CHAPTER 1. INTRODUCTION

My earliest experience with the Inupiat of northern Alaska dates back to the spring and summer months of 1954. I had traveled to Barrow to follow up reports that the U. S. Navy would be terminating their petroleum exploration program in Petroleum Reserve #4, which included much of northwest Alaska within its boundaries. This Navy program was managed by ARCON, the Arctic Contractors, from facilities located a few miles to the north of Barrow and the adjoining village of Browerville, largely Inupiat communities along the northwest coast of arctic Alaska.

My particular interest was in the Inupiat connection with ARCON: specifically, how would the Inupiat workers employed by ARCON in various phases of the oil exploration and related programs deal with the projected loss of the high wages they had been earning. I assumed that there were no expectations of equivalent sources of income to take the place of the monies that the Inupiat had been earning directly or indirectly from the Navy.

Unfortunately, I did too little to elicit reactions from individual Inupiat about the pending termination of the Navy programs, in the context of those changes in subsistence that had been made possible by wage labor incomes. Nor did I seek out examples of Inupiat who had resisted any major change away from traditional subsistence activities. But it was obvious that those who did want to remain active in subsistence were able to do so,
whatever their motivation. I do not recall that any employed Inupiat expressed concern about the costs to tradition that had resulted from their employment.

My concern, however, was whether the Inupiat who had been committed to employment by ARCON would be able or willing to return to the subsistence hunting and fishing that had sustained them in earlier years, which was only occasionally supplemented by money income. For example, Inupiat had earlier earned money from their involvement in commercial whaling; for the major whaling communities, this dated back to the late 19th and early 20th centuries. There had also been income from trapping activities and the fur trade that developed subsequent to the end of commercial whaling. And Inupiat clearly also benefitted from work with the reindeer herds that had initially been imported into Alaska from Siberia. A commercial reindeer economy flourished -- off and on -- as a source of marketable meat and skins; but reindeer numbers declined seriously, and by the mid-20th century, domestic reindeer herds were lost as a source either of subsistence goods or income.

Did income from the U. S. Navy's subsidized petroleum development program constitute another short-lived diversion from traditional subsistence living, of the sort that made it easier for Inupiat families to feel more secure in their northern Alaskan communities, based on subsistence activities that were always to some degree unpredictable? Or did the high wages of the 1940s and early 1950s produce the kind of wide-ranging change in living conditions that made it unlikely that there would an easy return to any more traditional life style were such incomes cease to be available?

During my study, I learned much about the changes in Inupiat subsistence practices and subsistence technologies that had occurred over the previous century of time; but
attempting to predict from these the possible future changes in subsistence activity proved to be an exercise in futility, given the changes that continued to occur. After the Navy terminated their petroleum exploration program, alternative sources of employment soon became available, including work on the government's "Distant Early Warning System" (DEW-line). And if the Navy gave up on finding a viable source of petroleum in Pet-4, private sectors of the petroleum industry continued to engage in their own exploration activities; and this led, ultimately, to the discovery of the rich oil reserves in the Prudhoe Bay region in the 1960s, and the reemployment of many Inupiat for a wide variety of well-paying jobs related to the oil developments that followed.

Additional funds and jobs became available for whole communities of Inupiat after native land claim issues were resolved with state and federal governments. This included not only Barrow and Wainwright, the two major population centers in the region, but also newly developed North Slope Borough communities at Atqasuk on the Meade River, Kaktovik on Alaska's arctic coast east of Barrow, and Pt. Lay on the Chukchi Sea coast southwest of Wainwright; also Nuiqsut on the flood plain near the mouth of the Colville River; and also a community of inland Eskimo, the Nunamiut, more recently settled at Anaktuvuk Pass on the northern margin of the Brooks Range. Each of these communities is rich in resources sufficient to provide for the subsistence needs of their populations, and probably with enough left over to sustain an active level of trading with Inupiat in other communities.

My point is that -- retrospectively -- there was apparently no need to be concerned about the future prospects of the Inupiat populations of these areas; they could return to a traditional subsistence economy if this became necessary, or move elsewhere to obtain
alternative resources or means for earning incomes to provide for their survival; and there was also the prospect for moving out of the arctic and seeking wage-paying positions elsewhere in Alaska or beyond. Government subsidies to families and communities also continued, and were often enough to sustain many who were not able or willing to move elsewhere during difficult times.

Evolving interests. From the perspective of what I was able to learn about Inupiat subsistence activities, including the subsistence technologies that had evolved over time, I found much to stimulate my thinking about the Inupiat adaptation to the environment of northern Alaska, even to include the changes to be expected should the current period of "global warming" continue. But it has been more recent work outside of an arctic setting, on travel behaviors and related spatial sensitivities and skills, that led me to return to the arctic, some thirty years after my initial studies there, to consider the distinctive spatial skills and sensitivities of Inupiat in the three villages within which I had worked previously, as a critical component of the Inupiat adaptation to the subsistence environments of arctic Alaska that I had not previously considered.

Spatial skills develop during childhood, and differently among different populations in different spatial settings, ranging from the more structured cities of the urban portions of this country, to the more open and minimally structured of wilderness areas, which are becoming, by their scarcity, the equivalent of endangered environments. As I have suggested, this is an interest -- the distribution and quality of travel skills and related spatial sensitivities -- that would again get me involved in studying Inupiat communities, in the context of changing travel habits in northern Alaska, which is what this book is about.
The changes in travel habits that I deal with relate more to individuals -- their abilities and skills and adjustments to the changed demands of environment for travel -- than to the communities of travelers less demanding of travel for purposes of subsistence. Here, the travel environment is viewed in a pragmatic sense: how did individuals differ from each other in their sensitivities and training, which could be quite different from the way spatial sensitivities and related travel skills developed traditionally, when dog teams were the major source of power for subsistence travel.

Snow-machines were introduced into Alaska and Inupiat villages in the 1960s, and quickly replaced dog teams as the preferred mode of transportation, not only in and around villages, but, more critically, for long-distance and subsistence-oriented travel in the largely roadless areas of the North Slope. My purpose in this book is to focus on the changing character of Inupiat (Eskimo) travel behaviors that followed, including also the changing significance of the travel environments, as influenced also by the expanded subsistence resources and "spatial" skills that directed such behaviors. The spatial skills include what geographers refer to as geographic orientation and wayfinding.

Geographic orientation implies sensitivity to direction: that the traveler can determine where it is that he needs to travel to get to hunting areas or fishing camps or other places; and implies that he is able to maintain the necessary orientation to these places even in the absence of known trails for him to follow. It is implicit that the hunter knows how to establish or maintain his orientation and sense of location well enough to return back home or to camp when his hunting is completed.

Wayfinding can also involve sensitivity to direction, but it is more likely to imply also awareness of features *en route* to some destination, as is required, for example, for
"piloting" boats along an intricate coastline, where reefs and rock hazards, and -- as in delta areas -- variability in depth of water courses makes it difficult to estimate appropriate speed and direction to follow.

Orientation and wayfinding skills are also helped along by mental maps that individuals create or develop concerning the content of certain travel spaces, based on their memory of prior personal experiences of these spaces, or from the experiences that others communicate in terms clear enough to infer locations and the character of features in spaces not otherwise known.

I want to determine the extent to which recent changes in Inupiat subsistence activities and travel technology might have put these traditional spatial skills -- involving geographic orientation, wayfinding, and mental mapping -- at risk of being forgotten or lost more permanently from the inventory of spatial skills accessible to those who still sense the potential for subsistence travel in any spaces that might become available for such purposes.

I have tried to avoid explaining the changes that have occurred in travel behaviors as simply an Inupiat problem, since the cause of these changes might be either environmental or more personal in nature. To consider only "traditional" wayfinding techniques in the Inupiat inventory of spatial skills, for example, would tend to ignore certain kinds of non-traditional practices that many Inupiat have adopted over recent decades. At least I will try to get the reader to understand the character of what has changed, the consequences of the losses from traditional practices, and the gains that appear to have resulted from adoption of the new techniques and technologies of orientation and wayfinding that he may have learned.
The literature on Inupiat travel practices that I have had access to has been useful, but it is limited in its coverage. For this reason, I have preferred to select much of my data on change in travel practices from the approximately fifty (50) interviews that I carried out during 1991 in Barrow, Wainwright, and Anaktuvuk Pass. These have allowed me to consider the impacts of changes in wayfinding knowledge available to Inupiat who were active still in subsistence travel at the time of their interview. For those beyond the age for such travel, who no longer travel regularly or at all because of health or employment, I have restricted my interviews to those who could still personally recall their subsistence travel experiences, particularly during the transition period from dog-team travel to snow-machines. What was it that changed and what remained essentially the same in expectations for their travel?

I have emphasized not only subsistence practices that are normally considered the prime motivation for travel, but also travel in open spaces in the north Alaskan arctic, regardless of motivation. For example, what did it mean for the Inupiat to have improved access to an expanded travel space, such as became possible with the snow machine? Did this affect the use of particular orientation and wayfinding techniques that were common for those using dog teams led by leaders known to be sensitive to the travel environment in ways that human travelers were not?

In other words, did the change to use of snow machines make the Inupiat traveler not only a faster traveler but also a better navigator and wayfinder, when -- in the absence of dogs -- he found himself more dependent on his own visual sensitivities and other wayfinding talents? Was he able to recall the character of landscapes and routes that he might have been less sensitive to with dogs to help him in guidance? Did he become, as a
consequence of this self-dependence, a better way-finder? Or did the change away from dogs teams and to snowmobiles have the opposite effect, making him less effective as navigator and wayfinder, putting him more at risk for disorientation under conditions that he normally would have been able to depend on his dogs for guidance?

Mostly, I have focused on the travel behaviors of individuals, whose travel behaviors could vary from the more to less traditional in nature. I found this open-ended approach necessary in order to do justice size the decisions of individual wayfinders, which I hoped would do justice to the techniques that contemporary Inupiat had come to apply to their wayfinding, whether or not these techniques were based on Inupiat tradition, or instead on alternate traditions that had been adopted because of their usefulness; and also, regardless of the choices that individual wayfinders who were also innovators of technique found to suit their travel needs. At issue was whether preferred non-traditional techniques were simply those that were easier to learn, or, instead, easier to apply to the conditions under which most Inupiat were travelling.

In effect, this book will describe how individual Inupiat in the three study communities – Barrow, Wainwright, and Anaktuvuk Pass – explained the essentials of their wayfinding craft to me, how they maintained their orientation in roadless areas under almost all of the conditions that are usual for such. I do not intend to suggest that Inupiat never become disoriented or lost; but when either occurs it is often under unusual conditions, about which the Inupiat traveler will seek understanding so that it might not recur.

The Inupiat travel I will be considering is mostly surface travel on the tundra of the arctic coastal plain and adjoining uplands, and both inland and along the coasts south and
east of Barrow. When rivers are used as the primary source of guidance, I will describe the
techniques that have allowed the Inupiat to guide themselves along these rivers with the
accuracy that complex fluvial features may demand at all seasons. Finally, I will also try to
incorporate what I learned about Inupiat travel on the sea ice to what other authors have
already dealt with in greater detail than was feasible for me in this study.

_Beyond my interest in identifying specific travel techniques._ I will also attempt to
identify what it is that is more and less consistent about Inupiat wayfinding skills, more
particularly the abilities and disabilities that characterize the travel behaviors of different
individuals and groups of Inupiat in the environments they choose for their travel. This is
also part of what I consider my professional interest as a geographer: to understand the kind
of variability that is almost a universal component of most travel behavior. It is mainly in
environmental settings as extreme as the arctic that such differences in spatial skills may
come to also influence survival.

To conclude this introduction, it will or should be apparent that not all Inupiat
engage in the same kinds of travel behavior, nor do they perform their wayfinding and
orienting tasks equally well. There are differences between young Inupiat and their
parents, including the elders who have experienced travel with a more traditional
technology, and whose primary motivation was the satisfaction of subsistence needs. There
are also differences in the travel behaviors to be found in different Inupiat communities;
these are at least in part the result of having different subsistence orientations, and the need
to satisfy these in travel environments that may be differently demanding of spatial
sensitivities specific to them. Implicit is the existence of variability in travel habits and
skills across communities, and, increasingly, also within individual communities.
The Inupiat I have worked with in this study are primarily residents of Barrow, Wainwright, and Anaktuvuk Pass. Most of my information comes from interviews with individuals at these villages, most of which had been tape-recorded in the field. These include twenty-one (21) interviews from Barrow, fifteen (15) from Wainwright, and twelve (12) from Anaktuvuk Pass.

Following this introductory chapter, I will introduce readers to XXX. Since my 1991 visit to Barrow, I have had many long distance discussions with him on Inupiat travel behavior, including much that was based on his own personal experiences; he provides a good example of the kinds of training and motivation that contribute to Inupiat success in travel. XXX has lived all of his life in the Barrow area. He has an ability to travel cross-country to places inland; also, to navigate the coasts east and south of Barrow, as well as the major rivers in this area. My intent is to introduce some of the essentials of Inupiat travel through XXX's eyes, his experiences in seeking out and using information he may need to know about in order to travel long distances safely on his own.

My high latitude experience began more than half-century ago. I was ready to travel away from the constraints of a minimally demanding home life. I joined the U. S. Marines at the age of 17, and after the end of an overly constraining training period, I volunteered for duty in Alaska. This occurred prior to Alaskan statehood, after the end of World War II, and was also about when the Cold War had started. I was assigned to serve with a Marine detachment at the naval base on Adak Island, in the Aleutians. This was a relatively high latitude, though lacked in the cold temperatures and seasonal variation I would later experience on the mainland. Nor was the natural Adak landscape quite what I expected when I chose Alaska for my first self-inflicted tour of duty.
I subsequently transferred to a smaller detachment of Marines assigned as caretakers for the Navy's decommissioned submarine base at Dutch Harbor, on the island of Unalaska. Nearby, there was a town also named Unalaska that served the needs of the native Aleut community which had been relocated to Alaska's mainland during the war, and since returned to Unalaska.

The natural environment of Unalaska was not much different from that of Adak, but the demands on me as a Marine were considerably different. I became involved in a broader range of personal activities, and developed new place sensitivities and skills that were to contribute to my later professional life as a geographer.

I subsequently became aware of even higher latitudes in northern Alaska as part of my graduate education. Initially, I was employed as a graduate research assistant, and assigned to review the literature for indications of the impact of the pre-and-post glacial climates of the Pleistocene on sea levels in the Bering Strait region. The shallower area of Bering Strait was exposed as dry land as the sea levels were lowered when glaciers around the world grew more extensive; and, subsequently, this and similar areas were again submerged as post-glacial sea levels rose following the melting off of much of the glacial ice from the land.

This work on weather and sea level changes associated with the Pleistocene was when I first became sensitive to how critical a connection there must have been between Ice Age changes in Alaska's environment and the migration of Inuit peoples across the North American arctic, from Alaska to Greenland. Much of this related to a changing subsistence environment along the arctic coast, which, from the perspective of the Inuit,
seriously impacted the availability of maritime resources, including the whales that
migrated seasonally into the coastal waters of Alaska and beyond into Canada.

But there were other reasons for the later changes to occur in the subsistence
activities of the Inupiat in northern Alaska. During the late 19th century, a considerable
expansion of commercial whaling activity, occurred, which continued on into the mid-20th
century when commercial whaling decreased in significance as a source of income, though
less so for its value for Eskimo subsistence.

In the early 1940s, interest developed in the potential energy resources of the arctic,
and the Navy contracted out responsibilities for the beginnings of the petroleum
exploration program in Navy Petroleum Reserve Number 4, an area that included much of
the Inupiat subsistence space in northern Alaska, from Barrow to Point Hope along the
coast on the west; also, to the Canadian border on the east, and south to the northern
borders of the Brooks Range, including a community of inland Inupiat, or Nunamiut, in the
vicinity of Anaktuvuk Pass.

**Personal background for this study.** My experience with Inupiat communities dates
back to the spring and summer of 1954, which is when I first travelled to the arctic of
northern Alaska; I retuned again for a different study in the fall and winter of 1964-65.
With the exception of air-travel and the use of tracked vehicles in the 1940s, Inupiat
transportation was either by boat on ice-free waters, or by the dog-teams and sleds that
could be used for hauling people and supplies over the snow-covered and frozen tundra
surfaces near the coast, in addition to the ice of rivers and lakes and lagoons, and across the
bays and onto the ocean beyond these. Some of this had changed by the time I returned to
the arctic in the winter of 1991. By then, snow-machines had long since replaced dog-team
drawn sleds for most personal and community use. Snow-machines had been introduced into northern Alaska in the late 1960s, and they subsequently came to impact Inupiat travel habits as well as knowledge of travel environments since then.

But there have been other kinds of changes that have had at least an equivalent impact on Inupiat travel. For example, children increasingly are expected to attend school regularly during the "academic year," which does not always coincide with the high points of the subsistence year. And such schooling was not only in home villages, but also in schools elsewhere in Alaska, and even outside of Alaska. This meant that children into their teens were less likely to be travelling with families into the roadless areas where subsistence activities traditionally provided for a different kind of education.

There were also other motivations for moving into towns, including the availability of money-paying jobs; also the opportunity to attend church as well as school, and also to take advantage of having regular access to health care provided for by village clinics and hospitals.

Wage labor employment had become a major source of village income when it was offered by government contractors associated with the petroleum exploration program that had begun in the 1940s. But it had also been available a half-century earlier for those recruited for work in commercial whaling, including at Barrow and Wainwright. Whatever their source, wages were important for encouraging and supporting more travel further from home than had been common earlier among coastal hunters. It also applied for the travel associated with commercial fur trapping, and, in a more distinctive sense, also for reindeer-herding activities in the first part of the 20th century.
A commercial reindeer industry had developed in the early 1900s, based on herds initially introduced into Alaska from Asia, and with Lapp instructors to help the Inupiat to train reindeer, not only for herding related activities, but also for a different kind of overland transportation than their dog teams had provided for them. But the domestic reindeer herds lasted only until mid-century, after herd sizes had been severely diminished, and when the remnants of depleted herds that had been managed out of Barrow and Wainwright were abandoned.

The changes I have identified above all had their effect on Inupiat travel; my concern was to find out how Inupiat travel techniques and skills as well as environmental sensitivities were impacted. For subsistence travelers, for example, how much of the traditional knowledge of sky features -- the sun, moon, and stars among these -- were remembered well enough to guide travel overland into new settings, including the sea-ice? How did wayfinders who became disoriented or lost resolve their situation, and what social practices were able effectively to accommodate for a lesser level of wayfinding skills among those who lacked a traditional upbringing that had earlier selected for environmental sensitivities and spatial skills. The groups among whom I studied these issues in 1991, included those who still were engaged in wayfinding for subsistence, and increasingly also for recreational purposes.

This book describes how the Inupiat who I interviewed explained the essentials of their wayfinding craft, which had as its goal to maintain their orientation in roadless areas under almost all of the conditions that are usual for such travel in the arctic. I do not intend to suggest that Inupiat never become disoriented or even occasionally lost, but when this occurs it is generally under unusual circumstances, about which Inupiat themselves seek
understanding so that such occasions might not recur; but these are the kinds of details that this study attempts to probe.

Inupiat of northern Alaska normally operate under rules or standards that help keep them from becoming disoriented, even though this is not consciously their purpose, i.e. to avoid disorientation. They know their travel spaces, and they find their way about in and through these spaces, whether for getting to a particular destination, or to search for game, or for whatever else it is that they may seek when they travel. They do as well as they do because they have learned how to accomplish such travel; and they are distinctive among travelers because much or almost all of their travel occurs within roadless areas.

This study is about how the Inupiat of northern Alaska accomplish the goals of their travel, during much of which they do not become disoriented, or lose their way, or if they do either -- become lost or disoriented -- this too they can treat as either a normal and only transient condition, which they can resolve in efficient fashion, and which allows them to return to a reoriented state.

I early made a decision not to get involved in the kind of personal travel that so enriched Richard Nelson's study in the Wainwright area. I decided instead to probe Inupiat recollections of travel experiences, the content of their spatial memories, and related matters. In part my reasons were logistical, and in part related to a concern that I not confuse my own experiences with those of the Inupiat. This indeed seemed to be a problem in interpreting the travel references in both Stefansson and Nelson; for neither was it clear that their information was always based on personal experiences (Stefansson), or, in Nelson's case, also on Inupiat instruction.
BIBLIOGRAPHY


In 2009, after fighting to get a quota from the Alaska Eskimo Whaling Commission, the community landed their first bowhead since 1937. The successful Atkaan crew and its captain Julius Rexford dedicated the feast to Elder Dorcas Neokok, who had recently passed away, but was instrumental in passing on the oral history of bowhead hunting in Point Lay. Alaska’s Arctic, and in particular ANWR, often makes the national spotlight as politicians debate mining the rich natural resources. Some question the necessity of preserving this isolated region, arguing that the land should be made available for economic gain. Groups led by environmentalists and native people maintain the sanctity of the Arctic for its cultural importance, biodiversity, and rugged beauty. To be sure, it is one of the last great frontiers.

Things to Do in Arctic Alaska. Dalton Highway. The 414-mile Dalton Highway, running parallel to the Trans-Alaska Pipeline from Fairbanks to Barrow, is one of the last great frontiers. My earliest experience with the Inupiat of northern Alaska dates back to the spring and summer months of 1954. I had traveled to Barrow to follow up reports that the U. S. Navy would be terminating their petroleum exploration program in Petroleum Reserve #4, which included much of northwest Alaska within its boundaries. This Navy program was managed by ARCON, the Arctic Contractors, from facilities located a few miles to the north of Barrow and the adjoining village of B