could not begin production and the state and federal governments could not begin to collect taxes. In addition, the Alaska Native population who asserted their rights to ownership of the land where the Prudhoe Bay field was discovered were also claiming Prudhoe Bay as theirs.
(Thomas 1986; Hensley 2009: 136-7). So, why couldn’t production begin at Prudhoe Bay?

In 1966, a loosely organized group of Alaska Natives held a meeting and formed the Alaska Federation of Natives (AFN) (Arnold 1978). Three recommendations were made to the Department of the Interior shortly after this meeting. The first was that, the State of Alaska’s land selection process given to them under the 1958 Statehood Act must be halted (ibid). The last two were about the land claims process itself and certain stipulations the Alaska Natives had. However, the first recommendation was followed by Secretary Stewart Udall, who halted all State of Alaska land selections in December of 1966, beginning the land freeze and the land claims process (Arnold 1978; Institute of Social, Economic and Government Research University of Alaska 1967). Secretary Udall said that he would lift the freeze when Alaska Native land claims became legislated and this would not be until 1971.

Udall’s land freeze put Alaska Native communities in a position of power (Hensley 2009: 136-7). The fledgling state of Alaska needed revenue, which was in the ground on the North Slope and needed extracting and transporting to southern ports for shipment to refineries in the Lower 48. Without land claims, this would not happen and the State of Alaska was losing money every single day.

The AFN was founded in part by two powerful Iñupiat: William (Iñgíaŋrûk) Hensley and Charlie (Etok) Edwardsen Jr (Hensley 2009; Gallagher 1974). In 1966, Hensley wrote a paper for a class at University of Alaska Fairbanks. The
paper outlined why Alaska Natives have a legal right to their land and outlined historical and legal reasons why land claims should be settled now (Hensley 1966). The paper’s major points were as follows (Hensley 1966):18

1. Alaska was purchased by the United States from Russia in 1867. At that time there were about 35,000 Alaska Natives living in Alaska, none of which were consulted about this purchase. The Treaty of Cession left Alaska Natives in a state of limbo. It left them without rights.

2. The Organic Act of 1884 provided protection for Alaska Native lands that they were actually using. This definition is difficult because most Alaska Native peoples are seasonally mobile and may not actually use a portion of their land for part of the year or maybe for years, but it is still their land.

3. The Native Allotment Act of 1906 provided up to 160 acres of land for each Alaskan Native man over the age of 21 and the head of a family. This land was to be passed down in the family in perpetuity.

4. An Act passed in 1926 provided Alaska Natives ownership of land that they occupied in native ‘townsites’. This was land that they were able to possess in addition to the 160 acres given to them by the Native Allotment Act of 1906.

5. The 1934 Indian Reorganization Act repealed the Allotment Acts (1906 and 1926) effectively taking land away from Alaska Natives. In return, Native Americans were given reservations. The reservations that were setup in Alaska differ from those in the Lower 48 that were often granted by treaty. Most importantly, Alaska reservations were not land given to Alaska Natives, but land that the United States recognized as temporarily in the hands of the Alaska Natives. The Act also provided that if the United States government decides to take land back from Alaska Natives, the Natives must be compensated.


18 See also Burch (1979) for a comprehensive overview of the causes that led to ANCSA and ANCSAs major provisions.
These were the legal reasons that Alaska Natives used in the mid to late 1960’s to fight the State of Alaska, the US Government, and Big Oil and argue that Alaska land belonged to Alaska Natives and had wrongly been appropriated throughout history, first by the Russians, and then by the US.

Why struggle for land claims rights? Leask (1984) points to three major reasons why Alaska Natives wanted land claims to be settled. First, they wanted to protect their land from unlawful encroachment by outside forces (ibid.). Most Alaska Native groups still rely heavily upon subsistence and protecting the land that these animals live on was the primary goal. Secondly, the State of Alaska, under the 1958 Statehood Act was beginning to select lands for itself. Many of these selections were on lands claimed by Alaskan Native groups, specifically ones that are heavily used both by Alaska Natives and by animals upon which they subsist. Lastly, Alaska Natives wanted compensation for lands already taken away from them. The United States government and the State of Alaska had already encroached on Alaska Native lands and Alaska Natives wanted compensation for this encroachment (Hensley 1966).

Hensley’s paper provided the legal basis from which Alaska Natives were to fight against the State of Alaska and the United States government. The AFN was a coalition of several regional Alaska Native groups, of which the Arctic Slope version was the Arctic Slope Native Association (ASNA) formed by Edwardsen in 1966 (Gallagher 1974; Blackman 1989; Chance 2002). Edwardsen organized the first ASNA meeting, in which those present immediately voted to lay claim to all land they believed to be theirs (Chance 2002: 149). These first
regional associations were highly unorganized grassroots organizations, but highly educated Alaska Natives began to immediately take over, recognizing the power they could wield with concerted Alaska Native support (ibid: 154).^{19}

8.2 The Alaska Native Claims Settlement Act

The outcome of this five-year battle was the Alaska Native Claims Settlement Act (ANCSA), signed into law by Richard Nixon on December 18, 1971 (Leask 1984; Burch 1979). ANCSA’s two major provisions were to provide Alaska Natives with 44,000,000 acres of land and $962,000,000 as compensation for lands lost (Leask 1984; Brewster 2004; Thomas 1986). Also important is that ANCSA distributes this money as shares in regional and village corporations. The distribution of land and money is outlined in Figure 7.1. Each Alaska Native has 100 shares in their regional corporation and village corporation and could not sell these shares until 1991. The corporations that were setup by ANCSA have had varied success. The Arctic Slope Regional Association (ASRC) for instance, the North Slope’s regional association, based primarily on oil profits, oil leases, and oil-field services, is perhaps the most profitable, successful, and politically powerful of them all (Chance 2002: 167-173; Wohlforth 2004: 100-101).

^{19} See Gallagher 1974 for an in-depth discussion of Etok Charlie Edwardsen Jr’s role in the land claims process.
One of the major problems with ANCSA was that it extinguished Alaska Native hunting and fishing rights. These rights were not reestablished until the Alaska National Interest Lands Conservation Act (ANILCA) of 1980 (McNabb 1992; Theriault 2005). Importantly, Iñupiat hunting and fishing did not decline during this time because this part of ANCSA was never really followed, but it was quickly recognized that this provision of ANCSA needed to be rectified. Three acts however, the Migratory Bird Treaty Act (MBTA), the Marine Mammal Protection Act of 1972 (MMPA), and the Endangered Species Act of 1973 (ESA), exempted Alaska Native subsistence hunters from their provisions (Theriault 2005: 41), allowing Alaska Natives to continue hunting subsistence animals.

Figure 8.1 Major Provisions of ANCSA (from Arnold 1978)
One of the major outcomes of the ANCSA was Iñupiat self-determination. I am however, primarily concerned with self-determination in education through the North Slope Borough School District (NSBSD) and other educational entities on the North Slope, but it is important to recognize the importance of the Alaska Eskimo Whaling Commission (AEWC) as well.\textsuperscript{20} In 1972, the North Slope Borough was founded upon Prudhoe Bay as a tax base (Brewster 2004: 16). The Borough encompasses over 90,000 square miles on Alaska’s North Slope. There are over 7,500 people on the North Slope in eight villages with no roads connecting them. Straight-line distance from Point Hope to Kaktovik, the North Slope’s two most disparate villages, is over 570 miles. The North Slope Borough is a large place with Barrow as the political, commercial, and financial hub (Brewster 2004).

8.3 Education After ANCSA

The Indian Education Act of 1972 provides special benefits for Native American education (Getches 1977). Foremost is the creation of an entitlement program that provides funding to the regions created under the Alaska Native Claims Settlement Act (ANCSA) based on the number of eligible students. The money was given directly to the school districts. In the case of the North Slope

\textsuperscript{20} Extensive discussions on the importance of the Alaska Eskimo Whaling Commission (AEWC) can be found in Gambell (1983) and Huntington (1992). This was an important moment both for Iñupiat science and for Iñupiat self-determination.
Borough, it is the North Slope Borough School District (NSBSD) that received this money. The 1975 Indian Self-Determination and Education Assistance Act had provisions that enhanced tribal governments’ self-determination in terms of services that were previously provided by the Bureau of Indian Affairs (ibid.). These include education, governance, health, and welfare. In terms of Alaska, villages and regional and village corporations are eligible for funding. This legislation came at a very important time, as Alaska Natives were growing weary of sending their children away from the villages to boarding schools (ibid.).

In 1972, a number of children sued the state of Alaska for the right to establish high schools in their own villages. Titled the Molly Hootch Case (Hootch v. Alaska State-Operated School System), after one of the litigants, the case was set to determine the future of Rural Alaska’s education. The plaintiffs charged that the state was denying education to many children by depriving them of equal opportunity for education (ibid). Boarding schools only took so many students and not all could go. Initially, the case was found in favor of the state of Alaska, but after several appeals, the case was reheard by the Alaska Supreme Court. The important part of the Hootch Case was that boarding schools were disproportionately for Native students and this left them vulnerable for attack under provisions that came out of Brown v Board of Education. In the end, no court decision was made, but an agreement was made between the defendant and the plaintiff.

The State of Alaska was to give the various villages $50 million in startup funds to create and maintain their own high schools, for which the boroughs were
ultimately responsible (Cotton 1984). Combined with funds from the Indian Education Act of 1972, this gave the North Slope Borough the startup funds it needed to create and maintain its own school district, which they do to this day. An important aspect of Alaska education is that it is not wholly controlled by the state itself (Kleinfeld 1992). The state has influence over the regional districts, but Alaska created Regional Education Attendance Areas (REAAs) in 1976 which divided the former state-controlled districts into regionally-controlled, autonomous districts (Kleinfeld 1992: 2). While run autonomously, these districts still have to comply with state mandates to receive state funding for programs.

8.3.1 The NSBSD and Ilisaġvik College

Along with Ilisaġvik College, the only tribal college in Alaska, the NSBSD is in charge of all education on the North Slope. Ilisaġvik College has an Associate’s Degree in Iñupiaq Studies, where students can choose from a variety of classes on Iñupiat language and culture including Inuit storytelling, Iñupiaq drum construction and use, Skin sewing, Iñupiaq songs, dance, and drumming, 4 levels of conversational Iñupiaq, 4 levels of Iñupiaq grammar, Iñupiaq History, Language, and culture, baleen art class, a carving class, and a field school type class on Iñupiaq land use values and resources. At the K-12 level, there are integrated curriculum components at each grade level integrating Iñupiat
traditional knowledge with Euro-American knowledge. This may take the form of lesson plans geared towards knowledge synthesis, elders and parents visiting and talking to the class about Iñupiat heritage and stories, or letting children get
school credit for subsistence activities. Simply because of self-determination in education the NSBSD is able to provide and integrate Iñupiat traditional knowledge into its curriculum at all levels.  

The NSBSD produces Strategic Plans every few years that state their goals and objectives for the upcoming block. Primarily, they recognize that learning is a life-long process and that they are responsible for just the “schooling” aspect of this learning experience (NSBSD Strategic Plan 2010-2015). Even while children are of school-age, they are still learning things outside of the school itself. They state this in their educational philosophy: “Education, a lifelong process, is the sum of learning acquired through interactions with one’s environment, family, community members, schools, and other institutions and agencies” (ibid: 3).

Their major goal is to incorporate Iñupiat knowledge into their core content so that they can produce good Iñupiat and good Americans at the same time. Their stated vision from the 2008-2009 Strategic Plan states: “The NSBSD will ensure parents and communities are involved in their children’s education. Through this collaboration every child will understand and treasure the values, culture, history and language of the Inupiat people and understand their

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21 Data from this paragraph on classes offered is from NSBSD website (www.NSBSD.org) and from the Ilisagvik College Website (www.ilisagvik.edu)

22 For information on the Iñupiat Core Values or the Iñupiaq Learning Framework, please visit the North Slope Borough School District Iñupiaq Education Website at http://www.nsbfd.org/domain/44. For specific curriculum information concerning the Iñupiat Core Values, visit http://www.nsbfd.org//site/Default.aspx?PageID=2767, where the Iñupiat have created extensive curriculum for each of the Core Values.
responsibility to their family and community” (NSBSD Strategic Plan 2008-2009). They also recognize the importance of a culturally sensitive calendar to work around traditional hunting practices, thus they seek to create a calendar in which every child can attend school every day of the year (ibid.).

8.3.2 Views on Education and Knowledge

In 1977, Eben Hopson (an Iñupiat) published a paper on the state of the North Slope Borough’s educational effectiveness and policies (Hopson 1977). He called for Iñupiat-centered education in all North Slope schools. His main point is that Iñupiat children cannot feel disconnected from their culture by the schools. Iñupiat children should be learning things that are important for Iñupiat to learn to be successful in life in Alaska. Hopson believed that Iñupiat children should not be learning things in schools which contradict their informal home education as this is harmful to their identity and character (Hopson 1977). Furthermore, Hopson states that the Iñupiat educational system needs to be bilingual and bicultural and the Iñupiaq language needs to be a major part of the curriculum.

One of Hopson’s main problems is with how the Iñupiaq language has been treated in the past (ibid.). Hopson says that the Iñupiaq language should be celebrated and integrated into the schools and children should not be ashamed because their culture and language is different than the teacher. Especially, the teachers need to understand that they might come from a different background and they need to help to create exceptional members of the Iñupiat community. It
seems as if, in theory, the NSBSD took this to heart. They do attempt to do all of these things but they also realize that Iñupiat children also need to be aware of things outside of the Iñupiat world and they need to be educated as both an American and an Iñupiat. This poses special problems in education, especially since children have to learn two different knowledge systems and the norms and values for each of those knowledge systems.

Dovetailing with these views are concepts that I referred to earlier in the paper, mainly Comaroff and Comaroff’s (1989) idea of the ‘colonization of consciousness’ and Wexler’s (2006) arguments about decontextualizing Iñupiat knowledge. In addition, Foucault’s (2003) views from a lecture in January of 1976 on subjugated knowledges, describes these assimilationist attempts. When referring to subjugated knowledge, Foucault means two things. First, are “historical contents that have been buried or masked” and second, “whole series of knowledges that have been disqualified as… hierarchically inferior knowledges… below the level of erudition or scientificity.” (Foucault 2003: 7) This is important in the Contemporary Period because Foucault also points to the last 15 years (preceding 1976) being important as the reappearance of these knowledges, the reappropriation of discursive power, and the recognition of subjugated knowledges as useful and important, have changed the discursive landscape to non-hierarchically include these knowledges (Foucault 2003: 7-8).

While Foucault is not referring to the Iñupiat situation specifically, it has been shown throughout this thesis that these idea fit perfectly with Foucault’s theoretical position, up to and including the Alaska Native fight for land claims in
the 1960’s and the importance of ANCSA for the reappropriation of Iñupiat knowledge and ways of life. Throughout post-contact history, Iñupiat knowledge has been characterized as inferior to Euro-American knowledge. While it may have been useful for certain projects, such as to help Yankee Whaling or NARL-based research projects, mostly it was dismissed as non-scientific folk-knowledge. The 1960’s saw a resurgence of Iñupiat self-determination and knowledge reappropriation along the lines of what Foucault is referring to with the contemporary non-hierarchical blending of knowledges.

In terms of what goals Iñupiat education should have, the integration of science and TEK is crucially important to the Iñupiat way of life (PC 2013a). Both in school and in the outside world, Iñupiat need to be well versed in both TEK and science to be able to defend themselves and their way of life from outsiders that are critical and militant against Iñupiat knowledge and ways of living (Wohlforth 2004; PC 2013a). The Iñupiat have adapted to their environment over a period of thousands of years, using TEK and science to do it. To Richard Nelson, the most important Iñupiat adaptation is the “nexus of mind and nature” (Nelson 2008: 76).

Iñupiat traditional knowledge is gathered by experience, handed down through stories, and reincorporated through experience. Wohlforth (2004: 182) points out that “the knowledge, the person, and the place [are] inseparable”. In this way, the Iñupiat have, over generations, accumulated longitudinal, empirical, localized data about their environment and incorporated that into their cultural fabric. But this information must always be reliable because the knowledge being
transmitted may mean life or death for someone on the tundra. Increasingly, Inupiat TEK is being tested by science and scientists critical of their knowledge and knowledge acquisition mechanics. This increase is due to the increase in the number of scientists in Barrow and an increase in their exposure to all forms of traditional knowledge.

In the Inupiat world, hearsay is often not transmitted, only solidly-based empirical observations from individuals is passed on to someone else. For many outsiders, Inupiat epistemological frames are incompatible with their understandings of certain phenomena. For example, Nelson (2008) points out a common Inupiat belief concerning polar bears. Based on generations of observations, the Inupiat have concluded that polar bears are left-handed. These seemed ridiculous to Nelson until he points out that they have been living with polar bears for their entire cultural memory (Nelson 2008: 76). Even young Inupiat are normally skeptical of things of this sort until they see it themselves. In this, it is much like any other sort of knowledge, “you won’t believe it until you see it” the saying goes.

Wohlforth’s Inupiat informants conclude that to learn, you must do (Wohlforth 2004: 181). “You cannot learn from a book. You can learn lessons that other people have experienced and this is valuable, but knowledge needs to be gained from personal experience, personally contextualized and personally meaningful. Until then, it is just abstract” (PC 2013b). The important point here is that Inupiat TEK is much like science. Many scientists realize this and have been incorporating Inupiat knowledge more and more into their own projects.
(Huntington 2011). Where mainstream Euro-American society tends to treat nature and culture separately, they are inextricably linked in the Iñupiat world (Nelson 2008: 77). The Iñupiat hunter learns from the animal and from the land as much as he learns from an elder. Knowledge systems can coexist in specific places, they are not always incompatible. I contend that Barrow is one of these places.

Knowledge for the Iñupiat is tied to their experiences and stories. These experiences and stories are the knowledge, individually attained, but always cognizant of the group and collective experience. Older Iñupiat are often reticent to share their knowledge with outsiders because the knowledge that they have and their methods for relaying that information are deeply personal and interwoven with experience (PC 2013b). An elder might not want to relive that moment with an outsider. I experienced this a few times when talking with elders as an intern. I would hit a touchy subject and sense that I needed to steer the conversation away from that topic. Later when talking, they might feel more comfortable and bring it back up to me.

Sometimes talking to people can become difficult for an outsider because of ways in which knowledge is transmitted differ. Asking a simple question like “what kinds of fish are in that lake?” for example, might be a three-hour conversation about everything that that person knows about the lake and every experience that person has had at that lake. That conversation is also likely to bring up other memories related to experiences that person had at that lake. In a Euro-American context, this is difficult to deal with, when all I was expecting,
based on my cultural norms and expectations, was a short response. This illustrates the differences in knowledge and knowledge construction. In Inupiat culture, an emphasis is placed on storytelling, on the story itself and not the results. American culture is results-driven, not caring too much for the actual story itself and instead looking forward to the outcome. This essential difference in epistemology illustrates the differences in how knowledge is transmitted and constructed.

These last two paragraphs are important because the Inupiat know that in order to retain self-determination in the 21st century, their traditional knowledge is needed. This knowledge also needs to be translated to those that make policy decisions. For Inupiat knowledge to be effective to scientists, it needs to be understood as important and grounded in the same methods that science in grounded upon. There is a growing need to ascertain the extent of the changing climate in the Arctic, with Barrow at the center of this battle (Wohlforth 2004; Chance 2002; McBeath and Shepro 2007; Huntington 2011). Scientific longitudinal data of the Arctic is severely lacking, but there is vast body of knowledge that has been collected over generations by the local people that has and will continue to prove useful for climate change (and other) scientists (Huntington 2011: 182). Inupiat knowledge should be valued because it is collected similarly to scientific knowledge (through observation of phenomena); however, as I have shown here it is not often considered the same because of science’s preference upon experimental, hypothesis-driven research (Huntington 2011: 183).
In terms of the current transmission and construction of traditional knowledge, the Iñupiat History, Language, and Culture Commission (IHLCC) holds yearly conferences on different aspects of Iñupiat traditional knowledge (Wohlforth 2004: 180). Seemingly taking the place of winter-long qargi knowledge discussions, these few days of learning are filled with elders’ stories of life and lessons that they have learned throughout their lives. These were recorded on both tape and video and are slowly being transcribed for the Iñupiat Heritage Center.

8.4 North Slope Borough Wildlife

The North Slope Borough Wildlife Division (Wildlife) is another important aspect of this re-appropriation of knowledge (Wohlforth 2004: 19). Wildlife is responsible for North Slope Science. Wildlife was instrumental in the Alaska Eskimo Whaling Commission’s battle against the International Whaling Commission over rights to hunt the bowhead whale in 1977-1978 and in another crisis in 1976, where the state of Alaska reported caribou population declining (Chance 2002: 176). In this latter instance, Alaska was threatening a moratorium on caribou hunting but the NSB Wildlife division, employing its own biologists and ecologists that blend traditional knowledge and indigenous methods with science and scientific methods, were able to show that in fact, there were many more caribou than previously reported (ibid.).
Wohlforth also discusses at length the role of Wildlife and their importance for North Slope knowledge. He says that Wildlife takes what the Iñupiat know and works to quantify that data so that outsiders will listen. The North Slope Borough’s Wildlife scientists are not doctoring data, but are listening to Iñupiat traditional knowledge and figuring out how to turn that into science that scientists and policy-makers will listen to.

Wildlife works with subsistence hunters to co-create knowledge of the animals, which can be used by scientists. Wohlforth (2004: 20) describes the hardships Wildlife faced when trying to count whales. Wildlife would set-up their gear and the ice would shift, breaking all of it. They would set-up again, same thing would happen. With Iñupiat input, they decided to put the hydrophones on whalers’ sleds. This way it always moved with the whalers and the whalers knew where the whales were going to be. Harry Brower Jr., the Iñupiat on the project and employed by Wildlife, realized how much more effective mobile hydrophones would be and how much better they would be protected.

Wildlife was instrumental in the 1970’s and 1980’s in determining the subsistence needs of the Iñupiat communities on the North Slope as well as producing accurate counts of bowhead whales (Wohlforth 2004: 21). These are both important because they inform how the IWC makes their block quotas for whale strikes and kills every few years. Wildlife also has employees that collect traditional knowledge. When a question is asked and scientists begin a project ascertaining the scientific answer to that question, there are individuals that seek out knowledgeable members of the community to contribute their knowledge to
create a knowledge synthesis that makes sense to the community and to the scientists (ibid: 24).

8.4.1 The IWC and AEWC in 1977-1978

The International Whaling Commission (IWC) was formed in 1946 with a focus on the regulation of commercial whaling activities (AEWC 2012). In the early 1970's as commercial whaling in other nations began to grow, Inupiat subsistence whaling came under scrutiny by the IWC. The IWC was worried about increasing strike numbers on bowhead whales coming from Alaska Native whalers (Huntington 1992). The 1970's saw an increase in the numbers of whales struck and this worried the IWC. The number of lost whales (those that were struck, but never found) rose from 10 in 1970 to 79 in 1977 (Gambell 1983: 467).

In 1977, the IWC took drastic measures, banning Alaska Eskimo whaling altogether (Huntington 1992: 120). This put the political power of the Inupiat to the test. The IWC was concerned about low bowhead whale estimates and put in place a moratorium on further bowhead hunting (Brewster 2004: 41; Blackman 1989: 208-9). According to Huntington (1992), the whalers themselves thought that the IWC was drastically underestimating the bowhead population and formed the Alaska Eskimo Whaling Commission (AEWC) to provide an Inupiat and Yupik a voice in IWC affairs.
The AEWC’s purpose was (and is) to ensure that bowhead hunting was conducted in sustainable, non-wasteful ways. In order to do this and make recommendations to the IWC about whaling quotas, they utilize both traditional knowledge and science. They listen to the whalers and they listen to the North Slope Borough Wildlife biologists to create a more holistic picture of what the bowheads are doing. In this instance especially, the blending of traditional knowledge and science served to lift the moratorium on Alaska Native whaling because it was shown that numbers that outside biologists were using as population estimates for bowheads were drastically low (Huntington 2002; Wohlforth 17-8; Brewster 2004: 41-2).

According to the AEWC itself (2012) the AEWC’s mission is “to safeguard the bowhead whale and its habitat and to support the whaling activities and culture of its member communities” (AEWC 2012: 2). They also outline their objectives (AEWC 2012: 2):

1. To preserve and enhance the marine resource of the bowhead whale, including its habitat.
2. To protect Eskimo subsistence whaling.
3. To protect and enhance Eskimo culture, traditions, and activities associated with bowhead whales and bowhead whaling.
4. To undertake research and educational activities related to bowhead whales.

As a result of this, there was no bowhead hunt in the spring of 1978, but by the fall, a quota system had been established for Alaska Native whalers. The quota however was based on faulty science and faulty bowhead population
numbers. The AEWC sought to rectify the science and show that the bowhead population was much higher than the IWC numbers (Huntington 1992: 120). Finally, in 1981, an agreement was reached by the United States National Oceanic and Atmospheric Administration (NOAA) and the AEWC in which NOAA delegated responsibility for Alaska Eskimo whaling to the AEWC. Today, the Barrow group of the AEWC is the Barrow Whaling Captain’s Association, who meet each spring to discuss whaling rules and regulations for the upcoming whaling season (Blackman 1989: 207).

8.5 STEM Camp and Climate Change

I attended a STEM camp on June 10th and 11th, 2013 designed for children from all over the North Slope Borough that blended traditional knowledge with science. This camp had children ages 11-13 representing every North Slope village, all were Iñupiat. One of the first examples that children investigated was the aurora borealis. By using culturally appropriate examples, such as the aurora borealis, wave and wind patterns around Barrow, and the behavior of the sun near the poles, the children were able to more easily relate to the science and seemed to learn it quickly.

The teachers (high school science teachers and college professors) would talk about scientific approaches in the mornings and in the afternoon, and they would bring in elders to talk about Iñupiat views on whatever it was that was the topic of the day. Topics ranged from the aurora borealis, to snow and ice, to
marine mammal behavior and biology. This unique blending of TEK and science showed the students (I among them) how TEK and science can work together to create a better knowledge. Also, the learning was mostly hands-on lab-type learning. The students did things instead of reading about them. They would listen to the elders, and then the elders would demonstrate certain behaviors or activities so that the kids could see them.

During the camp, elders also talked about why they have stories and why they pass on knowledge in that manner. One of the elders saw tradition as embodied in storytelling, in the method of transmitting culture. Another elder was very adamant about the children learning both the TEK and scientific aspects of whales and whaling. She was adamant because she said that their right to whale was constantly under attack from the outside world and they needed to know both TEK and science to be able to defend their cultural right to continue whaling. Of the couple dozen kids, only one had never been whaling before and most had been on a whaling boat when a whale had been struck. One of the major points that many of the elders talked about was that just because they use outsider technology does not mean that what they are doing is not subsistence. Sure they use guns to hunt caribou, why wouldn't they? Sure they use whaling bomb guns to hunt whales, they are easier to use, more accurate, and they lose less whales that way.

The elders also talked about climate change and how it is affecting Iñupiat culture. The elders said that the young people are growing up in a new world, and they are going to have to create their own knowledge about the Arctic
because the knowledge that the elders have is only useful so far. They said that
their own knowledge of animals and the climate is becoming obsolete because
as the climate changes, so do the animal behaviors. They said that the ice is
changing, the animals are changing, and their world is changing.

Whalers notice climate change every day out on the ice (Wohlfarth 2004: 25). When I talked with people, the normal response was “it is unpredictable.”
Whereas before a whaler could rely on a certain degree of everyday
unpredictability, climate change has created scenarios for which there is no
traditional knowledge, where the conditions are changing so much that there is
no cultural memory for those conditions. With the changing climate the ice is
changing, animals behaviors are changing, and new animals are encroaching on
their environment. The TEK that the elders hold is becoming superseded
because it does not include these changes (Huntington 2007; Sakakibara 2010;
Huntington 2011).

I also heard this at the Alaska Arctic Policy Commission meeting in Barrow
in June 2013. The Iñupiat as a group recognize that climate change is impacting
their ecosystem in uncertain ways. Whereas before the Arctic was rather
predictable with game running at certain times of the year, ice acting and reacting
in predictable ways, now, with the changing climate, there is no traditional
knowledge for situations that hunters are seeing on the ice and tundra. The
ecosystem is changing so fast and exponentially so, that when the effects of sea
ice albedo are taken into account, transmitting and constructing traditional
knowledge is becoming problematic. What the hunters are seeing does not
match with what they are being taught. Historical game routes are changing, the animals themselves are changing behavior as the climate changes more and more and new animals are starting to enter their environments.

8.6 Conclusion

Throughout this thesis, I have argued that knowledge is driven by the dual process of transmission and construction. Seeing these both as active and agentive processes, I demonstrate the ways in which Inupiat communities have been made vulnerable and persist as resilient actors in the maintenance of their knowledge system. Envisioning knowledge systems in this way is critical because of the rapid changes, both cultural and climatic, taking place on the North Slope.

My conceptualization of transmitter and constructor both as active agents is so important because of the rapid changes in environmental and cultural conditions now facing the Iñupiat as a people. The Iñupiat now, more than ever, need to be able to adapt to their changing conditions. The more prevalent force on the Iñupiat has always been Euro-American colonizing forces. Now, that fact is changing. Now, the problem is the climate. How can they adapt and change without losing their cultural traditions if the ecosystem, the ice, that maintains that ecosystem is disappearing?

If knowledge was simply transmitted to each generation, without agency on behalf of the learner, then knowledge would not be innovative and dynamic; a
knowledge system would not be able to adapt to changing conditions (like climate change) and survive. The view that I have adopted here concerning knowledge transmission and construction is adaptive in that the agency attributed to the learners contributes to overall social-ecological system resilience over time.\(^{23}\) Agency in adaptation is inherent and allows the knowledge system to adjust. Every day, children are learning new things about their environment that are both informed by what they have learned growing up in a hybridized Iñupiat-American society and by what they are learning from their own experiences. Young Iñupiat incorporate what they are told with what they observe. If the data doesn’t match, it is discarded and new traditional knowledge is created. If it does match, then that knowledge is maintained. But the body of traditional knowledge is dynamic and adaptive. With each generation comes a new test of its efficacy. The problem now feared by the Iñupiat in Barrow is whether their traditional knowledge can maintain its practicality in the next few generations or whether the climate is changing too much for it to remain useful.

\(^{23}\) For a more in-depth discussion on social-ecological system resilience, please refer to Folke (2006); Berkes et al. (1998); Berkes et al. (2003); Adger et al. (2005); and Fazey et al. (2007).
CHAPTER 9. DISCUSSION AND CONCLUSION

In this thesis, I set out to investigate a few major questions. First, I wanted to analyze how Inupiat knowledge has changed through time. I further sought to investigate how Inupiat knowledge transmission and construction has changed and how it has stayed the same. I also examined the internal and external factors drove these changes and explored how these changes have been realized in the Inupiat educational system.

In order to do so, I reviewed the literature on knowledge: what can be considered to be knowledge and how does one gain knowledge. I showed that each person constructs nature within their own mind and that this construction is shaped by personal experience and personal knowledge. It is also important to recognize that knowledge is never objective, it is always contextual because it is locally constructed within certain situations and contexts. I adopt the position that knowledge cannot be objective because it is formed from an individual lens that shapes how and what each individual sees. This lens taints objectivity and thus knowledge is subjectively gained and incorporated into our tainted reflection of nature. Thus knowledge (singular) cannot exist; knowledges (plural) exist. I then showed how the existing literature and existing models were lacking an extensive treatment of the discussion of agency in the learner. Previous studies
of knowledge transmission processes have either focused on the transmission (teaching) process or the construction (learning) process.

My position on this is clear: to truly discover the underlying processes of how knowledge and knowledge transmission is changing over time, both actors, the teachers and the learners and their associated processes, need to be concurrently investigated. Because knowledge itself is an individual construction, and knowledge is agentively worked upon by the mind, knowledge construction must be an individual process, and cognized as an active, constant negotiation by the transmitter and the constructor. Also important is that during this process, the roles of transmitter and constructor are fluid. Ingold (2000) points out how two people’s intersecting lines of life creates a node of learning and teaching. At these nodes, each person is both the transmitter and the constructor. Never is an interaction truly a one-way process.

This position was important to establish in order to describe how these arguments apply to Iñupiat livelihoods, their knowledge, their knowledge transmission and construction processes, and how and why these have changed over time. To easier cognize Iñupiat post-contact history, I constructed four etic periods, the Early Contact Period, the Late Contact Period, the Mid-1900’s, and the Contemporary Period. These periods are bookended by major historical events. For example William Hensley and Eben Hopson both point to schooling and missionization as being two major events that changed the Iñupiat. Sadie Brower Neakok (in Blackman 1989) talks about how NARL was important to the
Iñupiat. Harry Brower Sr. (in Brewster 2004) refers to the DEW Line, reindeer, Prudhoe Bay, and ANCSA as changing the Iñupiat as well.

What I show is how initially, the Iñupiat had exclusive self-determination, but with the introduction of assimilationist policies in the form of missionization and schooling, this changed. Following the discovery of oil at Prudhoe Bay and the passing of ANCSA, they regained self-determination. In the Early Contact Period, the Iñupiat peoples were only slightly affected by outsiders, both other indigenous groups and Euro-Americans, due to the infrequency of contact and lack of permanent Euro-American settlement. In the Late Contact period, this changes dramatically as commercial Yankee whaling in Iñupiat waters rises and fades, missions come to Iñupiat territory, and the Iñupiat are required to start sending their children to Euro-American schools. This period also sees the first permanent white settlement.

The Mid-1900’s is probably the most difficult time for the Iñupiat in recent history. In this period, Iñupiat children were required to be educated in Euro-American schools, but this education was inferior to mainstream education, and was required to be by law. Towards the end of this period though, conditions for the Iñupiat were getting better and self-determination efforts were starting to take shape. NARL and the DEW Line created jobs and subsistence animal populations were beginning to rebound.

The Contemporary Period is where the Iñupiat recover self-determination and become politically and economically powerful. The creation of the Arctic Slope Native Association (ASNA) and their membership with the new Alaska
Federation of Natives (AFN) in 1966, began the land claims process that would eventually make the Iñupiat one of the most economically and politically powerful Alaska Native groups. Two major events, the discovery and subsequent development of the Prudhoe Bay oil field and the signing of the Alaska Native Claims Settlement Act (ANCSA) define this period. Taking place in 1968 and 1971 respectively, they allowed the Iñupiat to develop power by giving them money, a solid tax base, and self-determination to manage the North Slope Borough how they saw fit.

Along with this political power came the self-determination of education, which allowed the North Slope Borough to manage the education of its inhabitants. Instead of inferior education governed by the United States government or the State of Alaska, the North Slope Borough School District (NSBSD) sets educational policy for its students. Along with Ilisaġvik College, the only tribal college in Alaska, the NSBSD can guide the education of the North Slope without outside interference and compliment this with practices at home.

9.1 Findings

The contemporary knowledge system of the Iñupiat can be characterized as a hybrid knowledge system that blends Iñupiat and outsiders knowledges together without diluting local cosmologies and epistemologies. This characterization stems from their adaptive capacity for learning new ideas and new ways to function with those new ideas. The harshness of their environment
has facilitated this aspect of their social-ecological system so that Iñupiat culture and cultural traits are able to bend and not break (Berkes and Jolly 2001: 2). With all of the changes that I described in the sections above, with all of the assimilationist efforts, the Iñupiat are still the Iñupiat.

The Iñupiat hybridized knowledge system is interesting to decipher and important for understanding how the Iñupiat are able to remain inside, yet outside of mainstream American culture. In Barrow, traditional knowledge blends with science to produce hybridized knowledge that is locally produced and locally meaningful. In instances I have described throughout this thesis including the IWC and AEWC battle, the instance with Harry Brower Jr and the hydrophones, the STEM Camp, and North Slope Borough Wildlife itself, science has been blended with traditional knowledge to create a more complete understanding of phenomena in and around Barrow.

I also attended a summer camp operated by the US Fish and Wildlife Service (USFWS) that blended science and traditional knowledge and was yet another example that pointed to different forms of hybridizing knowledge. It was intended to teach Iñupiat children about the scientific aspects of their traditional practices. The biologist taught the children about the different animals, about US and Alaska government regulation, but also told them of the importance of the local point of view. The Iñupiat hunter taught them that local point of view but also talked about the importance of the biological aspects of subsistence. The biologist and the Iñupiat hunter did not overtly contradict each other, but there were moments of tension for instance when talking about the future of the
bowhead, the 1961 “duck-in”, or subsisting on other marine mammals. The “duck-in” was a citywide protest against policies aimed at protecting endangered ducks, but in practice, disallowed hunters from hunting ducks in Barrow.

All of these examples illustrate how the Iñupiat have incorporated science and scientific knowledge into their knowledge system. I believe that this adaptive capacity is what makes the Iñupiat social-ecological system so resilient. Folke et al. (2003) forward four principles that could possibly build adaptive capacity in a social-ecological system:

1. Learning to live with change and uncertainty.
2. Nurturing diversity for reorganization and renewal.
3. Combining different types of knowledge and learning.
4. Creating opportunity for self-organization.

Each one of these fits the contemporary Iñupiat social-ecological system perfectly. The North Slope is inherently dynamic and constantly changing. The Iñupiat, for much of their post-contact history have lived and operated under the auspices of the US Government with shifting policies and goals, also increasing adaptive capacity. Since the Late Contact Period, they have been incorporating different knowledges into their knowledge system. Finally, since the passage of ANCSA, they have self-determination and self-organization.

Instead of being rigid, their knowledge system is permeable and accepting of outside knowledge. But knowledge is never accepted without scrutiny. Being agentive in knowledge construction, the Iñupiat still need to test the efficacy of

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knowledge that purports to be different than what is currently available. If it is useful, it is adapted, if it is not, it is thrown out.

The Iñupiat as a group (not homogenously so) accept climate change as man-made and detrimental to their ecosystem (PC 2013a). In a meeting of the Alaska Arctic Policy Commission meeting in Barrow in 2013, I observed many Iñupiat leaders talking to US and Alaska politicians about how climate change was affecting their communities. The Iñupiat in this community recognize the importance of science and scientists for the maintenance of their ecosystem in the future, while still maintaining local knowledge systems.

The Iñupiat also believe however, that Iñupiat are the Arctic experts. They have been living there for thousands of years and have accumulated memory and knowledge in that time. One of the major themes across all of the speakers was the need to blend traditional knowledge with science, to get the local point of view on phenomena because without it, scientists will be ignoring vital data and the science is not going to be meaningful. The other major theme from this meeting was subsistence food security. Almost every single speaker talked about the importance of subsistence foods to the Iñupiat and how they were concerned about the behaviors and lives of the animals changing as well.

9.2 Future Directions

Looking forward, extensive research needs to be conducted on what the Iñupiat actually want. The community is very diverse, has a plethora of
stakeholders, and is complicated. This makes research and ascertaining needs and wants difficult. Nevertheless, the NSBSD needs to know what the community wants and needs to truly be effective. From asking around in Barrow during my internship, it is obvious that the community and the NSBSD somehow feel disconnected. The NSBSD wants community input and the community wants to give their input, but they do not know how to go about it.

The NSBSD student population is very diverse and this makes specific Iñupiat education difficult. Education is also difficult because there are differing opinions on what the goals of education should be, even within the Iñupiat community. Some people I spoke with said they wanted their children to learn about Iñupiat culture and their heritage in a hands-on way, by doing. On the other hand, there were people I spoke with who said that they were raising their children with knowledge of Iñupiat heritage, but not teaching them hands-on Iñupiat culture. They wanted their children to graduate from high school, go to college in the Lower 48 and never come back. They said that there were so many more opportunities for their children there.

There is a need for further research surrounding the realm of interacting spheres of education in Barrow. If research shows that people want more integration between the NSBSD and out-of-school education, further mixing of the two spheres of in-school and out-of-school education needs to happen. If it is what is wanted, TEK and TEK learning experiences need to be further integrated into the classroom and further opportunities for the classroom to move outside the school building need to be realized. Research on how to further integrate
educational spheres and the possible effects this integration might have on the community needs to be conducted.

In terms of science and scientists, scientists need to interact more with the community in the realms of outreach and engagement and learning about the people with which they work. At the same time however, the community needs to interact more with scientists. Housing scientists at NARL is good for them because they are closer to their labs, but cognitively creates a segregated community both spatially and in terms of how scientists and the community view each other. So many researchers come and go from NARL and the BARC (the new UIC research facility at NARL) that scientists and the community rarely interact or care about each other. I interned with a group called the Barrow Arctic Science Consortium (BASC) that facilitates Saturday research talks for the community. The problem is that most of the people at these talks are scientists, not Iñupiat. At talks that I went to that were not BASC talks, still most of the people were not Iñupiat. One recommendation that I would make would be to have Saturday talks for scientists about the Iñupiat and about the community. I did not see nor hear of any of these happening for scientists conducting research in Barrow and I think that it would go a long way to helping cross-cultural awareness and competency.

Research needs to be piloted on outreach in Barrow and how science and scientists can have more community involvement and how scientists can better engage the community. There are individuals who exist in the borderlands of science and TEK, who are both scientist and Iñupiat. These individuals could be
enlisted to develop a better interaction between the community and scientists. As the climate changes, Barrow will see an increase in scientists trying to study climate and weather. Local people and scientists need to be able to communicate with each other and not just at the policy level. I believe this will be difficult because of both the transience of researchers in Barrow and the community’s ambivalence towards researchers. The people that I talked with in Barrow acknowledged that the researchers were trying to help the local situation, but they were also wary of outsiders and had a strong distaste for them. Some of this stemmed from the fact that many scientists seemed culturally unconscious. The most successful researchers are those that work with the community and engage with the local people. I believe increasing the cultural awareness of scientists and discovering what the local people expect of the scientists will help to dismantle the divide between the disparate communities and create a better environment for knowledge synthesis in Barrow, a frontier for climate change research and knowledge integration.
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APPENDIX

Thematic Resources

ANCSA/Educational Law/Law - Other

Hensley, William Iġġiągruk. 1966. What Rights to Land Have the Alaska Natives?: The Primary Question. Fairbanks, AK. University of Alaska at Fairbanks


**Arctic Resources – General Arctic**


Cultural Theory


**Ecology/Ecosystems/Subsistence/Climate Change**


**Education Specific Resources**


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**Explorer’s Reports**

Beechey, Frederick William. 1831. *Narrative of a Voyage to the Pacific and Beering’s Strait to Cooperate with the Polar Expeditions: Performed in His Majesty’s Ship Blossom, Under the Command of Capt. F. W. Beechey, in the Years 1825, 1826, 1827, and 1828*. London: Nichols and Son


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Simpson, John. 1855. “Observations on the Western Eskimo, and the Country They Inhabit; from Notes Taken During Two Years at Point Barrow”. In *Parliamentary Reports, 1855*. London

**Iñupiat Specific Ethnography/History**


Hensley, William Iġġiağruk. 1966. What Rights to Land Have the Alaska Natives?: The Primary Question. Fairbanks, AK. University of Alaska at Fairbanks


**Indigenous Knowledge, Traditional Knowledge, Local Knowledge, TEK**


Damour, Melanie. 2012. Special Issue on Traditional Knowledge [Special issue]. BOEM Ocean Science, 9(2)


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Knowledge Transmission and Construction


Methods

Daly, Martin. 1982. "Some Caveats about Cultural Transmission Models". Human Ecology, 10(3): 401-408
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**Oral Histories/ Iñupiat Autobiographies**


