

**Final Scientific Report of Ethnological Research on the Inuit
Traditional Knowledge at Kugaaruk, Nunavut, Canada,
2002～2006**

Project Title

Ethnological research on traditional knowledge and environmental management in the Inuit society of Pelly Bay

Research Licence #

0400502N-M (2002), 0400203R-M (2003), 0400204R-M (2004), 0400105R-M (2005)



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July, 2007

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Foreword

It was in 1975 that I had the opportunity to first visit Kugaaruk (Pelly Bay) as a member of an archaeological research team. The warm hospitality and cooperation of the people of Kugaaruk beckoned me to return, but it was not until 1988 that this wish was realised. Since then, I and my research colleagues either individually or in groups, have been back almost every year since to learn about and record many aspects of the culture and society of Kugaaruk.

Our research has covered many areas, such as subsistence activities, Traditional Environmental Knowledge (TEK), language, social organisation, gender, games and other subjects. The overall point of departure in these studies has been an investigation into cultural change and endurance. Many changes have come about since our first visit in 1975, but we find that many of the traditional cultural and social aspects endure today, albeit somewhat different in form and manner of expression.

In this packet, we include the results of the research on the Inuit Traditional Environmental Knowledge (TEK), which was carried out as part of the '*Pelly Bay Ethnological Research Project*' between 2002 and 2006. This report is an interim attempt, because our investigation into the Inuit TEK is still going on. We hope to continue research to correct mistakes and to understand the Inuit TEK as well as Inuktitut and the Inuit culture more deeply.

We wish to thank the people of Kugaaruk for teaching us and cooperating with us in our research, and hope to continue to explore in depth what we have been taught thus far.

July 7, 2007

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Introduction

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Nowadays, various knowledge-practice-belief complexes of Indigenous peoples, which go by the name of ‘Traditional Environmental (or Ecological) Knowledge’ (TEK) or ‘Indigenous Knowledge’ (IK), are attracting considerable academic attention. This is because many anthropological studies since the 1970s have shown that TEK provides deep and precise insights into natural phenomena to sustain a symbiotic relationship with the environment over generations. TEK has come to be increasingly recognized as a knowledge-practice-belief complex comparable to modern science. As such, it is complementary to modern science and thus has the potential to contribute to maintenance of biological diversity, sustainable development and empowerment of Indigenous people (e.g., BATTISTE 2000; BERKES 1999; ELLEN, PARKES and BICKER eds. 2000; MAFFI ed. 2001; SEFA DEI, HALL and ROSENBERG eds. 2000; SILLITOE 1998).

TEK of the Canadian Inuit is no exception. As many anthropological studies have shown, Inuit people indeed sustain symbiotic relationships to the Arctic environment, based on TEK, which is comparable in accuracy and validity to modern science, though founded on a paradigm different from that of modern science (e.g., DORAIS, NAGY and MULEER-WILLE eds. 1998; FREEMAN 1985; 1993; FREEMAN and CARBYN eds. 1988; KRUPNIK and JOLLY eds. 2002; NAKASHIMA 1991). Moreover, it has even become a policy requirement that TEK be considered and incorporated into environmental management since the inception of wildlife co-management regimes, in which Indigenous people participate in environmental management on an equal footing with government, was established in the Canadian Arctic between the 1970s and 1980s, as a result of land claim agreements between Inuit and federal or provincial governments. In short, today the focus of discussions concerning TEK has proceeded from advocacy of TEK to implemental methods of incorporating TEK into decision-making regimes (*cf.*, USHER 2000).

The purpose of the research, on which this report is based, is to investigate the structure of Inuit Qaujimajatuqangit (Inuit Traditional Knowledge) and consider how to incorporate it into environmental management. Accomplishing this purpose, we carried out ethnological research on Inuit Traditional Environmental Knowledge at Kugaaruk

(formerly Pelly Bay), Nunavut, Canada (see Map 1), between 2002 and 2005, and examined the result in 2006. The researches conducted in each year can be summerized as follows.

Research in 2002 (Licence #: 0400502N-M): August 1st~29th

In 2002, Keiichi Omura carried out the research on Inuktun (Inuit language) and Inuit Qaujimajatuqangit (Inuit Traditional Knowledge), especially concerning ecological environment, by formal interviews with Jose Angutingnungniq and Levi Illuittuq.

- (1) Research on Inuktun: Omura continued the study on Inuktun by formal interviews with Jose Angutingnungniq in order to understand the basis of traditional knowledge.
- (2) Research on life history of elders and skillful hunters: Omura gathered the life histories of Jose Angutingnungniq and Levi Illuittuq by formal interviews with them in order to understand the backgrounds of their traditional knowledge.
- (3) Research on Inuit Qaujimajatuqangit: Omura carried out the research on Inuit Qaujimajatuqangit by formal interviews with Jose Angutingnungniq and Levi Illuittuq. The main topics of the research on Inuit Qaujimajatuqangit in 2002 are as follows:
 - (i) Animals and plants classification system in Inuktun: Omura carried out the research on animals and plants classification system by formal interviews with Jose Angutingnungniq.
 - (ii) Geographical knowledge and skill for navigation: Omura carried out the general survey research on geographical knowledge by formal interviews with Jose Angutingnungniq and Levi Illuittuq.
 - (iii) General information of climate change: Omura carried out the general survey research on the knowledge concerning climate change by formal interviews with Jose Angutingnungniq.
 - (iv) General information of animal migration: Omura carried out the general survey research on the knowledge concerning animal migration by formal interviews with Jose Angutingnungniq.

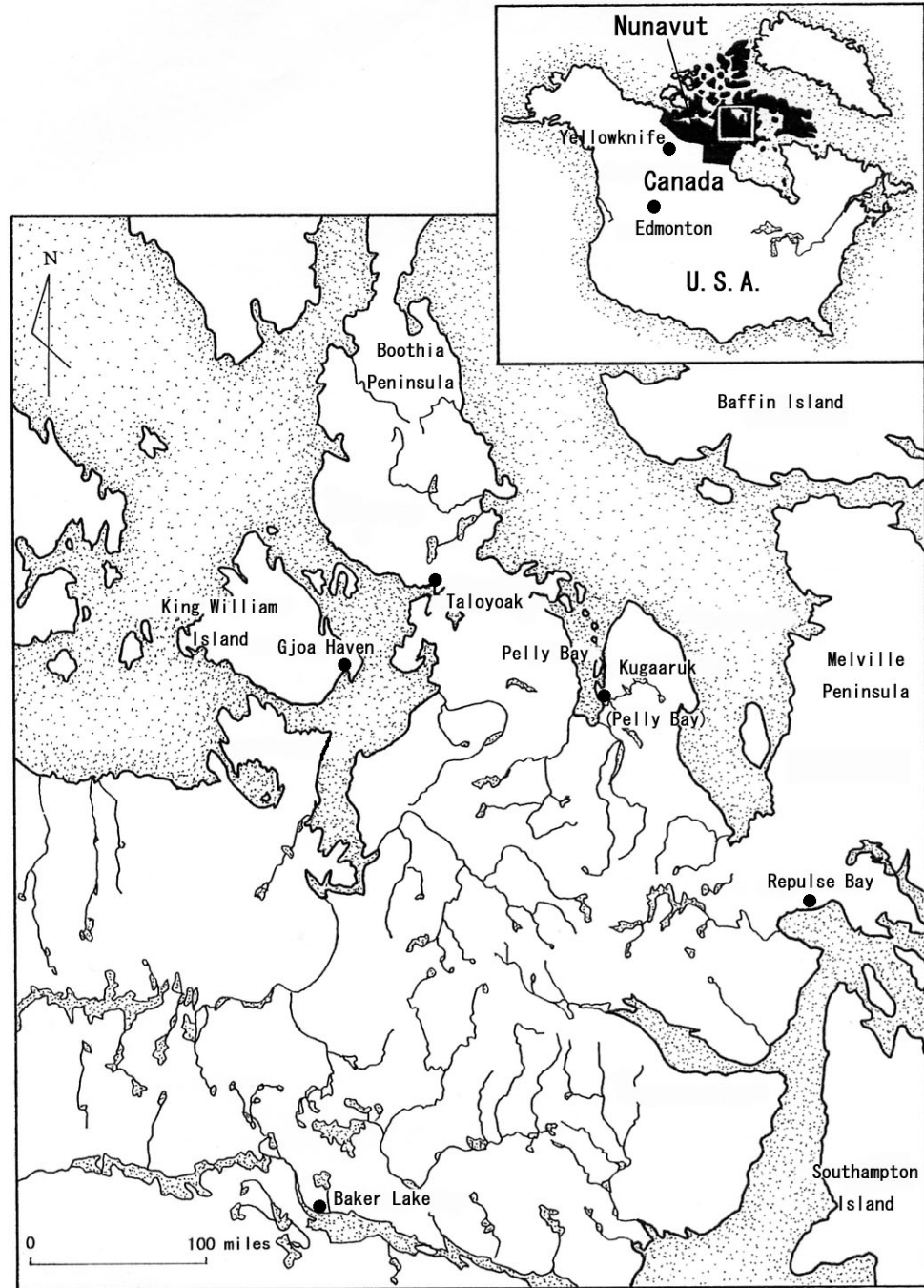
Research in 2003 (License #: 0400203R-M):

August 1st~September 14th, November 30th~December 27th

In 2003, Henry Stewart and Keiichi Omura carried out the research on Inuktun and Inuit Qaujimajatuqangit in summer (between August 1st and September 14th) and in winter (between November 30th and December 27th). Henry Stewart stayed at Kugaaruk between August 6th and 13th, and Omura stayed between August 1st and September 14th as well as between November 30th and December 27th. We made research on their language and traditional knowledge, especially concerning ecological environment, by formal interviews with Jose Angutingnungniq, Levi Illuittuq, Chrtistien Nalungiaq, Gino Akkak, Louis Uqhunngittuq, Otto Apsaktaun and Lucy Qajaqhaak. The research carried out in 2003 can be summarized as follows:

- (1) Research on Inuktun: Omura continued the study on Inuktun by formal interviews with Jose Angutingnungniq in order to understand the basis of traditional knowledge.
- (2) Research on life history of elders and skillful hunters: Omura gathered the life histories of Chrtistien Nalungiaq by formal interviews with him in order to understand the background of his traditional knowledge.

(3)



Map 1

Research on place names in Inuktitut: Omura gathered more than 600 place names around Pelly Bay, Taloyoak, Gjoa Haven and Repulse Bay by formal interviews with Jose Angutingnungniq, Levi Illuittuq, Gino Akkak and Louis Uqhunnigittuq.

(4) Research on Inuit Qaujimajatuqangit: Stewart and Omura carried out the research on Inuit Qaujimajatuqangit by formal interviews with Jose Angutingnungniq, Levi Illuittuq, Otto Apsaktaun and Lucy Qajaqhaak in order to consider how to apply Inuit Qaujimajatuqangit to environmental management. The main topics of the research on Inuit Qaujimajatuqangit in 2003 are as follows:

(i) Inuit Qaujimajatuqangit on animals and plants: Stewart and Omura carried out the research on the knowledge on animals and plants by formal interviews with Jose Angutingnungniq,

Levi Illuittuq and Lucy Qajaqhaak.

- (ii) Geographical knowledge and skill for navigation: Omura carried out the research on the geographical knowledge of each place named in Inuktun by formal interviews with Jose Angutingnungniq.
- (iii) General information of climate change: Omura carried out a general survey research on knowledge concerning climate change by formal interviews with Jose Angutingnungniq, Levi Illuittuq and Otto Apsaktaun.

Research in 2004 (License #: 0400204R-M): August 1st~13th

In 2004, Keiichi Omura carried out the research on Inuktun and Inuit Qaujimajatuqanngit between August 1st and 13th. Omura made research on their language and traditional knowledge, especially concerning ecological environment, by formal interviews with Jose Angutingnungniq, Levi Illuittuq and Guy Kakiarniq. The research carried out in 2004 can be summarized as follows:

- (1) Research on Inuktun: Omura continued the study on Inuktun by formal interviews with Jose Angutingnungniq in order to understand the basis of traditional knowledge.
- (2) Research on place names in Inuktun: Omura cross-checked place names around Pelly Bay, Taloyoak, Gjoa Haven and Repulse Bay, which were gathered in 2003, by formal interviews with Jose Angutingnungniq, Levi Illuittuq and Guy Kakiarniq.
- (3) Research on Inuit Qaujimajatuqanngit: Omura carried out the research on Inuit Qaujimajatuqanngit on plants and animals by formal interviews with Jose Angutingnungniq and Levi Illuittuq. The main topics of the research on Inuit Qaujimajatuqanngit in 2004 are as follows:
 - (i) Inuit Qaujimajatuqanngit on animals and plants: Omura carried out the research on the knowledge on animals and plants by formal interviews with Jose Angutingnungniq and Levi Illuittuq.
 - (ii) General information of climate change: Omura carried out the research on knowledge concerning climate change by formal interviews with Jose Angutingnungniq and Levi Illuittuq.

Research in 2005 (License #: 0400105R-M): January 13th~February 21st

In 2005, Henry Stewart and Keiichi Omura carried out the research on Inuktun and Inuit Qaujimajatuqanngit between January 13th and February 21st. We cross-checked the result of the research, which had been carried out on Inuktun and Inuit Qaujimajatuqanngit between 2002 and 2004, by formal interviews with Jose Angutingnungniq, Levi Illuittuq and Guy Kakiarniq.

In this report, an important portion of the results of this research will be provided. The summary of this report is as follows.

In Chapter 1, Omura tries to reconsider the concept of TEK (Traditional Ecological Knowledge) and propound an alternative view, based on the research reported in this packet.

In the first section, reviewing current TEK studies briefly, Omura shows that in developing TEK studies the following basic questions should not be avoided: What are elders and hunters trying to communicate in interviews and workshops?; Of what subjects are they knowledgeable?; How have they acquired such knowledge?; What does *knowing* mean to them? Then, in the following sections, he analyzes the storytelling of an Inuit elder to consider what he tried to communicate through storytelling. This, as Omura shows, is not information about environment independent of his own activities, such as abstract spatial positioning and wildlife itself, but rather the relationships between him and the environment, which reveal potential resources in environment, that is, ‘affordance’ in terms of ecological psychology (*cf.*, REED 1996). Furthermore, he re-examines and reinterprets what has been pointed out as the characteristics of Inuit TEK and thereby demonstrates that Inuit TEK is actually a re-enactment of the history of the engagements between humans and the environment. Moreover, he suggests that Inuktitut place names as clues to reveal the history of the engagements play a crucial role in Inuit TEK. Then, he argues that TEK should be regarded not as an alternative science, but rather as the practice of ‘poetics of life’, narratives of which give form with words and gestures to engagement between humans and the environment, and underlies any sort of knowing practice including modern science. Finally, he concludes with the viewpoint that ‘poetics of life’ suggests a way to overcome the problem of essentialism in anthropological research.

In Chapter 2, Omura investigates the mechanism of Inuit TEK, focusing on the role of memory. In the first section, he introduces his topic with a paradoxical Inuit phrase, which an elder often used in interviews on climate change; “there has been no change in weather patterns because weather patterns change every year.” Upon examining the meaning of this paradoxical phrase in the socio-cultural context of Inuit society, he hypothesises that Inuit TEK is epistemologically based on the notion that everything is repeated *differently* (he calls this idea ‘repetition of different things’). This stands in opposition to the notion that everything is repeated *identically* (he calls this idea ‘repetition of identical things’), which is the epistemological basis of modern science.

Then, based on the above working hypothesis, he analyses two aspects of Inuit TEK to consider the mechanism of memory, which Inuit hunters utilise as a resource in presenting knowledge and in practicing subsistence activity: (1) discourse (especially hunting stories) of Inuit elders and skilful hunters and (2) their foraging activity practices. As the results of his analysis, he proposes a hypothetical model concerning the mechanism of memory on which Inuit TEK is based, to demonstrate the importance of memory to Inuit TEK. Finally, he propounds the hypothesis that the innumerable fragmentary episodes accumulated in the memory of each hunter is the most important resource in Inuit subsistence activity, and that memory incorporated with the body is the field where the past is transformed into a resource for present and future activity.

In Chapter 3, Omura compares Inuit TEK with modern science to explore how Inuit TEK could be incorporated into environment management on equal grounds with scientific

knowledge for decision-making. Based on this comparative study, he proposes the following:

- (1) Inuit TEK is guided by the ideology of 'tactics' as opposed to the ideology of 'strategies' which guides modern science as defined by Michel de Certeau (1984), but both of them are based on the balanced combination of the 'tactical' practice and the 'strategic' practice.
- (2) The difference between Inuit TEK and modern science is the result of socio-political construction of otherness which Inuit people have pursued to bolster a positive ethnic-identity and resist the hegemony of modern science in the process of assimilation and integration into the nation-state of Canada and capitalist world-system since sedentarisation in the 1950's.
- (3) Inuit TEK is not essentially incommensurable and has a common base with modern science, which makes it possible to integrate Inuit TEK with modern science.

Finally, he proposes that it should be focused on socio-political conditions which cause amplification of the difference between Inuit TEK and modern science and which obstruct attempts to integrate them.

In Chapter 4, Stewart focuses on the knowledge and technology on fishing to highlight the importance of fishing in Inuit societies. Based on the result of the research reported in this packet and a critical review of the literature, he postulates that fish made up a substantial and relatively dependable part of the Netsilik and other Inuit groups' diet, providing a baseline food source when sealing and other less dependable hunting activities were slow or failed.

Finally, the data on some aspects of Inuit Qaujimaqatuqangit are given in Appendices. Appendix 1 provides the story of caribou hunting trip inland in 1950s, which is related by Jose Angutingnungniq. In Appendix 2, the map of Inuktu place names around Kugaaruk, Taloyoak, Gjoa Haven and Repulse Bay is provided.

This report is an interim attempt and we hope to continue research to correct mistakes and to understand Inuktu and the Inuit Qaujimaqatuqangit more deeply.

This research was financially supported by three Grant-in-Aid Programs of the Japanese Ministry of Education, Culture, Science and Technology: the International Scientific Research Program ('Ethnological Study of Socio-cultural Change among Inuit', directed by K. Omura: subject number 07041026); the International Scientific Research Program ('Inuit Traditional Ecological Knowledge and Environmental Management', directed by K. Omura: subject number 14701006); and, the Priority Grant-in-Aid Program ('Distribution and Sharing of Resources in Symbolic and Ecological Systems: Integrative Model-building in Anthropology' directed by M. Uchibori and K. Sugawara; subject number 606). We wish to thank the Japanese Ministry of Education, Culture, Science and Technology for their generous financial assistance. We also appreciate the directors of the Priority Grant-in-Aid Program, Prof. Motomitsu Uchibori, and Prof. Kazuyoshi Sugawara giving

many academic suggestions. Most of all, however, we would like to thank the Inuit of Kugaaruk, Nunavut, Canada, who have always been the best and most patient of teachers.

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Chapter 1

From Knowledge to Poetics:

The Sophia of Anti-essentialistic Essentialism in Inuit Traditional Environmental Knowledge

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This paper was originally published in *Japanese Review of Cultural Anthropology* (JRCA) vol. 7 (pp. 27-50), 2007.

1. Introduction

‘What is he trying to teach me through storytelling? There is indeed no doubt that he is communicating what he knows. If so, of what subjects is he knowledgeable? How did he come about this knowledge? What does *knowing* mean to him?’ These basic questions are the point of departure of this paper, questions which haunted me during interviews with Inuit elders.

I have conducted investigations since 1992 into ‘Traditional Environmental Knowledge’ (TEK) of the Inuit, an Indigenous people living in Kugaaruk in Nunavut Territory, Canadian Arctic (see Map 1 in Introduction). Traditional Environmental Knowledge is usually defined as a knowledge-practice-belief complex cultivated through intimate relationship with environment over generations (c.f., BERKES 1999).

In my research, I conducted over 150 hours of interviews with Inuit elders and skilful hunters; I was also a participant-observer of their subsistence activities of hunting, fishing, trapping and gathering. The topics of these interviews varied, covering animal and plant classification, distribution and seasonal migration patterns of wildlife, detailed ethological knowledge of each animal, knowledge of climate change, place names, and travel routes for subsistence activities and visiting relatives in neighbor villages. Notably, it was during a series of interviews on travel routes, which I carried out between 1996 and 1997, that the questions mentioned above first came into my head.

At the beginning of this interview, I asked the elder A to show me on a 1:250,000 scale map the routes which he usually or always takes to travel from the village to principal hunting grounds or neighboring villages. I expected that he would demonstrate a generalized knowledge concerning a network of routes which link various territorial places.

Contrary to my expectation, however, he was confused by the question and told me that he can travel to those places by many different routes. This is, of course, not because he lacks ability to generalize from his experience or systematic knowledge of routes for way finding, rather because the style of my questions, which were directed at generalized knowledge and included terms relating to generalizations, such as ‘always’ and ‘usually’, is inappropriate for discussion among Inuit ‘adults’ due to the following reasons.

According to the cultural ideal in Inuit society (OMURA 2005a), an ‘adult’ is a person with *ihuma* (reason) who conforms to the ideal personality, and is a person who does not easily generalize about phenomena nor reduce complex phenomena into a simple principle without regard for the detailed context. An ‘adult’ is sensitive to and gives careful consideration to the subtle details and contexts of phenomena in order to cope. This is the reason why the elder was confused by my questions. In accordance with this cultural ideal, he avoided facile generalization. He gave me a full account of routes that they took in the past when I made the questions more specific, such as the following: ‘How did you go there in the summer when you got married?’ Then, in response to my request that he talk about caribou hunting trips to inland regions over the five years just before sedentarization over fifty years ago, he vividly related detailed stories about each trip in sequence, using many gestures and retracing the routes he actually traveled each year on a 1:250,000 scale map (the part of these stories is analyzed in detail in section 3 in this Chapter; also see Figure 1).

This incident demonstrates a discrepancy between his and my views of knowledge. There is no doubt that he told me what he knows because, prior to the interview, I asked him to teach me *Inuit Qaujimaqatuqangit* (Inuit traditional knowledge). He told me that he would teach me what he knew about Inuit traditional knowledge to the best of his ability. However, his attitude toward context of knowledge is the very opposite to mine. While I, on the one hand, asked him to show me a generalized knowledge on the premise that knowledge can be decontextualized, freely manipulated and generalized out of context, he on the other hand avoided generalization and re-enacted his hunting trips with words and gestures on a map on the premise that knowledge should not be shown out of context.

Why does this elder presuppose that knowledge should not be shown out of context? This is indeed because of the cultural ideal mentioned above, according to which generalization and decontextualization is childish (*nutaraqpaRuktuq*), and not suitable to an ‘adult’. Then, why is generalization and decontextualization of knowledge regarded as childish in their cultural ideal? Upon what kind of view on knowledge is this cultural ideal based? What does *knowing* mean to an ‘adult’? Of what subjects is he knowledgeable? How did he acquire such knowledge? What was he trying to teach me through storytelling?

In this paper, I focus on these basic questions to reconsider the concept of TEK and propound an alternative view, based partly on my own research and partly on other studies of Inuit TEK.

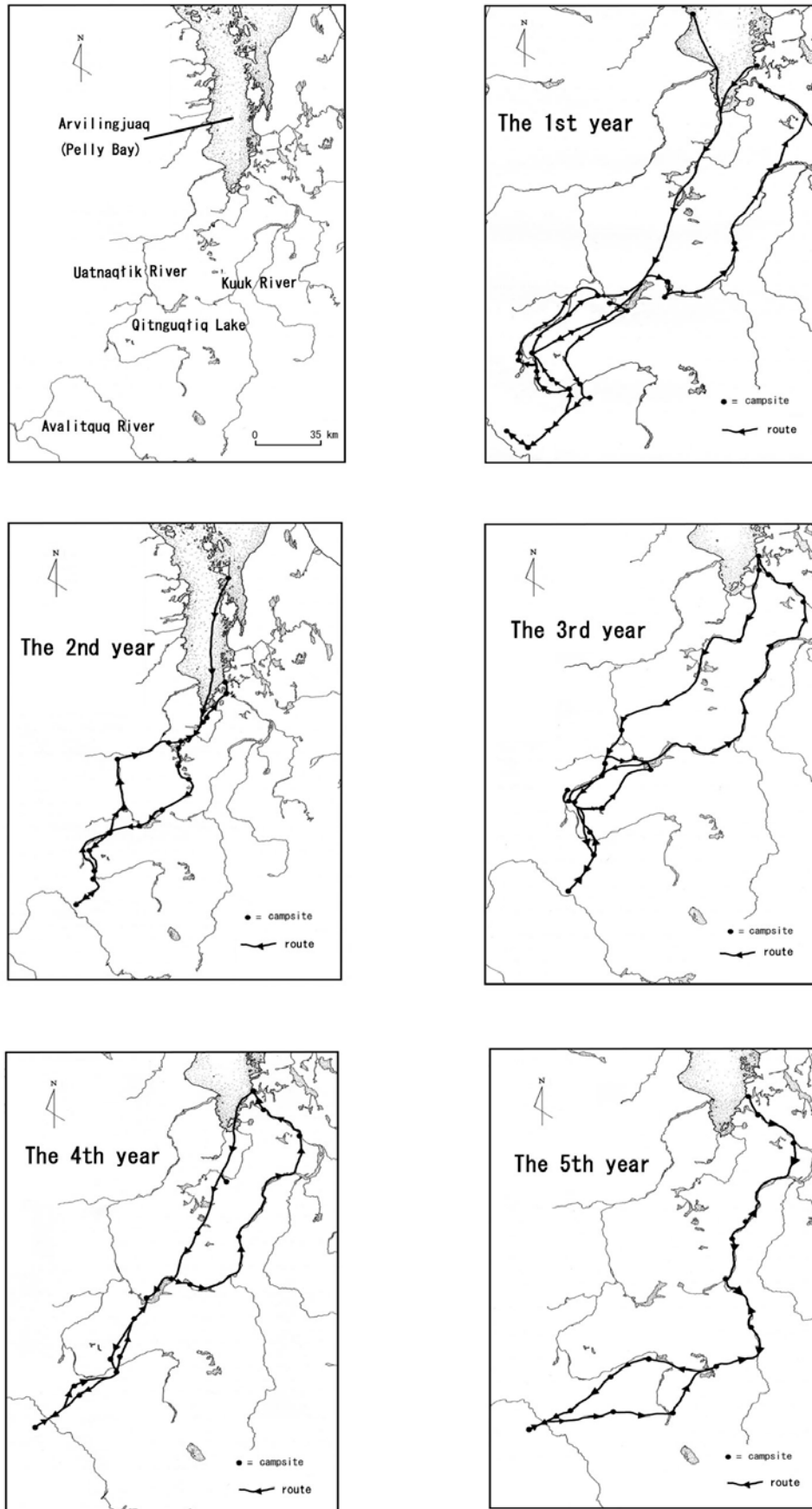


Figure 1: The route of the hunting trip

First, I briefly review current TEK studies to show that we cannot avoid these basic questions in developing TEK studies. Then, in the following sections, I analyze the storytelling of an Inuit elder to consider what sort of things he tried to communicate through his storytelling. Based on this analysis, I show how the elder with words and gestures re-enacted and demonstrated past experiences. This is not information about environment independent of his own activity, such as abstract spatial positions and wildlife itself, but the relationships between him and the environment, which reveal potential resources of environment, that is, ‘affordance’ in terms of ecological psychology (*cf.*, REED 1996). Furthermore, I re-examine and reinterpret what has been pointed out as the characteristics of Inuit TEK and thereby demonstrate that what has been referred to as Inuit TEK is a re-enactment of the history of the engagements between humans and the environment. I also suggest that Inuktitut (Inuit language) place names as clues for revealing the history of engagements play a crucial role in Inuit TEK. Then, I argue that TEK should be regarded not as an alternative science, but as the practice of ‘*poetics of life*’, narratives of which gives form with words and gestures to engagement between humans and the environment, and underlies any sort of knowing practice including modern science. Finally, I conclude with the viewpoint that ‘*poetics of life*’ suggests a way to overcome the problem of essentialism in anthropological research.

2. Theoretical Contexts:

The Politics of TEK and Decontextualisation of Knowledge

Nowadays, various knowledge-practice-belief complexes of Indigenous people, which go by the name of ‘Traditional Environmental (or Ecological) Knowledge’ (TEK) or ‘Indigenous Knowledge’ (IK), attract considerable academic attention. This is because many anthropological studies since the 1970s have shown that TEK provides deep and precise insights into natural phenomena to sustain a symbiotic relationship with the environment over generations. TEK has come to be increasingly recognized as a knowledge-practice-belief complex comparable to modern science. As such, it is complementary to modern science and thus has the potential to contribute to maintenance of biological diversity, sustainable development and empowerment of Indigenous people (e.g., BATTISTE 2000; BERKES 1999; ELLEN, PARKES and BICKER eds. 2000; MAFFI ed. 2001; SEFA DEI, HALL and ROSENBERG eds. 2000; SILLITOE 1998).

TEK of Indigenous people living in the Canadian Arctic and sub-Arctic is no exception. Many anthropological studies have shown that Indigenous people sustained symbiotic relationships to the Arctic and sub-Arctic environment, based on TEK, which is comparable in accuracy and validity to modern science, though founded on a paradigm different from that of modern science (e.g., DORAIS, NAGY and MULEER-WILLE eds. 1998; FREEMAN 1984; 1985; 1993; FREEMAN and CARBYN eds. 1988; NAKASHIMA 1991; SCOTT 1996; STEVENSON 1996). Moreover, it has even become a policy requirement

that TEK be considered and incorporated into environmental management since the inception of wildlife co-management regimes, in which Indigenous people participate in environmental management on an equal footing with government, was established in the Canadian Arctic between the 1970s and 1980s, as a result of land claim agreements between Indigenous people and federal or provincial governments. In short, today the focus of discussion concerning TEK has proceeded from advocacy of TEK to implemental methods of the incorporating TEK into decision-making regimes (c.f., USHER 2000).

In this social and academic climate, many anthropological investigations into TEK have been carried out to develop a method for incorporating TEK into environmental management during the last 15 years in the Canadian Arctic (e.g., KRUPNIK and JOLLY 2002; FERGUSON and MESSIER 1997; NWMB 1998; 2000). In spite of all their efforts, however, there has been little progress toward actual achievement of this objective, primarily because the political dimensions of the issue have been overlooked (NADASDY 2003). As some anthropologists point out (e.g., AGRAWAL 1995; NUTTAL 1998; ROEPSTORFF 1998), most investigations have been based on the premise that knowledge is an abstract product of the human intellect and therefore can be treated independently of socio-political as well as cultural context that gives knowledge meaning. As a result, the approach to TEK in these investigations has treated TEK as simply another type of information or source of data different from scientific knowledge, and therefore overlooked the socio-political processes in which the incorporation of TEK into environmental management on equal grounds with scientific knowledge for decision-making is embedded.

As argued by Foucault (e.g., 1981), Latour (1987) and Lave (1988), all sorts of knowledge, including scientific knowledge, are not sets of discrete intellectual products completely separable from the regimes with certain relations between power and social control, because they are inevitably embedded in the socio-political as well as cultural context in which they are constructed and reproduced. Likewise, TEK is not a body of information or data, which can be decontextualized, freely manipulated and generalized out of context, because TEK is a knowledge-practice-belief complex that is always embedded in complex networks of social relations, values and practices (e.g., BERKES 1999; INGLIS ed. 1993; WILLIAMS and BAINS eds. 1993). In other words, the difference between TEK and scientific knowledge is not only epistemological one but also institutional one. Accordingly, as Agrawal (1995) and Nadasdy (2003) have forcefully argued, the purpose of incorporating TEK into environmental management is not to technically combine and integrate two alternative sets of data under an existing regime, but to construct a new regime, in which two alternative socio-cultural institutions coexist, and thereby empower Indigenous people.

However, for all their assertion that TEK is a knowledge-practice-belief complex, TEK studies have been inclined to regard TEK, not to mention scientific knowledge, as a set of information or data, which can be treated independently of the socio-cultural context

in which they are produced (NADASDY 2003: 121-123). This approach regards the difference between the two knowledge systems as an epistemological one. Thus, the incorporation of TEK into environmental management is reduced to a technical exercise of combining and integrating two alternative sets of data without reconsidering and adjusting the existing environmental management regime. TEK studies have unintentionally reproduced the classical opposition between the 'savage' and the 'modern' in epistemological terms, and obscured the fundamental opposition between the suppressor and the suppressed in the real world of environmental management (AGRAWAL 1995). As a result, management regimes that require adjustment have been left untouched (NADASDY 2003).

The problem of this approach is clearly reflected in the framework of TEK studies (NADASDY 2003: 123-132). Although TEK studies have asserted that TEK is a 'way of life', that is to say, a complex web of practices, values and social relations, which encompass not only all animals, plants and geographical features but also humans as well, they have in practice 'compartmentalized' it into categories according to the disciplinary division and biological classification of modern science, such as 'TEK of caribou', 'TEK of bowhead whale', and 'TEK of climate change', without consideration for the holistic nature of TEK (NADASDY 2003: 123-126). Moreover, although what elders and hunters of Indigenous people showed in interviews and workshops is recorded in detail, only information that can be utilized within the institutional framework of modern science, such as numbers, tables and figures in written documents is 'distilled'. As a result, a whole array of stories, values, social relations and practices, which are the essential constituents of TEK but incompatible with scientific description, are ignored (NADASDY 2003: 126-132). Based on the implicit premise that knowledge can be decontextualized and freely utilized out of context, TEK studies have compartmentalized and distilled data according to the standards of modern science. Thus, under the present regime of TEK research, Indigenous people are suppressed and unilaterally exploited by scientists and environmental managers.

Accordingly, in order to overcome problems in TEK studies and projects of incorporating TEK into environmental management, it should be concluded that we are required to challenge the premise that knowledge is an abstract product of the human intellect and therefore can be treated independently of socio-political and cultural context. Indeed, as Agrawal (1995) asserted, it is imperative to expose the asymmetrical power relationship behind the present regime and construct an alternative regime to empower Indigenous people. However, it is necessary, at the same time, to challenge the premise that allows scientists and managers to unilaterally exploit TEK, and to seriously reconsider what TEK really is, what a knowledge-practice-belief complex is, and what elders and hunters communicate in interviews and workshops, without compartmentalizing and distilling data according to the present implicit premise.

So, what sort of things are elders and hunters trying to communicate in interviews and

workshops? Of what subjects are they knowledgeable? How have they acquired such knowledge? What does *knowing* mean to them? In the next section, I will consider these questions through analysis of the storytelling practices of Inuit elders and hunters.

3. Storytelling as Re-enactment of Practices: Engagements Revealing Affordances of the Environment

The storytelling practices examined here were collected during a series of interviews on travel routes. As I have already mentioned, I was confronted with a major difficulty, because of the wording of my questions, which were directed at generalized knowledge and included terms relating to generalizations, such as ‘always’ and ‘usually’. After I had made the questions more specific, however, he began to give me a full account of routes he traveled in the past. Then, in response to my request, the elder A vividly related detailed stories about caribou hunting trips to inland regions over five years in the 1960s, using many gestures and retracing the routes he actually traveled each year on a 1:250,000 scale map (see Figure 1 and Chapter 2 and 3 for a summary of the elder’s story).

The most striking feature of these storytelling practices, as I have pointed out elsewhere (OMURA 2005a; 2005b), is that the elder did not indicate to me generalized knowledge about routes, but reconstructed his experiences of the trip actually executed in the past in sequence, as if he was re-enacting that trip again by means of words and gestures. In these stories, subtle details of these hunting trips were demonstrated in sequence: campsites, places where he cached food, tools, sleds and so on, how long spent at camping and hunting, places where he saw and hunted game, the behavioral patterns of the game and hunting methods, the number of game caught during each hunt, changes in weather during each trip, various social events, changes in social relations among his relatives, and so on. He also demonstrated how he had managed to overcome all the difficulties through flexibility, taking proper steps to meet changes in individual situations. In short, the elder did not relate a generalized pattern which was abstracted from memory of his experiences, but repeated his actions during hunting trips, by means of words and gestures. This is clearly illustrated in Figure 1, which does not so much indicate a generalized knowledge of routes, but represents all of the routes he actually traveled each year.

This is well illustrated in the gestures he used while telling the story. He continually retraced his movement on the map with his finger or pencil, saying ‘by this route’, ‘for there’, ‘towards this direction’, and so on. Then, when he arrived at the place where he hunted caribou, fished or made caches, he explained the process of pursuit of caribou on the map or, raising his face from the map, used many gestures to explain how to fish, dry fish, make storage bags for caribou marrow and fur, and build stone-made caches. For example, in this storytelling he explained the process of caribou hunting and fishing in the trip as follows.

(Narrative A) We always walked. We took this route [following the route on the map with a pen]. We did not use this river, which we called *Nurraqhiurvik*. Instead, we took this route and then that way to this lake here. We passed the lake and moved on this way. Then, around here, we changed direction. Later, around here, we are starting traveling this way, when the snow was already melting. We took this route. ... Then, we took this route because the river was still not running. We traveled this way down there. When we were around here, I saw four caribou. They ran down here [explaining the process of pursuing the caribou on the map]. We pursued and took the caribou around here. I made *mipku* (dried meat) with my late wife. After we finished making *mipku* (dried meat) around here near *Tuluqqaat* (mountain; place name) [following the route on a map with a pen], we went fishing in the small lake around here. There were many small fish in that lake. They were all small. We caught many fish. We had a small pot, which was little and narrow [miming actions of putting fish in a pot]. We put the little *ihuraarjut* (lake trout) in it. (OMURA 2005b: 90-91; The descriptions in brackets [] show the elder's gestures)

This tendency is not confined to the storytelling of this elder but a characteristic common to all storytelling practices of elders and skillful hunters I interviewed, and is also noted by Rundstorm (1990) who studied maps drawn by Inuit. It is well-known that at the request of explorers and anthropologists, Inuit drew maps which have a reputation for elaborately expressing subtle details and differences in geographical features, and often compare favorably with modern topographic maps (e.g., FOSSETT 1996; RUNDSTORM 1990; SPINK and MOODIE 1972; 1976). Rundstorm (1990) argued that such Inuit map making practices can be considered to be an extension of their custom of recounting every detail of the environment encountered along the way, miming with gestures the forms of geographical features, after returning from subsistence activities and visiting neighboring villages. Inuit maps recorded in explorer's journals and ethnographies, he inferred, directly result from execution of such gestural performances in pen and paper. Accurate maps drawn by Inuit impressively demonstrate that their storytelling practice is none other than a re-enactment of past practice.

In addition to being characterized as re-enactment of past practice, the story cited above has another striking feature in content. It is that the story is devoted entirely to showing the processes in which the elder searched for and picked up 'ecological information' to discover and use the 'affordances' of the environment in terms of ecological psychology.

According to Reed (1996: 9-46), 'affordances' are potential but substantive resources that exist independently of organisms in the environment though can be realized and used by organisms through their practical engagements with its constituents. For instance, a polar bear inherently affords watching, pursuing, spearing, shooting, eating, and making clothes and many kinds of tools, etc. for humans. In this sense, the polar bear has

inherent affordances for such human behavior. These affordances, however, can only be realized and used when a human enters into a specific relationship with a polar bear through interaction while hunting. In order to avail himself of an affordance, he must carefully regulate his behavior. If he fails to establish proper relationship, for example, hunter/game relationship, through improper approaches to the polar bear, its affordance for eating would not be realized and remain latent. In short, affordances of the environment are resources, which are inherent in the constituents of the environment, but must be revealed and realized by individual humans from the establishment of specific relationships through proper interactions between humans and a constituent of the environment. Then, 'ecological information' is a resource which reveals affordances of the environment to individual organisms and 'enables me [as an organism] to encounter my surroundings, to regulate my encounters, and to be aware of my activities in the living world' (REED 1996: 7). In short, it is ecological information that organisms search for and pick up as clues to affordances.

From the viewpoint of ecological psychology, it is clear from an examination of this hunting story that the story is devoted entirely to showing the processes in which the elder searched for and gained ecological information revealing affordances (caribou, fish and rocks) through moving around in the environment. To begin with, the basic plot of this story develops along the process in which he moved around in a vast inland region to search for, discover and use an affordance, that is, a large herd of caribou with proper fur for clothing, by help of ecological information. Then, the following anecdotes, in which the elder encountered and cleverly used various affordances of the environment, are inserted into the main plot: to search for and use proper routes; to unanticipatedly encounter small herds of caribou and catch some of them; to fish in lakes (see Narrative A cited above).

Moreover, in addition to these relatively simple examples of direct utilization of affordances, such as route finding, hunting and fishing, this story also shows more complex examples of utilization of affordances, such as social interactions among people, and the processing and caching of meat, marrow and fur. For example,

(Narrative B) We caught many fish. We always used *naulingniut* (fishing spear) in that month [August]. I speared many times, and caught three big *ihuuq* (full-grown trout) in that *qamaniq* (deep and wide part of river) [explaining the size of the fish with his hands]. There is a *qariaq* (shallow and narrow part of river), between the mouth of the river going down to the lake and the *qamaniq* [explaining the geographical features on the map with a pen]. It was muddy, very shallow, and very narrow. It looks like a small lake. There are many fish. I went in the water this deep in the *qariaq* [indicating his waist with his hands]. When the fish went into the *qariaq* from up there, [explaining how he and his wife collaborate to fish with his hands] my late wife tried to keep the fish from going down to the lake, though the fish were determined to go there. When the fish tried to go down there [explaining the movement of fish on a map], she

chased them with handle of fishing spear. Then, I speared them. I caught many fish. ... When we finished fishing at *Qitnguqliq* (lake; place name), we lengthened our dog harnesses and made a long rope for drying fish [explaining how to make a rope with hands]. Then, two of us, my then brother-in-law and I, strung that rope through the fish's gills and hung them along shallow part of river to dry them. It was very long. We strung many fish on a rope. There were many fish. It was fun in those days. I remember how much fun it was. Then, when we had finished drying the fish, the ice broke, and the caribou moulted their winter coats. In those days, we were always around that lake [pointing its location on the map with a pen], when the caribou still had their winter coat. While we were there, we always spent the spring catching fish. This is because the hide is not good for clothes when caribou still have their winter coat. (OMURA 2005b: 91)

Social interaction, which is shown in such anecdotes as collaboration in drying fish, encountering and parting between the elder's hunting party and another party, is none other than a complex example of the process of social persons mutually searching for and using affordances of their environment. This is because other persons are also potential resources of the environment, which are realized in social roles through negotiations according to social norms. Likewise, processing and caching practices are also a complex variant of utilization of affordances, in which some affordances of rocks, geographical features, harnesses and sunshine are combined to form new affordances that are needed and used to transform game and make them transportable or storable. Interestingly, this story also shows various ingenious ways to discover and realize potential affordances or to combine the given affordances to form new ones. For example, various parts of this story show the following ways to use potential affordances of the environment: how to use the potential affordance of the *qariaq* (the shallow and narrow part of river) to fish (narrative B); how to find out which route affords transportation in accordance to snow and ice conditions (narrative A); to know when caribou fur is proper for nice clothing (narrative B). Furthermore, the story also shows resourceful ways to combine the given affordances of environment to form new ones, such as how to transform and combine sled harnesses to form new affordance for drying fish (narrative B), and how to combine the potential affordance of a big rock with the affordances of smaller rocks to build a cache for caribou fur.

(Narrative C) When we were around here [pointing its location on a map with a pen], I took many caribou. I can remember there was twenty-three in all. We took many caribou. ... Then, we cached the caribou hides we took under a very big rock that rests on the ground [miming the features of the rock with his hands]. We made the cache, putting smaller rocks close to each other around that big rock [miming actions of building the cache with his hands]. Then, we packed many hides into three big bull caribou hides and put them inside it [miming actions of lapping small furs in two big furs with his hands]. A caribou hide bag for storing hides and

gear is called a *qillaaqtaq*. We always made some small holes along edge of the *qillaaqtaq* and put the other small hides in it. Then, we tied up it with a cord and stored it in the rock cache. That bundle of hides all tied up was heavy, though it is just made of dried hides. The place we cached caribou hides is called *Anmivik*. There is a big rock resting on the ground in *Anmivik*. (OMURA 2005b: 92)

Thus, it is not an exaggeration to conclude that what is shown throughout this story is nothing but anecdotes concerning utilization of the affordances of the environment, with the single exception of a few expressions of the elder's emotions, such as 'I remember that it was fun'. The story is full of wisdom indispensable for proper and resourceful approach to affordances: how to scan the environment to discover potential affordances; how to utilize affordances; how to transform and combine them to form new ones.

Therefore, it can be concluded that this story is the re-enactment of the elder's activities in the engagement with his environment, because 'in order to use an affordance, an organism must enter into a specific relationship with part of its environment' (Reed 1996: 28). It is the practical engagements of organisms with their environment that realize its potential affordances, which exist independently of the organisms but have been latent until the engagements take place. This is the reason why the elder, tried not to show the generalized knowledge but to re-enact his practices. What the elder tried to show through storytelling is his practical engagements with various constituents of the environment.

4. Wildlife as Being Related to Humans

This tendency is not confined to this story but a characteristic common to most of his narratives during 21 hours of interviews on wildlife, such as polar bear, ringed seal, bearded seal, lemming and various kinds of fish. During these interviews, he did not so much describe wild life as independent entities detached from him as to represent wildlife as being consistently in relationship with him through such practical engagements as hunting. I next examine his narratives of polar bears. A series of interviews on this topic was conducted for about 4 and half hours between 2002 and 2003. In the following I examine his storytelling practices.

At the beginning of the interview, I was confronted with a major difficulty again because of my naïve assumption that his knowledge on wildlife would be sorted out according to Inuktitut (Inuit language) animal and plant classification, which I had already researched. According to this assumption, I asked him to freely talk about polar bears, which he had wanted to talk about first of all, expecting that he would spontaneously demonstrate his knowledge of polar bears, including distribution and seasonal migration patterns, and detailed ethological knowledge. Then, in order that he could freely talk about this topic, I tried to refrain from making questions as much as possible. The following is a summary of his 4 minutes narrative of polar bears.

(Narrative D) Polar bears keep hunting seal during the winter, during the spring, during the summer.

I heard, though I have never actually observed, that it fishes in a river like grizzly bear. After a female polar bear has cubs in winter, she builds a den of snow, and then hibernates in it without eating for about 4 months until she gets out of it when it gets warm. Male polar bears hibernate for about 2 months. Polar bears never stop moving except while they hibernate. They keep walking and walking even if they are tired. Now, I will talk about ringed seals. (Summary of a narrative told by the elder A on August 11, 2002)

At the last phrase of this narrative, I became flustered, because I had not anticipated that his polar bear narrative would last only 4 minutes. Fortunately, soon after, he remembered what he forgot to mention and started talking about the structure of polar bear dens. Then, I improvised questions as he talked.

After his explanation of polar bear dens, in order to continue the interview, I asked him questions about bear population and seasonal migration patterns. In response, he described how a polar bear builds a den of snow, and how Inuit people used to hunt denning polar bears, and then explained that the bear population should increase now because Inuit do not hunt it in dens since den hunting is prohibited by law. Then, he voluntarily started to explain how to hunt polar bear. First, he briefly described the traditional way of hunting with dogs and spears before firearms were introduced, and shifted the topic to his experience of hunting polar bears the year before. Then, using many gestures, he recounted for ten minutes a frightening experience.

(Narrative E) Last year, when I tied a seal to my sled with ropes after catching it, a polar bear dashed toward me. Fortunately, I was barely able to escape because I kept the engine of my snowmobile running. Then, after running quite a long distance, I left my sled with the seal on *Igluvirarturvik* Island to seal again at another place, because I thought that I outdistanced the polar bear. However, it still pursued me. After a while, when I came back empty-handed to my sled, I discovered that the polar bear was eating the seal tied to the sled. When the polar bear sensed me, it lifted up the seal together with the sled with her mouth, growling at me. I was frightened. The polar bear has such enormous power. I was compelled to shoot it, because it started to eat the seal again instead of running away. The polar bear fell dead on the seal. I dismembered the polar bear, and hereupon found that it was a starved female with little fat. I was very lucky that I was not attacked from behind but encountered her frontally. After that, when I went back to the seal hunting ground to start sealing again, I discovered something like a fox on an ice floe. I approached it, and then found out that another polar bear was eating a seal. As soon as that polar bear noticed me, it stood up and ran away. I pursued it and caught it also. (Summary of the narrative told by the elder A on August 11, 2002)

After this narrative, in order to continue the interview, I asked him the following

questions: whether or not the polar bear is a sacred animal, what a polar bear eats besides seal. After answering these questions, he told me that he knew nothing more about polar bears. Then, I asked him to relate folktales or myths about polar bears. In response to this request, he related for almost 30 minutes the story of *anguhugjuk*, who was married to a female polar bear. Then, when I asked him whether polar bear society has a leader like human society, he started to explain how a pair of polar bears helps each other like a human couple, and then talked about this for 5 minutes. After he finished talking about it, I asked him again whether polar bear is a sacred animal. Then, the topic shifted to shamanism. He explained that some shamans were helped by the polar bear *tagniq* (spirit), and ended by suggesting that we should not tease nor cause distress to any animal because all animals have a *tagniq*.

The next interview on the same subject, the polar bear, was conducted one week later. For the first 15 minutes of this interview, in response to my questions, the elder explained distribution and seasonal migration patterns, and polar bear hunting methods. In this explanation, he told that its seasonal migration pattern corresponds to the pattern of the movement of sea ice, because polar bears hibernate on the sea ice or the land around the mouth of Pelly Bay in winter, then move from Pelly Bay to the area abounding in sea ice in spring, and later follow the movement of sea ice into Pelly Bay and approach Kugaaruk town. Moreover, he maintained that winter is the best season to hunt polar bear. Then, I asked the same question as one week ago, that is, whether the polar bear is a sacred animal. This question led him to talk about animal *tagniq* (spirit). He explained again that because all animals have *tagniq*, one and one's relatives may be attacked by an animal or meet with misfortune if one teased, caused distress to animals, or wasted any animal products. Then, this interview ended with a detailed explanation of *tagniq*.

The next interview, which was carried out in the following year, began with the elder's voluntary explanation that polar bears hunt seals in the same way as humans and that cubs play as does a human child. Then, he related the story in which polar bear adopted by a human couple helped them to seal, and explained the polar bear seal hunting method. This explanation of polar bear sealing led him to talk about the traditional Inuit way of sealing. After explaining seal hunting for almost 40 minutes, he brought the topic back to polar bear hunting. Then, using gestures, he recounted for 25 minutes his experience of hunting polar bear with dogs and a harpoon. This story led him to repeat the story (E) cited above, in which he talked about his frightening experience of an unanticipated encounter with a polar bear for about 5 minutes. Then, he moved the topic to polar bear seal hunting, in which he recounted his experience of observing a polar bear sealing and explained how polar bear is a smart hunter, miming its way of sealing. Finally, he explained that a polar bear cub separated from its mother would not live long because the cub learned to hunt through helping its mother to seal.

It is clear that the elder consistently tried not to represent polar bears as being independent of humans, but to describe polar bears as being interrelated with humans

through engagements, hunting and witnessing polar bear behavior. Indeed, he often talked about generalized knowledge of polar bears independent of humans, such as distribution and seasonal migration patterns and detailed ethological knowledge. This information, however, was limited to when I asked him direct questions concerning such information. The descriptions of polar bear as an entity independent of humans is not what he was voluntarily willing to talk about. This is clearly demonstrated by the brief statement ‘I have heard, though I have never actually observed a polar bear fishing’ (see narrative D). By this, he makes it clear that what he talks about is based on his own or other’s experiences of engagements with polar bears, even when my questions tended to force him to make a ‘detached scientific’ reply. Likewise, he did not so much objectively describe animal *tagniq* (spirit) independent of relationships with humans, as to rather describe desirable relationships between humans and animals. What he explained is not what animals are themselves, but how we humans should act toward them to establish desirable relationships. This goes for stories, including the story of *anguhugjuk* who married a female polar bear and the story of a polar bear adopted by humans, where he described communication between humans and polar bear society.

Therefore, it can be concluded that it is not natural for this elder to describe polar bears as entirely detached from relationships with humans, and dwell upon distribution, migration patterns and ecology. His description of ecology in the first of a series of interviews lasted only 4 minutes, while he repeatedly related his experiences of hunting and observing polar bears at length. This shows that he is not accustomed to describe polar bears and other animal detached from humans, but to show interrelationships. In addition, more importantly, he often re-enacted his experiences with gestures, as if the polar bear was in front of him. This is a characteristic tendency common to his narrations of other wildlife also. He consistently described wildlife not as being detached from and independent of humans, but as being interrelated to humans through re-enacting practices in engagements with polar bears, etc.

5. Place Names as the Clues for Accessing and Sharing Memories

It should be clear that what the elder tried to show through storytelling is the process in which relationships between environment and humans had been established to realize and use affordances of the environment through practical engagements. He describes the environment, including wildlife, not as detached from humans, but as being consistently interrelated with humans. These interrelations are established only through practical engagements, such as traveling and subsistence activities. In this sense, the purpose of storytelling is not so much to present objective knowledge about the environment independent of humans, but to show the process of revelation of affordances through re-enacting his activities of engagement with the constituents of the environment.

Given that the elder’s narratives discussed above typically represent the Inuit way of

describing the environment, it is no longer difficult to understand the reason why Inuit TEK exhibits the characteristics that have been pointed out by many anthropologists (e.g., FERGUSON and MESSIER 1997; FREEMAN 1985; 1993; FREEMAN and CARBYN eds. 1988; NAKASHIMA 1991; OMURA 2005; STEVENSON 1996). Many anthropological studies have shown that Inuit TEK tends to be qualitative, intuitive, ethical, subjective, holistic, context bounded, flexible and based on empirical observation and metaphysical explanation. Moreover, it has been shown that TEK contains detailed and precise information of a specific territory over a long term. These characteristics can be explained as follows.

First of all, given that in interviews and workshops Inuit elders and hunters intend to show the processes by which they establish relationships with the constituents of their environment through practical engagements, such as subsistence and traveling activities, it is not surprising that they have detailed and precise knowledge of a specific territory based on empirical and subjective observation over a long period of time. Likewise, because the process they show is the process by which they discover and use affordances of the environment through engagements with its constituents, they inevitably tend not to reductively analyze but to intuitively, flexibly and holistically comprehend the *gestalt* of the environment, focusing on qualitative aspects of the environment and the contexts of engagements, which reveal affordances. This in all probability is the reason for the negative attitude of Inuit hunters toward easy generalization, because generalization inevitably results in omitting and discarding qualitative aspects of the environment and contexts of practical engagements, all of which are essential to discovering of affordances.

Moreover, TEK narratives invariably contain ethical norms because they are relationships between human and environment that underpin Inuit ethos. It is impossible to discuss environmental knowledge separately from environmental ethics, unless the domains of human—environment are separated prior to considering the relationships. Environmental knowledge and environmental ethics are inseparable when environment is understood in terms of relationships with humans. Because of this, Inuit environmental knowledge is based on and results from environmental ethics, that is to say, how humans should relate to the environment. This is also the reason why TEK is based on the metaphysical explanation, in which ecological relations are explained in terms of human social relations. Given the premise that the relationships between humans and the constituents of its environment, including wildlife, do not result from, but result in environmental knowledge, what a constituent of the environment is and how it behaves depend on how a human person acts toward it. Moreover, it is needless to say that how a human acts toward it depends on what it is and how it behaves. As a result, how a constituent of the environment behaves depends on how a human acts toward it, and at the same time how a human acts toward it depends on how a constituent behaves. This is the *double contingency*, which Luhmann (1995: 103-136) considered as the most basic condition for social actions to be realized. In short, given the above premise, it is natural

to explain ecological relations in terms of social relations, because both relations between humans and the environment, and relations among social actors are rooted in the very same conditions

Therefore, as Ingold (2000) pointed out, it is inappropriate to interpret this characteristic of TEK as a *personification* of wildlife, that is, a metaphor for ecological relations from social relations. This is because there is no difference between the relations among humans and the relations between humans and the environment, in that both of them are driven by the common basic problem of *double contingency*. In both cases, it is not until participants actually engage or communicate with each other that the nature of relations and its participants becomes determinable. Conversely, only one's practical engagement or communication with the other determines the nature of the other as well as one's relation with the other, which in turn instigates the next engagement or communication. In short, participants are driven to engage or communicate with each other in order to solve the problem of *double contingency* and determine each other's nature. Both relations among human persons and the relations between humans and the environment are indeed driven by resolving the basic problem of *double contingency*. As pointed out by Wenzel (1991; 2004; STAIRS and WENZEL 1992), both the social relations among human persons and the ecological relations between humans and the environment are founded on a common basis. However, the former alone is established through verbal engagement.

Moreover, if one accepts that it is practical engagement between humans and the environment which reveals the affordances of the environment that Inuit elders and hunters repeatedly refer in storytelling, it is no longer difficult to understand the importance of Inuktitut (Inuit language) place names in Inuit societies. This is because to show a practical engagement is no other than to show an incident at a definite place. It is not in an abstract space but in a definite place that an Inuit actually encounters and uses an affordance. Place names preserve the memory of incidents at a definite place. For this reason, in addition to functioning as an essential device for route-finding (e.g., BRODY 1976; MacDONALD 1998), Inuktitut place names function as a device for the members of an Inuit community to share a common 'memoryscape' and thereby forge and strengthen a sense of community identity (COLLIGNON 2006; NUTTAL 1992). To share common place names is to share the ocean of memory, in which relationships between Inuit and the environment — *nuna* (land) in Inuktitut — have accumulated through innumerable generations.

This is well illustrated in the following narrative of 'place'.

(Narrative F) That place [*Ihuqtuq*] is one of my father's favorite hunting grounds. He loved that place. He used to fish there and go sealing from there. However, he never hunted caribou around there. [He used to catch] only fish and seal. Because *Kuuk* River is only a little way from there, he also often went to the river to fish. [In the *Ihuqtuq* area] fish go upstream [from

Ihuqtunajuk Lake] to *NalluuRaq* Lake and *Ivitaaruqtuuq* Lake in spring. However, those fish do not come from ocean. They go upstream from *Ihuqtunajuk* Lake [which is just above *Ihuqtuq* Lake]. My father used to go to catch them. When I was still a child, I used to follow him to fish in *Ihuqtunajuk* Lake in spring. My father never fished in *Ihuktuq* Lake. He used to go to *Ihuqtunajuk* Lake, *NalluuRaq* Lake, and *Ivitaaruqtuuq* Lake in spring. He used to fish with a fishing spear at the mouths of the rivers going down to these lakes. He was an expert at spearing fish. That [*Ihuqtuq*] is a marvelous place. It is beautiful. My parent used to be there. They used to make a camp there. That is why we can see vestiges of their camp. It is beautiful. Whenever I visit there to see them, I always remember my parents. We can still see stone-built caches, tent-rings, lines of stone pillars for drying fish, racks for drying meat, and stone caches for aging fish-heads, all of which my parents made. (Summary of narrative by the elder A on August 24, 2003)

Place names are clues for the Inuit people to remember and share the history of relationships between Inuit and *nuna*, such as how the Inuit have engaged with *nuna* and its constituents through such practices as subsistence and traveling activities, all of which reveal the affordances of *nuna*. Then, through this process of sharing history, the Inuit come to know how they should act toward *nuna* and its constituents to establish a desirable relationship and at the same time how *nuna* and its constituents in turn act toward them. Furthermore, they further become well acquainted with what *nuna* and wildlife are, and what it is to be an *Inuk* (Inuit person). The Inuit become *Inuk* and become familiar as to how they should act toward *nuna* and what *nuna* is through relating and sharing history which is evoked by Inuktitut place names.

6. From Knowledge to Poetics:

The Sophia of Anti-essentialistic Essentialism

Now is the time to answer the questions I brought up in the beginning of this paper. It should be clear from what I have discussed that what Inuit elders and hunters know about is not information of the environment detached from Inuit society, but a cumulative body of the relationships between the Inuit and *nuna*, which have been established through practical engagements with its constituents in subsistence activities through many generations. They understand their environment in terms of their relationships with it and know innumerable instances of practical engagements with constituents of the environment, which show how to establish desirable relationships in order to properly realize and use the potential affordances of the environment. In this context, therefore, knowing the environment is equivalent to regulating oneself to establish desirable relationships with it, because a knowing subject would simultaneously regulate one's own activities to adapt oneself to the relationships in accordance with the situations of knowing practices. In this sense, storytelling tells the way to become *Inuk* (Inuit person) living within *nuna* (land)

because the desirable relationships with the environment show how one should act as a member of an Inuit community embedded within *nuna*.

In this sense, Inuit TEK is not *knowledge* which a knowing subject constructs in an abstract world of logic from a viewpoint detached from its objects. Rather, it is the form to which the relationships between the Inuit and *nuna* are given in verbal and gestural performances. Re-enacting past practices in engagements with *nuna* with the help of the memories, which are triggered by Inuktitut place names, Inuit elders and hunters give form to their lives, into which they have woven their various relationships with the constituents of *nuna*. Just as songs and music, as Ingold (2000) asserted, give form to the feelings of singers and players, which rise from resonant relationships between them and their environment, so storytelling enacted by Inuit elders and hunters gives form to their life trajectories within *nuna*. Accordingly, what has been referred to as Inuit TEK could best be called '*poetics of life*', in that through story-telling practices Inuit elders and hunters do not try to construct and provide objective representations of the environment independent of them, but to give forms to their own lives, in which they have become a member of the Inuit community embedded in *nuna*, establishing resonant relationships with it.

It follows, as pointed out by Ingold (2000) and Levi-Strauss (1966), that Inuit '*poetics of life*' is not an alternative science comparable to modern science, but a universal foundation of all sorts of knowing practices, including modern science. This is because, as is typically represented by Inuit '*poetics of life*', it is not until one engages with something that one can know what it is. One has to engage with known objects through such activities as observing, approaching, measuring, hunting, and eating, and then give forms to the relationships with them *prior to* knowing them as discrete objects detached from oneself. Modern science is also based on such practical engagements with *nature*, and scientists, however forcefully they might assert that they could be, are never detached from their environment (Ingold 2000). They are inevitably embedded within their environment and it is impossible to observe *nature* from a detached viewpoint, however desperately and exhaustively the institution and ideology of modern science try to obscure and suppress traces of practical engagements with their environment. Universal to all human knowing practice is not scientific knowledge, but the way of knowing/engaging practice which is typically represented by Inuit '*poetics of life*'.

Inuit '*poetics of life*', as a typical example of universal foundation of all sorts of knowing practices, could suggest a way to overcome the problem of essentialism which has confronted anthropology since the 1980s, for it provides an alternative way to establish inter-human relations as well as relations between humans and the environment. This is because Inuit '*poetics of life*' is based on the premise that not the essence, but the potential affordances of self and others can be realized only by engagement. This is contrary to essentialism in which the subject knowing from a viewpoint detached from their environment, such as anthropologists and scientists, search for and determine the essences of the objects independently of their relations with their environment in order to manage

and control the objects. If it is a knowing subject as the suppressor that determines the essences of the objects as the suppressed through knowing and managing practices in essentialism, it is the relations between self and others that reveal and realize potential affordances in accordance to changeable conditions. In short, while knowing practice is inevitably linked to controlling and managing practices in essentialism, on the other hand, to know something in 'poetics of life' is to reveal and realize the potential affordances of self and others in each practical engagement, in which there is neither an oppressing subject nor an oppressed object. In the world of Inuit 'poetics of life', there is only music of improvised sounds played by diverse lives, including the Inuit themselves, when encountering and engaging each other, sounds that harmoniously converge into a symphony that could be titled '*nuna*'. Through improvisational 'jamming' of life, *nuna* becomes full of sounds of life, and life comes to take part in the symphony of *nuna*. That is to say 'I am I and the environment' (STAIRS and WENZEL 1992), and the reverse.

In this sense, Inuit 'poetics of life' is the sophia of anti-essentialistic essentialism, in terms of which not the essence of entities, but a potential in relations is flexibly realized as the essence of a world changing according to circumstances. If there could be a single essence in the world of 'poetics of life', it would be *relation* itself, for it is only the relations practically engaged between entities that determine their essence. However, relations are not determined nor fixed prior to practical engagement, but are open to contingency. Just as it is only an accidental but fateful encounter that makes two persons a loving couple, so it is a venture to solve the problem of double contingency that creates a relationship between persons which reveals and realizes potential. It is precisely this sophia of anti-essentialistic essentialism that the elder tried to teach me through storytelling.

Accordingly, in order to overcome the problem of essentialism as well as the problems of TEK studies and thereby empower Indigenous people, we should develop a methodology of focusing on not *the essence of entity* but *a potential in relations* which is the precondition of being. We are required to establish a methodology that would come to grips with the evolutionary processes in which the potentials of relations between entities, such as human relations, the relations between human and wildlife, the relations between Indigenous people and scientists or environmental managers, are realized and evolved through contingent encounters. Moreover, practical engagements with each other in such definite fields as hunting grounds, street corners in Arctic communities, households and conference rooms may not be ignored. This methodology would take the place of the methodology to explain how entities are determined by their essence and thereby predictable for management and control as to how they would behave and function. This neither means that the history of relations should be traced and reconstructed as a socio-political-cultural construct nor that the structure of the relations should be unfolded. Rather, we should elucidate the auto-poietic mechanism of the processes, in which relations are generated by solving the problem of double contingency and then evolve into

a whole socio-political-ecological system.

How do diverse constituents of environment, such as geographical features, meteorological phenomena, wildlife, and human persons, including Indigenous people, scientists, environmental managers and people in all sorts of positions, encounter and engage with each other through such practical activities as foraging, subsistence, environmental management and all sorts of social and ecological communication? How do their relationships with each other auto-poietically evolve into a whole socio-political-ecological system? Furthermore, how should we take part in the system as a part? It is these problems that we should address. In this sense, we should holistically treat socio-political and ecological relations on a common level. Then, for that purpose we should focus on specific fields, such as hunting grounds, street corners in Arctic communities, households and conference rooms, where diverse constituents of environment evolve into a system through their practical engagements with each other. This is just as the Inuit people pay attention to the specific places where their practical engagements with environment take place and evolve into the intimate relationships between them in order to establish desirable relationships. Inuktitut place names, which evoke memories of specific places as fields of evolution of relationships, not only afford a clue for understanding Inuit knowing practice, that is, 'poetics of life', but also suggest an alternative methodology of holistically understanding socio-political-ecological relations.

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Chapter 2

‘Repetition of Different Things’:

The Mechanism of Memory in Traditional Ecological Knowledge of the Canadian Inuit

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This paper was originally published in Kazuyoshi Sugawara (ed.), *Construction and Distribution of Body Resources: Correlations between Ecological, Symbolic and Medical Systems*. (Tokyo: Research Institute for Language and Cultures of Asia and Africa, Tokyo University of Foreign Studies. pp. 79-107, 2005)

1. Introduction

‘Everything is the same every year because everything changes every year’.

This is a typical phrase often expressed by an Inuit elder I interviewed, and which always set me wondering the past two years.

I began an intensive investigation into the ‘Traditional Ecological Knowledge’ (TEK) of the Inuit, an indigenous people living in the Canadian Arctic in the summer of 2002, at Kugaaruk (Pelly Bay) in Nunavut Territory, Canada (see Map 1 in Introduction). The study was a part of the linguistic and ethnological research on Inuktitun (Inuit language) and ethno-science I have been conducting since 1992. TEK is defined as “a cumulative body of knowledge, practice and belief, evolving by adaptive processes and handed down through generations by cultural transmission, about the relationship of living beings (including humans) with one another and with the environment” (Berkes 1999: 8; c.f., Berkes 1993; Hunn 1993; Inglis (ed.) 1993; Lewis 1993; Nakashima 1991; Williams and Bains (eds.) 1993). It corresponds to what Levi-Strauss (1962) dubbed ‘science of the concrete’ based on the ‘savage mind’.

As the part of this research, I conducted over 100 hours of interviews with certain Inuit elders and skilful hunters; I was also a participant-observer of their subsistence activity, that is, hunting, fishing, trapping and gathering. The topics of these interviews varied, covering animal and plant classification, the distribution and the seasonal migration pattern of wildlife, detailed ethological knowledge of each animal, and knowledge of

climate change. Notably, it was during an interview on climate change that an elder made the above-mentioned paradoxical observation.

Global environmental change, manifest in global warming, is currently a critical international issue. Especially in the Arctic, historical processes and current climate changes, such as annual mean temperature, sea ice, and snow, are central to the discussion of environmental issues. Inuit TEK is expected to contribute to this discussion, and more importantly to the study of climate change, because their knowledge, accumulated over centuries interacting with the Arctic environment, is a source of rich and precise information on climate change. Many anthropological investigations into Inuit knowledge of climate change have been carried out in the Canadian Arctic since the mid-1990s (e.g., Krupnik and Jolly (eds.) 2002); these studies revealed that Inuit throughout the Arctic have been reporting radical climate change for approximately twenty-five years. In these reports, the annual mean temperature has been rising (especially in the western Arctic), and sea ice is getting thinner every year. Moreover, the cyclical pattern of wind and weather is reported to be so volatile that it is becoming difficult to make accurate forecasts.

Stimulated by this research, I also included the topic of climate change in my investigation and asked questions on this topic of the elders I interviewed. It was in the reply to this question that one of the elders told me, “everything (weather pattern in this case) is the same every year because everything (weather pattern) changes every year.” Then, he explained that it was hot some summers and cool others, ice was thin some winters and thick others, the weather pattern was disordered some years and well-ordered in others. In short, he explained, the weather pattern is the same every year in the sense that different climate conditions are always occurring over time. The annual change in weather patterns is the way of the world, because each annual weather pattern is unique and despite apparent similarities, never identical to any other.

Whenever I heard this kind of explanation, I was set to wondering. Why does he not explain it in this way: “the weather pattern is different every year though it seems to be almost identical?” Although these two phrases, “the weather pattern is the same because it changes every year” and “the weather pattern is different every year though it seems to be almost identical,” indicate the same phenomenon – that the weather pattern is more or less different every year –, the premises of these two expressions contrast sharply. The former expression is based on the premise that ‘what is repeated are the different things’, while the latter is based on the premise that ‘what is repeated are the identical things’. In short, there is distinct difference between the basic premises of these expressions, much as Deleuze pointed out the distinct difference between ‘only that which is alike differs’ and ‘only differences are alike’ (1994: 116). I wondered why the elder did not use an expression based on the idea that everything repeats identically (I call this idea “repetition of identical things”), but used the expression based on the idea that everything is repeated differently (I call this idea ‘repetition of different things’).

Hearing this sort of logic from the elder over-and-over, I came to believe the ‘repetition of different things’ expressed in his explanations might be the epistemological basis of Inuit Traditional Ecological Knowledge (TEK) and its underlying principle, according to which the memory of individual hunters is organized. Then, I hit upon the idea that the ‘practical knowledge’ or ‘embodied knowledge’ of their subsistence activity is based on the effective use of memory, organized according to this epistemological principle, the ‘repetition of different things’.

This insight is the starting point of my analysis. In it, I investigate the role of memory in the ‘practical knowledge’ or ‘embodied knowledge’ at work in the subsistence activity of the Inuit hunters, based on my own research in Kugaaruk (Pelly Bay), Nunavut, Canada from 1992 to the present.

Firstly, in section 2, I show that we should focus on the mechanism of the memory functioning over the passage of time, in order to analyse the mechanism of ‘practical knowledge’ or ‘embodied knowledge’, which plays a crucial role in Inuit subsistence activity. Secondly, in section 3, by examining the meaning of the idea ‘repetition of different things’ in the socio-cultural context of Inuit society, I demonstrate that the memory of individual hunters is actually organized according to the principle expressed in this idea. Thirdly, in sections 4 and 5, I analyse two aspects of Inuit TEK, in order to address the mechanism of memory Inuit hunters utilize as a resource in presenting knowledge and practicing subsistence activity: 1) the discourse (especially hunting stories) of Inuit elders and skilful hunters; and, 2) their mode of subsistence activity. Based on this analysis, I propose a hypothetical model concerning the mechanism of memory. Finally, based on this premise, I propound the hypothesis that the innumerable fragmentary episodes accumulated in the memory of each hunter is the most important resource of Inuit hunting activity, and that memory incorporated with body is the field where the past is transformed into a resource for present and future activity.

2. The Importance of Memory in Hunting, Fishing, and Gathering Activities

Because the unexpected often occurs during the course of subsistence activity, it is extremely difficult, if not impossible, to predict what will actually happen on the land, though it is possible in some degree to estimate the outcome of the activity. Therefore, hunters practicing subsistence are required to cope spontaneously with unexpected accidents according to circumstances, rather than to follow a detailed advance plan.

As pointed out by many Arctic anthropologists (e.g., Briggs 1968; 1970; 1991; Brody 1975; Morrow 1990; Nelson 1969; Omura 2002; 2005; Willmott 1960), the Inuit recognize and often emphasize the importance of flexibility in coping with the unexpected during both subsistence and mundane activities. According to the Inuit paradigm, a person who is able to accept and cope with accidents in a flexible composed manner is regarded as

‘mature’ with *ihuma* (reason), while the person who persists in pursuing their predetermined strategy (like the *Qaplunaat* [white people]) is regarded as ‘childish’ (Briggs 1968; 1970; 1991; Omura 2002; 2005). The ability to adaptively cope with changing circumstances is appreciated by the Inuit as one of a hunter’s most important virtues.

In reality, no Inuit hunter goes hunting without advance planning; it is indispensable as flexibility and spontaneity are to their success in subsistence activity. In my experience, every hunter always goes hunting with some expectation or rough plan of action based on his intimate knowledge of the seasonal migration patterns of wildlife (c.f., Omura 2004). It has also been reported by many anthropologists (e.g., Krupnik and Jolly (eds.) 2002; Nelson 1969) that Inuit hunters are able to make accurate predictions about the weather and wildlife migrations, based on their knowledge and careful observation of their environment. Without this sort of estimation, it would be impossible to locate migrating game on the vast tundra. However, once hunters are out on the land, it is impossible for them to follow advance plans exactly because environmental conditions such as weather and animal behaviour change unpredictably and incessantly.

In most of the more than eighty hunting trips in which I participated, the target game changed from one species to another according to circumstances (cf., Omura 2004). Hunters often encountered game unexpectedly, or sometimes were informed by radio about a nearby herd and accordingly changed their target. Of course, in the latter case, the hunting ground and their route to it would change corresponding to the new target, so long as the hunting party had enough fuel and food. Hunters might be required to shelter themselves when the wind became stronger, or to repair an engine if it failed. The ability to take advantage of opportunities and cope with changing circumstances is indispensable to hunters’ subsistence in a changeable environment.

This ability acquires greater importance in elements, which comprise the flow of hunting activity, such as operating snowmobiles or boats, tracking game, handling a fishing spear or harpoon, shooting a rifle, butchering game, and so on. For example, alertness is essential to fishing with a spear, because hunters have to take advantage of the slightest opportunity in order to succeed at fishing. Even though driven into stones weirs where their movement is restricted, fish swim about trying to elude the hunter’s grasp. Therefore, in order to succeed at fishing, hunters must read the fish’s next move and utilize the river’s flow; they must employ intelligence immersed in practice, with flair, sagacity, intellectual flexibility, resourcefulness, an eye to opportunity, and so on. Of course, this goes for all manner of activity, whether operating snowmobiles or boats, tracking game, shooting a rifle, and so on. It seems reasonable to say that intelligence – immersed in practice – is employed in all spheres of subsistence activity and plays a crucial role in them. In this sense, understanding the reality of subsistence activity is nothing more than understanding this form of intelligence, which plays such a pivotal role in it.

However, it is not easy to understand the mechanism of this intelligence, because it is an unconsciously employed intellectual ability, never articulated in words. It corresponds

to the intellectual skill known as ‘practical knowledge’ or ‘embodied knowledge’. In order to probe the mental process that makes it possible, it is not enough to simply analyse a hunter’s tale of the chase, because this reflective skill is unconsciously employed before words even come to mind, and cannot be represented verbally. Likewise, it would also be impossible to understand the mechanism of this skill by analysing physical movement, because no matter how precise the measurement, description and analysis of a hunter’s subtle physical movements – the hunter’s mental processes remain concealed.

Therefore, in order to analyse the mechanism of intelligence immersed in practice, we are required to create a new methodology based on analytical methods different from both discourse analysis and quantitative analysis of body movement. In so doing, Michel de Certeau’s explanation of the mechanism of ‘tactics’ is helpful, because of his notion that the form of intelligence, such as ‘*metis*’ in Greek and the wisdom of hunters, must be immersed in practice (1984). It is this form of intelligence, which corresponds to ‘practical knowledge’ or ‘embodied knowledge’, which Certeau labelled ‘tactics’ in opposition to ‘strategy’, which is the principle of ‘modern’ forms of intelligence, including scientific reason; he differentiated the basic mechanisms of ‘strategy’ and ‘tactics’.

According to Certeau (1984: 36), strategy is the mode of practice, in which the subject, standing from a viewpoint isolated from and commanding a sweeping view of the environment, controls or manages an objectified environment. In this mode of practice, typical of modern science (especially of simulation), the subject tries to establish a field independent of environmental variability, in order to acquire and manipulate accumulated environmental information. In this field, the caprices of time are transformed into readable spaces that can be observed and measured, and thus controlled and manipulated. Through this process, unpredictable temporal relations are transformed into stable and thus predictable spatial relations. By applying the result of this manipulation of the field to the actual environment, the subject tries to objectively control and manage the uncertainties of environment. In this sense, this strategy reduces the uncontrollable ambiguity of temporal relations to the readable, controllable spatial relations; it attempts to master time through the transformation of temporal uncertainty into spatial stability and predictability.

On the other hand, Certeau maintained that tactics are ‘procedures that gain validity in relation to the pertinence they lend to time’ (1984: 38). He believed tactics are the mode of practice in which an individual who is embedded in the environment and thus unable to objectify it, copes with their surroundings, taking advantage of opportunities according to circumstances, without generalised strategic planning. In this mode of practice, an individual embedded in the environment tries to read the relations between successive moments and seize the opportunity to transform circumstances into a more favourable situation. As soon as opportunity permits, an individual instantaneously conducts ‘*bricolage*’ of spatial relations using their memory, inserting fragments drawn from memory into a particular circumstance in order to reconstruct more favourable conditions.

In other words, in this mode of practice, an individual immersed in given, established

spatial power relations tries to transform seemingly fixed unfavourable interactions into favourable relationships – much as a judo master grapples with an overwhelmingly strong opponent. They must take advantage of opportunities offered by the passage of time by inserting a remembered move into the spatial relations between self and opponent. In this sense, tactics are the mode of activity, aptly described in the proverb, ‘soft and fair goes far’. In contrast with strategy, in which humans “pin their hopes on the resistance that the establishment of a place offers to the erosion of time” (Certeau 1984: 38), tactics pins its hopes ‘on a clever utilization of time, of the opportunities it presents and also of the play that it introduces into the foundations of power’ (Certeau 1984: 38-39).

Thus, it seems reasonable to infer that an opportune utilization of memory over the passage of time would play an important role in tactical practice, manifest in the ‘practical knowledge’ or ‘embodied knowledge’ functioning in subsistence activity. Certeau’s explanation of the tactical mechanism applies to any kind of subsistence activity. In the case of spear-fishing, a hunter immersed in circumstance catches fish by employing a *bricolage* of spatial relations through the use of memory, that is, ‘reading’ the next movement of the fish, then, as soon as opportunity permits, inserting the movement for spearing into the relations between himself and the fish. In other words, the given and uncontrollable movement of a fish is transformed into a new and favourable *ensemble* in harmony with the hunter’s movement, by *bricolage* of spatial relations involving recalled movement.

Therefore, we must probe the mechanism of memory functioning over the passage of time, if we are to understand tactics such as ‘practical knowledge’ or ‘embodied knowledge’ for their relevance to subsistence activity. So, how does memory, which makes tactics possible, function in subsistence activity? In the following sections, I consider the structure and mechanism of Inuit hunters’ memory.

3. Respect for Uniqueness:

The Socio-cultural Meanings of ‘Repetition of Different Things’ in Inuit Society

In probing the mechanism of memory in Inuit hunters’ subsistence activity, it is helpful to examine the idea of ‘repetition of different things’ epitomised at the beginning of this paper by the elder’s phrase. The notion seems to indicate a principle according to which the memory of each Inuit hunter might be organized.

If it were true that Inuit hunters assumed everything in the world is repeated differently (as the elders expressed), they would try to memorize every instance of repetition as carefully as possible, not to abstract a generalized principle or pattern from these instances, because every repeated instance is unique and non-interchangeable. On one hand, the idea that ‘everything is repeated identically’ might lead to a mental attitude in which one paid attention principally to the similarity among repetitions and therefore overlooked their different details. On the other hand, the idea that ‘everything is repeated

differently' might lead to a mental attitude in which one carefully observed the different details among all instances, and committed them to memory as accurately as possible, with the expectation 'what will be repeated' next time would be different from 'what was repeated' the last time. In short, the idea that 'everything is repeated differently' inevitably leads to a vigilant mental attitude in which a person commits to memory every single repetition, even if they seem to be almost identical, preserving them in their entirety.

Indeed, Inuit hunters are sensitive to and carefully consider the subtle details and differences of phenomena; they are able to remember entire events, based on careful observation, and cultivated memory. When I asked an elder to tell me about hunting trips he took during the five years before sedentarization in the 1950s, he was able to reconstruct and retrace the different routes he had actually travelled each year, using a 1:250,000 scale map (see Figure 1 in Chapter 1). He then vividly related stories about each trip's experiences, using numerous gestures. In his story, subtle details of these hunting trips were demonstrated in sequence (see the story cited in section 4). He discussed campsites, places where they cached food, tools, sleds and so on, camping and hunting terms, the places where they saw and hunted game, behavioural patterns of the game, hunting methods, the amount of game they took during each hunt, and changes in weather during each trip. He also mentioned various social events and changes in social relationships among relatives. In short, the elder was able to remember the experiences of each trip without confusing one year with another, even though he took these trips over fifty years ago.

Many anthropological studies have already pointed out these characteristics of Inuit knowledge (e.g., Arima 1976; Boas 1888; Briggs 1968; 1970; 1991; Brody 1976; Ferguson and Messier 1997; Ferguson, Williamson and Messier 1998; Freeman 1976; 1985; 1993; Gunn, Arlooktoo and Kaomayok 1988; Nelson 1969). It has been shown that their environmental knowledge is exceptionally precise and detailed, based on careful observation and excellent memory, and organized into a personal histories and oral narratives, sequential repositories of their ancestors' as well as their own experiences. Moreover, maps drawn by Inuit have been often described as most impressive examples of detailed environmental knowledge (Rundstorm 1990; Spink and Moodie 1972; 1976). Indeed, Inuit maps have a reputation for elaborately expressing subtle details and differences in geographical features, and often compare favourably with modern topographic maps, showing the Inuit regard for the subtle detail and difference so vital to their subsistence. In general, every instance of annual and seasonal repetition in natural phenomena and subsistence activity is individually stored in the knowledge of Inuit hunters.

Inuit hunters' tendency to regard the uniqueness of events as important and to commit to memory every single event, is also expressed in their cultural ideals, especially as 'reason' (*ihuma*), one of the most important attributes of the ideal personality in Inuit society. As I pointed out in other papers (Omura 2002; 2005), according to Inuit, to uniformly generalise and rigidly define the nature of others and the environment is

considered ‘childishly unreasonable’, because different individuals have different experiences. Any existence is considered to have manifold potential, which should not be reduced to a unitarily rigid definition, but be utilized as occasion demands. Inuit society is permeated by a cultural ideal, according to which the generalization of experiences and the reduction of complex phenomena to a single simple principle is characteristic of ‘childishly unreasonable’, whereas committing to memory of all unique events as completely as possible is characteristic of ‘mature reasonable’ thought.

Furthermore, the characteristics of Inuit Traditional Ecological Knowledge (TEK) or Inuit Knowledge (*Inuit Qaujimajatuqangit*) result from Inuit hunters’ tendency to respect the uniqueness of events and commit to memory every single experience. Many anthropologists have pointed out that Inuit TEK contradicts modern science (e.g., Bielawski 1996; Collings 1997; Ferguson and Messier 1997; Ferguson, Williamson and Messier 1998; Freeman 1985; 1993; Freeman and Carbyn eds. 1988; Nadasdy 1999; Nakashima 1991; Omura 2005; Stevenson 1996). While modern science is quantitative, purely rational, analytical, reductionist, and based on a dualistic world-view in which nature is regarded as separate from the human domain, Inuit TEK is qualitative, intuitive, holistic, and based on monistic world-view in which humans are viewed as part of nature (see table 1). Indeed, if one assumed that ‘what is repeated’ is comprised not of identical things but of different things, one would endeavour to intuitively, qualitatively and holistically grasp the *gestalt* of events and to encode all the discrete, unique events as anecdotes and stories—not to analytically, rationally and quantitatively reduce complex phenomena to generalized principles. Moreover, generalization based on the premise that ‘identical things are repeated’ inevitably generates the distinction between the categorising subject and the categorised object. This leads to a dualistic world-view in which nature is regarded as antithetical to the human domain. On the other hand, respect for uniqueness based on the premise that ‘different things are repeated’ depends solely on insight into unique events, before any distinction between subject and object arises, and never culminates in a dualistic worldview.

Traditional Ecological Knowledge	Modern Science
qualitative	quantitative
intuitive	purely rational
holistic (context bounded)	reductionistic (analytical)
mind and matter are considered together	separation of mind and matter
spiritual explanation	mechanistic explanation
moral	supposedly value-free
based on empirical observation and accumulation of facts by trial-and-error	based on experimentation and systematic, deliberate accumulation of facts
based on diachronic data (long time-series on information on one locality)	based on synchronic data (short time-series over a large area)
does not aim to control nature	aims to control nature
is not primarily concerned with principles of general interest and applicability (ie., theory)	concerned with principles of general interest and applicability (ie., theory)

Table 1: Difference between TEK and modern science (summarised from Berkes 1993; 1999; Freeman 1985; 1993; Gunn, Arlooktoo and Kaomayok 1988; Stevenson 1996)

Thus, the aforementioned elder's phrase seems to indicate that the 'repetition of different things' is fundamental to the Inuit socio-cultural context, as confirmed in hunters' capacity to remember discrete events. Every instance of repetition in each hunter's past environmental and subsistence activity is stored one by one in their memory, though occasionally details are forgotten. So, how are repetitions stored and ordered in each hunter's memory? In the next section, I will probe the memory structure of an elder Inuit hunter through analysis of his hunting story.

4. The Multilayer Collection of Experiences:

The Hypothetical Model of Memory from the Analysis of Hunting Stories

The story cited below is the part of a hunting story, related by the elder whom I cited at the beginning of this paper. In response to my request that he talk about caribou hunting trips to inland regions over the five years just before sedentarization (over fifty years ago), he vividly related detailed stories about each trip in sequence, retracing the routes he actually travelled each year, using a 1:250,000 scale map (see Figure 1 in Chapter 1).

Before the actual analysis, it should be noted that in terms of interviews with other elders and experienced hunters, his story is quite usual, the sort any experienced hunter might relate. As well, when in Ottawa I happened to show the video recording of this interview to an Inuk curator from Labrador, she gazed wistfully at it and told me that her grandfather always talked about old times in the same manner. Therefore, it seems reasonable to suppose that the story cited below is representative of hunting stories related by experienced Inuit hunters from other areas. Based on this supposition, I will probe the memory structure of this individual by analysing his story, though I accept that the universality of this analysis remains unproven.

The following is a summary of part of the elder's story in which he talks about his experiences during his first hunting trip inland to hunt caribou, after he got married.

- (1) I got my wife over there in *Ittuaqturvik* (place name; bay) in winter. I think it is in January, because the sun started to shine though it was still low. After we got married, we went back to *Ihuqtuq* (place name; lake), because it was turning to spring. It was not cold any more. It did not get dark any more. We travelled back that way [on the map]. We went by *Umngilitaittuq* (place name; bay), by *Iqigtunaarjuk* (place name: lake), by *Avataqpauqhuk* (place name; lake), by the small lake, we call *Amiqhanngiq*, by the bay, we call *Kangiqhuk*. We followed that route and crossed Pelly Bay around here. We went that way to *Ihuqtuq*.
- (2) Later, we spent the summer in camp right here [on the map] at *Ihuqtuq*, where my parents always stayed when I was a child. Only our family was here. My parents spent every summer here at *Ihuqtuq*. My parents were always at *Ihuqtuq*, when I was a child, while I was growing up. That summer when I got married, my wife and I spent the summer and winter in *Ihuqtuq*.

In winter, we hunted fox with our dog team just around here and there, across the bay. We travelled everywhere by dog team, because we all had dogs. We hunted for food over there. We, myself, and another person, used to hunt for seal around here.

- (3) Then, spring came again, and we never spend spring here in *Ihuqtuq* anymore. We went up there, inland for the first time. When the snow began to melt in early spring, three of us, me, my wife, and brother-in-law, travelled that route by dog team, because there was still snow. We had a small sled made from wood. I think it was long. I think we had four dogs. However, my sled was too small to carry the three of us. Because we really could not find much wood, we had only a small sled. We always walked. We took this route. We did not use this river [on the map], which we called *Nurraqhiurvik*. Instead, we took this route and then that way to this lake here. We passed the lake and moved on this way. Then, around here, we changed direction. Later, around here, we are starting travelling this way, when the snow was already melting. We took this route. We slept many times. I actually forget how many nights and where we slept. I forget where we camped overnight. Then, we took this route because the river was still not running. We travelled this way down there.
- (4) When we were around here [on the map], I saw four caribou. They ran down here. We pursued and took the caribou around here. I made *mipku* (dried meat) with my late wife. After we finished making *mipku* (dried meat) around here near *Tuluqqaat* (place name; mountain), we went fishing in the small lake around here. There were many small fish in that lake. They were all small. We caught many fish. We had a small pot, which was little and narrow. We put the little *ihuraarjut* (lake trout) in it.
- (5) We took this route because the ice was starting to melt. We left our small sled and *mipku* (dried meat) we had made behind in here [on the map]. When summer was approaching, we went there. We could not return by that route any more. We were carrying our stuff on our backs. All of us packed it on our backs, all the way. Then, we pitched our tent in that place for the first time and went to *Qitnguqliq* (place name; lake). We pitched a second next tent there in *Qitnguqliq*. We went there because it had small fish too. I caught five *ihuraarjut* (lake trout) and *iqalukpik* (land-locked Arctic-char). Those fish are all quite nice and quite big. *Iqalukpik* (land rock char) do not migrate to the ocean, although they look like *tariurmiutaa* (Arctic-char). They are always called *nutiqliq*, because *nutiqliq* does not migrate to the ocean. After we slept, I caught five fish because my dogs had nothing to eat. When caribou passed nearby, I hunted here. My little wife started making *mipku* (dried meat). Then, the next day, when I saw more caribou around here somewhere around this place, we invited my brother-in-law to hunt caribou with me. As we travelled towards them, the mosquitoes bothered us. We were really walking here. After I took the caribou, we carried them on our backs and brought them back to the camp here in *Qitnguqliq*, in which there were also many fish.
- (6) We caught many fish. We always used *naulingniut* (fishing spear) in that month. I speared many times, and caught three big *iLuuq* (full-grown trout) in that *qamaniq* (deep and wide part of river). There is a *qariaq* (shallow and narrow part of river), between the mouth of the river going down to the lake and the *qamaniq*. It was muddy, very shallow, and very narrow. It

looks like a small lake. There are many fish. I went in the water this deep (up to my waist or chest) in the *qariaq*. When the fish went into the *qariaq* from up there, my late wife tried to keep the fish from going down to the lake, though the fish were determined to go there. When the fish tried to go down there, she chased them with handle of fishing spear. Then, I speared them. I caught many fish. We caught many *ihuraarjut* (lake-trout) and *iqalukpit* (land-locked Arctic-char) around there. They were very big. I could pack only two big full-grown *ihuuq* (lake trout), because they were getting too heavy. Therefore, I left quite a few *ihuraarRut* (lake trout) behind. Therefore, we carried some home and returned to that lake to get the rest. Then, my wife cut up the fish and made *piphit* (dried fish).

- (7) While we were still here, we were also walking over this way [on the map]. We also saw many fish in the mouth of this river here. It was very close. In those days, we always left around six o'clock in the morning and arrived there at seven. It is quite close. This part of the river looks like a lake. It is very shallow and quite wide around here. Three of us speared many fish there, because there were plenty of *ihuraarjut* (lake trout). We always started to spear fish with a *kakivak* (fishing spear) or *naulingniut* (fishing spear) around seven o'clock in the morning. Then we fished all day long and continued to do so all night until dawn the next day. There were many fish. Because of stabbing with a *kakivak* (fishing spear) all day long, our hands were swollen [by handle of the *kakivak*]. They were very swollen.
- (8) When we finished fishing at *Qitnguqliq* (place name: lake), we lengthened our dog harnesses and made a long rope for drying fish. Then, two of us, my then brother-in-law and I, strung that rope through the fish's gills and strung them along shallow part of river to dry them. It was very long. We strung many fish on rope. There were many fish. It was fun in those days. I remember how much fun it was.
- (9) Then, when we had finished drying the fish, the ice broke, and the caribou moulted their winter coats. In those days, we were always around that lake, when the caribou still had their winter coat. While we were there, we always spent the spring catching fish. This is because the hide is not good for clothes when caribou still have their winter coat. We always wait until they moult around here at *Qitnguqliq* (place name; lake). Then, when they had moulted, we finished making *mipku* (dried meat) and *piphit* (dried fish), and went by this route to hunt caribou, because their hide was by then good for clothing. We went straight to *Tulukkaan* (place name; mountain) in September.
- (10) I do not know how many nights we stayed there. I do not know how many caribou we took. We took lots a caribou around there. Then, after they dried, we left them behind. We stayed around this inland place [on the map] until fall. We made a camp here and stayed for a couple of days. Then we made a camp over here all summer.
- (11) We reached somewhere near *Avalitquq* (place name; river) in the middle of the night. There is a high hill. We had a tent on its top. Then, after pitching the tent, I started looking around from the top. There were many caribou around the river. I took many caribou there throughout that summer.
- (12) My late cousin, my brother-in-law and my mother's brother were already around this place [on

the map]. Then, three of them caught sight of my tent. After the river started freezing, they visited me. They walked from there at the sea, *Kuugarjuaraarjuk* (place name: river). They had not yet taken enough caribou there. When they arrived here, they saw us with binoculars and visited us. I camped together with them.

- (13) When we were around here [on the map], I took many caribou. I can remember there was twenty-three in all. We took many caribou. My late wife collected marrow every time I took caribou. Every time I walked home with some, she hit the bones and removed the marrow, and stored it in the stomach of a baby caribou. When the baby caribou stomach was quite full, the rest of the marrow was stored in a bag made of the heart's outer membrane [pericardium]. I took many caribou around here in those days. When I first went there, my wife and I were very young. I took many caribou that summer.
- (14) Then, we cached the caribou hides we took under a very big rock that rests on the ground. We made the cache, putting smaller rocks close to each other around that big rock. Then, we packed many hides into three big bull caribou hides and put them inside it. A caribou hides bag for storing hides and gear is called a *qillaaqtaq*. We always made some small holes along edge of the *qillaaqtaq* and put the other small hides in it. Then, we tied up it with a string and stored it in the rock cache. That bundle of hides all tied up was heavy, though it is just made of dried hides. The place we cached caribou hides is called *Anmivik*. There is a big rock resting on the ground in *Anmivik*.
- (15) Material made of more than one bull hide is used for blankets and mattresses. Other hides are used for clothes. Because women wanted nice clothing, they always checked the nice hides for their clothing. Women always tried to make clothing with nice hides, but they did not look for nice hides for the men's clothing. That is how it has always been. When a hunter took many caribou, his older brother, his younger brother, and his parents used those hides for their clothing. That is why we went inland up there. We looked for the material for clothing for an older brother, a sister-in-law, a younger brother, and for our parents. We also looked for material for bedding.
- (16) When we finished working on hides right there, we carried them down to *Kuuk* (place name; river) around there [on the map]. We returned by the same route that we used to go there. By *Qitnguqliq* (place name; lake), we went this way, through *Haviktalik* (place name; lake) and then *Ihuqtuq* (place name; lake). We went down there along the river and straight to *Quunnguarjuk* (place name; the part of *Kuuk* River). I do not remember very well how many times we slept. We came from here and slept over around here. Then, when we crossed here, we slept again right here. My late cousin left us right here, because he had left his stuff there [on the map]. He started over that way, when we started down this way. The three of them back to the place where they had left behind their stuff, such as tea and tobacco. When they started to go that way, my late brother-in-law wanted to join him. Then, we took this route to around here, and continued towards here [on the map].
- (17) While we went there, we saw caribou tracks. I made an igloo [snow house] to stay over night here, because it had already snowed. After spending the night right here, it got to be daylight.

Because I could see clearly, I started to search for caribou. There were many caribou very close by. I shot fifteen caribou here. I left my brother-in-law around here, because I had only few bullets left but the caribou were still close by. After I shot them, he arrived right around here and shot some more, before they could run away. I do not know how many caribou he shot. We took many fat caribou, because there was already snow.

- (18) Then, my second daughter was born around here [on the map]. I think she was born right here. She was adopted by my relatives.
- (19) After that, we went down to the sea, to right here [on the map]. We packed our stuff on our backs and carried our baby. Women used to carry small packs, not such big packs, on their back, and carried the babies. They also carried their pots in their hands. We packed our sleeping gear on our backs as well. Our dogs carried food on their backs.
- (20) Then, when we arrived here [on the map], we left some of foods and hides behind. We let our dogs carry food, but not all of it. They carried food down to there. There was just enough food for us. We spent the night at *Haviktalik* (place name: lake). We spent another night over here right at the bottom of *Qurluqtuq* Fall (place name; the part of *Kuuk* River). I think we overnighted right here in *Hitlaqtalik* (place name; the part of *Kuuk* River). Then, we spent a night around here in *Qinngaaqut* (place name: mountain). When we came along here, we reached *Qunnguarjuk* (place name; the part of *Kuuk* River). Then, we went down around there. When we reached *Mattuq* (place name; the part of *Kuuk* River) and *Qunnguarjuk* (place name), my late brother took some caribou hides I had brought with me. I also brought some to my father, because he was in *Mattuq*. I also brought that food for my mother.
- (21) We went to inland up there only in spring and summer, because we did not travel so far in the other seasons. It is quite tiring, when we walked. We only travelled such a long distance in one day in the summer.
- (22) Then, after we had reached *Mattuq* and our fish catch was decreasing, my late brother and we went this way to get the caribou hides we had cached there. We went by *Uatnaqlik* (place name; river) from here by dogsled, because each of us had a sled. Our sleds were loaded with hides. I do not know exactly how many nights we spent over there. It was more than three days by sled to get there from here, because the daylight was short. We could only travel a short distance, when the day was short. Because we did not have headlights, it was hard to travel. This is why we could only travel short distances. After it got so dark, trails could not always be seen very well. However, it was fun. It was truly enjoyable.
- (23) We used to overnigh there. It was great fun. It had many fish around here at *Avalitquq* (place name; river). We always went fishing in the lake at *Aimauqattalurjuaq* (river), *Avalitquarjuk* (river), and *Inirjuaq* (lake). We also fished at *Aatkuat* (river), *Kuuk* (river), *Uatnaqlik* (river), *Kuugarjuaq* (river), *Kuugarjuaraarjuk* (river), *Tahijugjuaq* (lake), *Tinitjarjuut* (river), *Tinitjat* (river), and then, *Tinippajuk* (river). These rivers had fish migrating up them. In the rivers lying north of the *Kuugarjuk* (river), fish do not really migrate. Only in these rivers, which lie south of the *Kuugarjuk* (river), do the fish swim upriver.
- (24) We Inuit living in *Kuugaarjuk* always ate fish. We ate fish all summer, and all winter. A

person from *Iglulik* (neighbouring village) who used to come around marvelled that the Inuit living in *Arvilangjuaq* (Pelly Bay) ate many fish every day. Someone else who used to visit from *Iglulik* used to say that the Inuit of Pelly Bay could not stop eating fish.

- (25) Only these rivers [on the map] have always been good for fishing. The fish in that area are not like the fish in this area. These rivers have darker fish, because these rivers are always muddy. The fish skins around here are thin and redder. These fish were truly loved by people from all over the Arctic. They are very good fish.
- (26) When I caught a fish with my *kakivak* (fishing spear) the very first time at *Inirjuaq* (lake), right here [on the map], I cried because I could not keep them. My uncle who was fishing near me came to me and filleted a fish as soon as I pulled a fish out of the fishing hole. Then, the people from the camp ate it. I did not want to give them my fish, because I was a child. I cried a lot.
- (27) It was always like that in those days. Our ancestors did the same thing. Then, my uncle did the same thing again in the spring of that same year. When I pulled a big trout out of a fishing hole over there at *Tahirjuaq* (lake), he came and filleted it again. As soon as I pulled it out, the people at the camp started to eat it. When they started to eat, they told me to eat with them. However, I cried again, because I wanted to keep it for food. I did not want to share it. I still remember those fish.
- (28) We believe, if one eats one's first game as soon as one takes it, one will have lots of luck at hunting, and become skilled at hunting animals. This is why, my people always tried to finish the first of any animal I took, right away. One could be smart later in one's life, could be smart at hunting animals, if the very first of any animal he took were eaten right away, whether it be seal, caribou, or fish. Because my grandfather wanted me to be smart, the people always tried to finish it right away whenever I took my first one.
- (29) After that, we spent our time at *Kuuk* (river), when we came back right here [on the map]. We stayed at *Ihuqtuq*. Then, we went seal hunting on the sea ice. We never stopped hunting. We always did that. We looked for animals; whichever were easy to catch. We never stopped in those days.

[Summary of the story told by an elder on August 8, 2003]

The story cited above and the routes (see Figure 1 in Chapter 1) immediately make it clear that the elder certainly memorized every event, repeated differently each year. He did not confuse the slightly different routes travelled each year from year to year, as is clearly illustrated in Figure 1. Furthermore, discrete subsistence activities are elaborately reconstructed as a series of discrete, unique events, and not expressed in a generalized form.

It may be inferred from the foundational structure of this story that innumerable events 'repeated differently' are not disordered or randomly stored in his memory, but arranged according to a clear structure. The survey reveals his way of talking throughout the whole of this story relies on certain repeated typical phrases, for instance: 'when it

comes to be... one began to...', 'leaving... one reached...', 'after finishing... one started to...', 'because one saw caribou, one shot one of them with rifle', 'because there were many fish, one fished', and so on. Examination of the story's structure, paying special attention to this form of expression, reveals that his story is composed of a chain of episodes, which are repeated in different ways again and again, as unique and non-exchangeable events delineated by a starting point and an end point. In addition, one can easily recognize that the innumerable episodes composing the story are not linearly linked, but are constructed like nested boxes so that the episodes repeated in a shorter cycle are incorporated into the episodes repeated in a longer cycle (see scheme in Figure 2). For example, travelling activity from one place to another and each hunting and fishing activity is incorporated into episodes repeated in a longer cycle, such as subsistence activities repeated throughout annual and seasonal cycles.

Accordingly, it seems reasonable to infer that the episodes are not stored at random but are arranged according to the length of repetitive cycle in the memory of this elder. The episodes are classified according to the length of its cycle, with episodes incorporated with each other according to two rigid rules. Firstly, the repeating episodes in a longer cycle are never incorporated into the repeating episodes of a shorter cycle. Secondly, the repeating episodes in the same cycle, such as caribou hunting and seal hunting, are never incorporated with one another, but arranged in a parallel manner. In short, we can consider the innumerable unique and un-exchangeable events stored in this elder's memory to be arranged in a multilayered collection of experiences, according to the length of its cycle. Analysis of this hunting story shows that the host of episodes stored in his memory is assembled into the following levels:

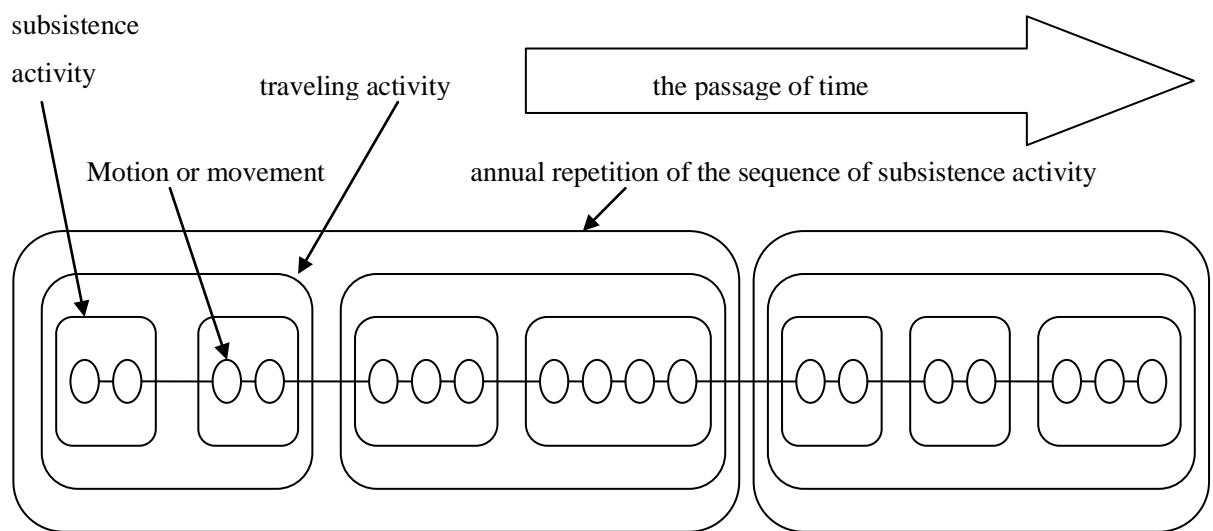


Figure 2: The foundational structure of the story

(Level 1) Annual repetition of the sequence of subsistence activity

First, the level of annual repetition of the sequence of subsistence activity is presumed to be the highest level. At this level, every instance of annual cycle repetition in the sequence of subsistence activity, which each hunter experienced in his life, is memorized by year. The instance memorized at this level is presumed to shape a long chain of events, which is composed of four seasonal sequences of subsistence activity or, more strictly speaking, the thirteen monthly sequences of activity, according to the Inuit calendar. Any experienced hunter, including the elder relating this story, is able to reconstruct a continuous flow of events by year.

(Level 2) Travelling activity from one place to another

Below the highest level is presumed to be the level of travelling activity from one place to another. At this level, every instance of travel, which the hunter innumerable and differently repeated in the past, is memorized separately. In the story cited above, these instances are expressed by such a phrase as ‘leaving ..., one reaching...’ The cycle of repetition at this level is supposed to correspond to a daily cycle, because the travel activity is usually practiced only during daytime.

(Level 3) Subsistence activity

Below the second level is presumed to be the level of various subsistence activities. At this level, every instance of the various sorts of subsistence activities, such as seal hunting, caribou hunting, polar bear hunting, fishing, and berry picking, etc. is presumed to be memorized separately. The instance memorized at this level is shaped into a chain of motions or movements, such as ‘tracking game—finding target game—shooting it with rifle—butchering—drying meat—caching’. In the story cited above, the instances memorized at this level are expressed in such phrases as ‘when I saw caribou, I shot one of them with rifle, and butchered it, then cached them’, ‘because there were many fish, I fished then filleted, dried, and cached them’, and so on.

(Level 4) Motion or movement

Under this level of subsistence is presumed to be the level of motion or movement. At this level, the innumerable instances of repetition of various kinds of basic motions or movements, which compose and are indispensable to various subsistence activities, such as seal hunting and caribou hunting, are memorized separately. The instances memorized at this level are also shaped into a chain of more detailed motions or movements, for instance: ‘taking a rifle—loading it—loading the first cartridge—pushing off the safety—having it ready—pointing one’s rifle at a target game—pulling the trigger—putting the safety catch on—removing the cartridge case from the chamber—removing the magazine from the rifle—returning the rifle to safety’ (indispensable when shooting a rifle). In the story cited above, the instances memorized at this level are expressed in such phrases as: ‘when I finished

fishing, I extended the dog harness to make a long rope and threaded the fish on it', 'after I built a cache, I wrapped many caribou hides in a big caribou bull hide and then put them into that cache' and so on. In general, the instances memorized at this level are often contracted into simple phrases, such as 'I dried the fish (I made dried fish)', 'cached caribou hides' and so on, without detailed explanations. They are related elaborately only in the cases where the events require detailed explanations or impressed the speaker.

Moreover, it may be inferred from the examination of relations among the episodes composing this story that the instances of repetition stored in the elder's memory are not isolated from, but are linked to each other through a network of associations.

First, the innumerable instances assembled into the above-mentioned levels are vertically linked to each other by synecdochical association, in which the conception with a smaller denotation (i.e., species) is related to the conception with larger denotation (i.e., genus) as parts of the whole. The episodes that are repeated in a shorter cycle and thus have a smaller denotation are incorporated into the episodes that are repeated in a longer cycle and thus have a larger denotation. In paragraphs 3 to 22 of the story, it can be recognized that four instances located respectively at different levels are associated with each other synecdochically. First, an instance in the level of motion or movement, that is 'threading the fish to a rope' (paragraph 8), is associated with and incorporated into an instance in the level of activity, that is 'seeing many fish—capturing fish with a fishing spear—bringing them back to the camp site—drying them' (paragraph 7-8). This instance is in turn associated with and incorporated into an instance in the level of travelling, that is 'leaving... I reached...' (paragraph 5-9), which is finally associated with and incorporated into an instance at the level of *annual repetition of the sequence of subsistence activities* (paragraph 3-22).

In addition to this synecdochical association, it may be inferred that metonymical association, which connects conceptions spatially and temporally adjacent to each other, functions as a device for horizontally connecting the instances located in the same level. For example, as is illustrated by the phrases repeated in this story, 'then' and 'finishing... I started to do...', episodes are successively joined one after another according to temporally adjacent relations in the plot development. This is thought to indicate that the plot development of this story is based on the metonymical association in terms of temporal relations among episodes. Moreover, it can be easily recognized that spatially metonymical association operates together with temporally metonymical association to structure the plot. Just as the travel route on a hunting trip plays an importance of the role in the plot development of this story, the tale's plot development is also based on the geographical movement from one place to another, which can be understood as the spatial metonymical association among episodes.

Furthermore, the plot development of this story is based on metaphorical associations, which make it possible to connect episodes spatially and temporally separated from each

other. The episodes are joined not only according to temporal or spatial adjacent relationships, but also by an analogous relationship as seen from paragraph 26 and 27. From paragraph 26 to 27, the episode, in which the elder cried at *Inirniq* Lake as a child because the first fish he caught at that lake was taken away from him and eaten by his adult relatives, is followed by an episode which is metaphorically similar, but which occurred at another lake, *Tahirjuaq* Lake.

The metaphorical associations, moreover, operate together with the metonymical associations to allow for a more complex plot development. For example, it can be recognized from paragraph 22 to 24 that some episodes are connected one after another, based on both metaphorical and metonymical association. First, the 'fishing with a spear' episode that it is 'fun' for him, is linked to the episode in which it was 'fun' for him to travel in late fall and early winter, though only short distances in those days, before he had (snowmobile) headlights. Both episodes are based in metaphorical association on the common feeling that it was fun. Then, after some episodes concerning pleasant experiences fishing in some lakes are related (through metaphorical association), good lakes and rivers for fishing along the coast line of Pelly Bay are enumerated one after another (through metonymical association based on proximal geographical location). Finally, after a

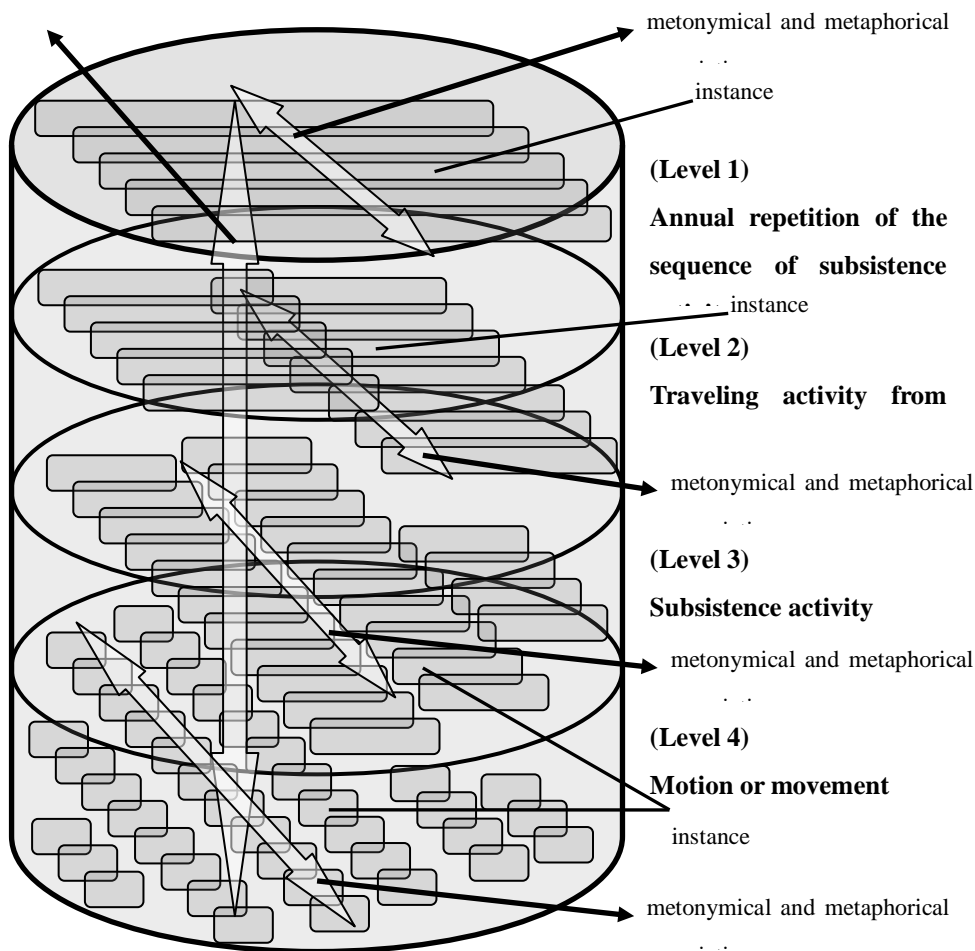


Figure 3: The multilayered collection of experiences

comment on the good taste of fish caught in the Pelly Bay region, the episode is related about a person from Igloodik (a neighbouring village) who was surprised the people at Pelly Bay ate fish every day (this episode is considered to be evoked through the metonymical association with his comment on the taste of fish).

Therefore, it can be hypothetically inferred that Inuit hunters' memories might have the following structure; the multilayered collection of experiences, where the innumerable repetitions of instances, which are vertically and horizontally associated with each other through synecdochical, metonymical and metaphorical associations, are arranged according to cyclical length of its repetition (see Figure 3). The entirety of the hunter's past experiences, is fully stored across the levels, though memorized in different forms. Indeed, the duration and consistency of instances stored at each level depends on the echelon at which they are located. For example, instances stored at the highest level, that is, the level of *annual repetition of the sequence of subsistence activities*, are presumed to shape into a continuous annual sequence of events. On the other hand, the instances memorized at the lowest level, are shaped into various fragmentary simple sequences about 'perception-movement' (i.e., 'perceiving something moving in one's sight, then turning one's attention to that object', 'sighting one's rifle on a target, then pulling the trigger', etc.). In short, the higher level in which instances are located, the longer and more coherent the instances are. Conversely, the lower the level in which instances are located, then the more fragmentary the instances are.

However, even at the lowest level, the sum of fragmentary instances of repetition composes the entire experience through which hunters have gone, even though the instances stored at this level are stored as suspended fragments (i.e., 'sighting one's rifle on a target, then pulling the trigger', etc.). This is because every instance of repetition in the hunter's past experience and practice, is presumed to have been stored according to the fundamental tendency of Inuit hunters to respect the uniqueness of events and memorize each discrete event. Consequently, the numbers of stored instances increases at the lowest (most fragmentary) echelon. In short, fewer, but longer, more coherent memories are stored at the highest echelon of memory, while a huge number of fragmentary instances are stored at the lowest echelon of memory.

Then, as occasion demands, the instances of various repetitions flexibly connected with each other, according to synecdochical, metonymical and metaphorical associations. For example, the plot of the story is constructed according to a quite complex procedure. First, when the hunter is required to make a basic plot of this story, he draws on instances metonymically related to each other in his memory and connects them one after another according to a temporal order based on temporally or spatially metonymical associations. Then, when the hunter is required to explain each event in detail, he evokes the instances memorized at a lower level and inserts them into the main stream of plot development, based on synecdochical association. Moreover, when the hunter wants to develop the plot freely, he evokes and flexibly connects various instances according to metonymical and

metaphorical associations, as is shown from paragraphs 26 to 27 and 22 to 24.

So, how do hunters' memories function during actual subsistence activities? In the next section, I will address the mechanism of memory Inuit hunters utilize as a resource in practicing subsistence activity.

5. '*Bricolage*' of Memory:

A Hypothetical Model concerning the Mechanism of Memory in Subsistence Activities

Anthropologists have pointed out that Inuit children and young hunters learn how to hunt through actual experience rather than verbal instruction (e.g., Briggs 1991; 2000). Accordingly, hunters can depend only on their own experience in the practice of subsistence. Moreover, as mentioned in the preceding section, their memories are comprised of every single past instance in their experience, rather than generalized procedures abstracted from experience. Therefore, it is implausible that a hunter would practice subsistence according to generalized procedures, as his memory is not rooted in generalized knowledge. Rather, it may be assumed that the only way Inuit hunters engage in any activity is to draw instances from their memory appropriate to each circumstance, and repeat them anew. Inuit hunters are compelled by circumstance, to extract situation-appropriate instances from memory and repeat them anew in their subsistence activities, depending solely on their own experience (without being able to consult a manual on the practice of subsistence).

Although the mental process of hunters must be indirectly inferred from their behaviour and conversation – it is rarely expressed verbally –, it seems hunters always consult their own memory, to rehearse in advance, those instances appropriate to their hunting trip. This was well illustrated in the following daily behaviour and conversation of Inuit hunters, as I observed, especially before they went hunting in the morning or after they returned in the afternoon.

One episode took place in the summer of 2003, one evening when an experienced hunter, returned home from a hunting trip, visited my Inuit mentor and enjoyed conversing with him. The hunter had been on the land hunting caribou and fishing with his wife for about two weeks. In conversation with my Inuit mentor, he talked about his hunting trip and said he had had a good time because he had encountered caribou herds migrating past lakes near the village, and caught many fat fish in those lakes. Over tea during the next hour, he discussed in detail, the conditions where he encountered caribou and fish. After the hunter left for his home, my Inuit mentor suddenly went with his wife to the room where his hunting and fishing outfits were stored, and started to look for something. When I asked him what he was doing, he told me he was looking for the outfit he used when he went to caribou hunting and fishing with his wife last summer, because he decided to go to hunting and fishing the next day if the weather were nice. Then, he

explained briefly that he had a plan to go to the place where he had hunted and fished last summer, because there was a caribou herd nearby there, according to that evening's visitor.

Another episode took place shortly after I interviewed my Inuit mentor on December in 2003. On that day, I asked him about a hunting story he had experienced almost fifty years ago. In this interview, he talked about his first experience using the rifle to hunt seal. Then, soon after the interview finished, he went to the room where hunting outfits were stored, and started to look for something. After a while, he came back with an old seal-hunting rifle he did not use for a long time, and started to make special gunpowder for it. He seemed to be reminded of that rifle by the interview. Then, he told me that he was going seal hunting with this rifle the next day, and explained its usage, recounting in detail how he had made use of it in days past.

However, the conditions governing subsistence are unique, and never identical to those experienced in the past, even though they may seem quite similar to each other. Environmental conditions vary, as expressed by the elder in the phrase mentioned at the beginning of this paper. Accordingly, it is theoretically impossible for hunters to repeat duplicate cases drawn from memory, as he has no opportunity to repeat them identically, due to changing conditions. Nevertheless, if it were true that the memory of each hunter retained the structure I hypothesised in the preceding section, it might be possible for them to emulate remembered instances to such a degree that they can cope with changing circumstances.

According to my model of a memory, the number of instances memorized increases as their level descends the hierarchy. Thus, it may be inferred that a huge volume of fragmentary instances is stored at the lower levels of memory; for example, every sequence of movement practiced by a hunter in the past when shooting a rifle, is innumerable and fragmentarily stored at the lowest level of his memory. Moreover, any instance of a rifle shooting sequence can be connected with the sequences for other movements, such as the sequence for operating a snowmobile, tracking game, butchering game, etc., because the discrete instances stored in his memory are associated with each other synecdochically, metonymically, and metaphorically. Therefore, it is in theory possible for a hunter to draw fragmentary instances appropriate to his circumstance from memory and connect them in a series of movements, to such a degree that he is able to cope, although it might not always be possible to ascertain which instances precisely correspond to a particular circumstance. This is well illustrated by the fact that the target game changed from one species to another, according to the circumstances (as mentioned in section 2). It is often the case in summer that the target game changes from seal to narwhale to fish, according to circumstances; a particular sequence from a previous seal or narwhale hunt or fishing expedition, is remembered as appropriate to a circumstance, and repeated in order.

Thus, when an instance is drawn from a hunter's memory and repeated in a subsistence activity, the full range of instances, from coherent annually repeated sequences of events stored at the highest level, to fragmentary but fundamental sequences of

'perception-movement' stored at the lowest level, are retrieved from his memory and repeated in sequence. For example, once a hunter decides to go to spring seal hunting, in order to construct a coherent sequence of seal hunting appropriate to the circumstances, he must remember, repeat, and join the entire range of past sealing sequences. This includes diverse fragments, such as snowmobile maintenance, warming up the engine, loading sled with a seal hunting outfit comprised of rifles, harpoons, bullets, food and fuel, and so on. Thus, as a hunter acquires expertise, various types of subsistence activity and movement are endlessly remembered, repeated, and sequentially joined in a flexible, coherent flow of subsistence activity, as circumstances dictate.

In this dynamic process of reconstructing subsistence activity, fragmentary motions remembered and repeated by a hunter are harmoniously joined in a coherent flow of autonomous activity, and executed as a discrete unit of movement. When driving his snowmobile, a hunter synchronizes the countless micro-movements indispensable to operating a snowmobile, navigating, and tracking game, constructing a coherent flow of activity. In other words, he is required to simultaneously and harmoniously perform the appropriate sequences of countless movements: to operate his snowmobile; for grasping the spatial relationship between his current location and destination; for choosing an appropriate route to his destination with due regard to topographical, meteorological, and ecological conditions; and, for tracking game. If he were to be negligent in operating his snowmobile, he would have an accident. Likewise, if he were negligent in navigation, he would lose his way. Moreover, if he were negligent in tracking, he would miss the game. In other words, proficiency in subsistence amounts to the ability to synchronize various movements in the construction of a coherent flow of activity, as circumstances demand.

Then, as a hunter becomes more accomplished at subsistence activities, he is able to automatically and unconsciously, implement this process as with riding a bicycle or driving a car. Moreover, it may be inferred that the process for construction of the flow of activity is more automatically and unconsciously carried out, as the instances composing its flow are memorized in lower level of a memory. It becomes easier for a hunter to retrieve instances appropriate to a certain set of circumstances, from the lowest level of memory, where innumerable fragments are stored. Conversely, it is unlikely that this process is automatically and unconsciously, performed where the instances composing an instance's flow are stored at a higher level, such as the level of annual repetition of the sequence of subsistence activity. It becomes more difficult for a hunter to recall appropriate instances at a level of memory where fewer, substantial, more distinctive instances are stored. A hunter would have to reflect consciously on the construction of the flow of activity, before executing it.

Moreover, if it were true that a hunter accesses uncountable sequences of movements, stored in his memory, and combines them into a flexible subsistence practice responsive to imminent circumstances, he should be able to engage in any subsistence activity once he has experienced one annual cycle. Thereafter, as he repeatedly engages in, and

experiences subsistence activity year after year, his memory deepens and he is able to cope more flexibly with unprecedented circumstances, because events in his life experience, are always repeated differently. It is only actual subsistence experience that fosters his ability to cope with his constantly changing environment.

Therefore, it may be hypothetically inferred that the memory of each hunter functions as the matrix of his subsistence activity, from which he draws and interleaves fragmentary movements in *bricolage*, that is, he repeats in sequence appropriate combined fragments from his range of remembered instances, in order to construct a flexible flow of typical subsistence activity, as circumstances demand. According to this hypothesis, any activity can be understood to be the practice of Deleuze's 'eternal recurrence' (1994), in which repetition of the past creates the present as a novelty and advances into the future. In subsistence, current activity is ceaselessly recreated according to circumstances, a novel *bricolage* of past activity stored in the hunter's memory for future reference.

If one accepts that Inuit hunters conduct *bricolage* of memory in order to cope with shifting circumstances, it may no longer be difficult to understand how tactics such as 'practical knowledge' or 'embodied knowledge' function in their subsistence activity. This is because it can be considered that it is *bricolage* of memory that underlies tactics, in which, an individual embedded in the environment transforms the given circumstances into favourable situation by inserting the fragments drawn from memory into disposition of circumstances in order to cope with them (see section 2). In this sense, tactics such as 'practical knowledge' or 'embodied knowledge' can be understood as the practice of 'eternal recurrence' as defined by Deleuze (1994), in which repetition of the past creates the present as the novelty and advances to the future. Then, through this process of 'eternal recurrence' in tactical subsistence activity, the present activity is ceaselessly created as new instances of repetitions by *bricolage* of past activity stored in the memory of hunters according to circumstances, and then are recorded in his memory as a resource for the future activity.

The following example clearly illustrates the characteristics of subsistence activity as 'eternal recurrence', in which repetition of the past activity creates present activity and transforms them into a resource for future activity.

Before the summer of 1996, narwhale had not appeared for a long time in Pelly Bay, where Kugaaruk is located (Pelly Bay abounds with narwhale today). Therefore, nobody knew how to hunt narwhale at Kugaaruk. However, the summer of 1996, a pod of narwhale began to visit Pelly Bay, and soon became the most popular topic of conversation among hunters. While searching for a pod of narwhale by boat that summer, my hunting party learned of the pod's appearance by radio and rushed to the area where it had appeared. The hunting party included a hunter in his 30s, his younger brother in his 20s, and myself, all of whom knew nothing of hunting narwhale. Nevertheless, the hunter in his 30s skilfully steered his boat in harmony with the other boats, chasing the pod, and ultimately his younger brother shot one with his rifle. Afterward, the successful hunter told me that

shooting a narwhale is identical to shooting a seal. In short, repeating the sequence of shooting a seal in that new context, he succeeded in shooting a narwhale. Thereafter he hunted narwhale every year, with the result that he is now a narwhale hunting experts.

6. Conclusion:

Memory=body as the field where the past is transformed into a resource

In this paper, I have probed the tactical mechanisms, such as ‘practical knowledge’ or ‘embodied knowledge’, which play a pivotal role in the subsistence activity of Inuit hunters, and which is based on the notion of ‘repetition of different things’ (in the words of Inuit elder). Based partly on the Michel de Certeau’s explanation of the mechanism of ‘tactics’ (1984), and partly on my own research, I have demonstrated that tactics such as ‘practical knowledge’ or ‘embodied knowledge’ are based on an opportune utilization of memory over the passage of time. Then, I propounded a hypothetical model concerning the mechanism of memory, which Inuit hunters utilize as a resource in presenting knowledge and practicing subsistence. According to this model, the Inuit utilize their extraordinary memories to access innumerable fragmentary instances of past repetitions of environment and subsistence activities, accumulated and sorted according to the cyclic length of the repetition. Moreover, I demonstrated that Inuit hunting tactics can be understood as the practice of ‘eternal recurrence’, in which fragments of past activity stored in their memory, are repeated and assembled into present activity as imminent unprecedented repetitive instances; these new instances are in turn stored as a resource for future activity. In this sense, memory can be defined as a matrix of subsistence activity, in which a *bricolage* of the past is perpetually replicated over the passage of time.

If it were true that tactics such as ‘practical knowledge’ or ‘embodied knowledge’ are the practice of ‘eternal recurrence’, driven by *bricolage* of the past, it might be reasonably argued that memory is the most important resource for subsistence activity. Memory is the repository of the past subsistence activity, a matrix which stores material for present activity, and is enriched by them in the ‘eternal recurrence’ of the ‘repetition of different things’. In other words, ‘resource’ is not without, but within the Inuit hunter. However, it should not be assumed that memory, as the matrix of subsistence activity, is statically located in the Inuit hunter’s mind and therefore dissociated from their body. Rather, it can exist only in the medium of the body, through which the hunter interacts with his environment in subsistence activities, endlessly elaborated as innumerable, unprecedented, imminent activities; the body is also the medium through which Inuit hunters communicate with their environment. As well, the environment should not be considered as a static, frozen phenomenon; rather it is a dynamic and flexible, incessantly shifting with time. Communication between Inuit hunters and their environment takes place only through the ceaseless elaboration of subsistence, possible only over the passage of time. The hunter’s

body, embedded in the passage of time, is the vessel of the memory that forms the matrix of and resource for subsistence activity.

Moreover, it is not enough, simply to say that a memory acts as resource for subsistence activity. Tactics such as 'practical knowledge' or 'embodied knowledge' utilize innumerable fragments of the past embedded in memory, and not usually the memory in its entirety. Rather, a memory can be defined as the field, in which the fragments of the past are transformed into a resource for present and future activity. Memory functioning as the matrix of subsistence activity is the field of 'eternal recurrence', where current activity is created by *bricolage* of past activity and then is stored as a resource for future activity. Then, if memory is the field where the past is transformed into a resource, and adaptively animates a body in motion over the passage of time, an Inuit hunter should not be deemed as merely managing and controlling his memory. Rather, he should be redefined as a discrete memory=body complex, which is passively driven by, and ceaselessly transforms itself through the motion of 'eternal recurrence'. Memory is the matrix of subsistence activity, where the entire corpus of the past is stored as innumerable instances of the 'repetition of different things'. In memory, the development of 'eternal recurrence' takes place, is nothing but the body embedded in the passage of time, which adaptively creates present activity through *bricolage* of past activity, and transforms them both into a resource for future subsistence activity.

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Chapter 3

Science against Modern Science

The Socio-political Construction of Otherness in Inuit TEK (Traditional Ecological Knowledge)

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This paper was originally published in N. Kishigami and J. Savelle (eds.), *Indigenous Use and Management of Marine Resources*. (Senri Ethnological Studies 67) (Osaka: National Museum of Ethnology, pp. 323-344, 2005)

1. Introduction

Since the 1980s when wildlife co-management regimes in which indigenous people participate in environmental management such as resource management, conservation, development planning and environmental assessment on an equal footing with government were established in the Canadian Arctic, the TEK (Traditional Ecological Knowledge) of Inuit people has attracted considerable attention. TEK has been defined as ‘a cumulative body of knowledge, practice and belief, evolving by adaptive processes and handed down through generations by cultural transmission, about the relationship of living beings (including humans) with one another and with the environment’ [BERKES 1999: 8; c.f.; BERKES 1993; HUNN 1993; LEWIS 1993; NAKASHIMA 1991].

Until the mid-20th century, although the TEK of the Inuit people was admired as excellent practical knowledge by the dominant Western society, it was regarded as the product of ‘primitive’ irrational thought, that is, a kind of pre-science or superstition, inferior to modern science. Therefore, Inuit TEK was never taken into account in environmental management. Modern science alone provided the grounds for decision-making in that era. However, since the co-management regime was established in the Canadian Arctic in the 1980s, the application of Inuit TEK to environmental management has been recognized as an important policy. This is because, if the co-management regime, which requires the full participation of Inuit people in environmental management, is to function effectively, not only modern science but also Inuit TEK should be employed in environmental management (e.g., FREEMAN and CARBYN eds. [1988]; NADASDY [1999]; and WENZEL [1999]).

Moreover, many anthropological studies since the 1970s have shown that Inuit

TEK provides deep and precise insights into natural phenomena, although such insights are based on a paradigm different from that of modern science (see e.g. BIELAWSKI [1996]; COLLINGS [1997]; FERGUSON and MESSIER [1997]; FERGUSON, WILLIAMSON and MESSIER [1998]; FIENUP-RIORDAN [1999]; FREEMAN ed. [1976]; FREEMAN [1984, 1985, 1993]; Freeman and CARBYN eds. [1988]; NAKASHIMA [1988, 1991, 1993]; STEVENSON [1996]). While modern science is quantitative, purely rational, analytical, reductionist and based on a dualistic worldview in which nature is regarded as separate from the human realm, Inuit TEK is qualitative, intuitive, holistic and based on monistic worldview in which humans are viewed as part of nature. In short, it has been suggested that Inuit TEK is based on a paradigm that differs from that of modern science, but that is not at all inferior to modern science. Consequently, nowadays, Inuit TEK is regarded as a science comparable to modern science, and complementary to modern science, and thus has the potential to contribute to environmental management and empowerment of Inuit.

In this social and academic climate, one of the most important issues in the field of co-management in the Arctic today is the integration of Inuit TEK with modern science. Nevertheless, attempts to integrate Inuit TEK with modern science have been confronted with difficulties. Although scientists, resource managers, Inuit people and anthropologists have made great efforts to develop a method for integrating Inuit TEK with modern science during the last decade, there has been little progress toward actual achievement [NADASDY 1999], primarily because there is no agreement of how TEK may be effectively used and integrated with modern science. As a result, only opinions based on modern science are accepted in the decision-making process if there are discrepancies between the opinions of Inuit based on TEK and the opinions of scientists and resource managers based on modern science [COLLINGS 1997; NADASDY 1999]. Moreover, even when they are accepted, it is held that opinions based on TEK should still be supported by modern science [NADASDY 1999]. In many cases, Inuit TEK at best merely provides raw data for modern science, which still alone provides the grounds for decision-making [COLLINGS 1997; NADASDY 1999].

One of the most crucial factors which have been considered to be an obstacle to integration of Inuit TEK with modern science is the assumption of the essential incommensurability between these two types of knowledge [FREEMAN and CARBYN eds. 1988; NADASDY 1999; STEVENSON 1996; WENZEL 1999]. As noted above, Inuit TEK is essentially different from modern science in representational style and basic paradigm and is, therefore, assumed to be incommensurable with modern science. As a result, this essential incommensurability is assumed to be responsible for the difficulty in integrating Inuit TEK with modern science.

However, is it actually true that Inuit TEK is essentially incommensurable with modern science? Even though it is true that these two types of knowledge are different from each other in many respects, are there any aspects that Inuit TEK and modern science have in common which might make it possible to integrate them? And, if such aspects

exist, what hinders attempt to integrate them?

This problem is the focus of this paper. Based partly on my own research in Kugaaruk (Pelly Bay), Nunavut, Canada, and partly on other studies of Inuit TEK, I compare Inuit TEK with modern science in order to examine the possibility of integrating these two knowledge systems. Then I propose the following: 1) Inuit TEK is guided by the ideology of “tactics” as opposed to the ideology of “strategies” (as defined by Michel de Certeau [1984]) which guides modern science, but both are based on the balanced combination of the “tactical” practice and the “strategic” practice; 2) the difference between Inuit TEK and modern science is the result of the socio-political construction of otherness which Inuit people have pursued in order to bolster a positive ethnic-identity and resist the hegemony of modern science in the process of assimilation and integration into the nation-state of Canada and the capitalist world-system since sedentarisation in the 1950’s; and 3) accordingly, Inuit TEK is not essentially incommensurable and has a common base with modern science, which makes it possible to integrate Inuit TEK with modern science. Then, based on these hypotheses, I propose that we should focus on socio-political conditions which cause amplification of the difference between Inuit TEK and modern science and which hinder attempts to integrate them.

2. Unsuccessful Interviews:

Denial of Generalization by Inuit Elders and Hunters

I carried out research on traditional navigational technology of the Inuit of Kugaaruk (Pelly Bay), Nunavut, Canada between 1996 and 1997. Inuit traditional navigational technology is a part of Inuit TEK and is a body of knowledge and skills indispensable for Inuit if they are to travel safely and freely in the Arctic environment in order to practice subsistence activities, trade, visit relatives in neighboring villages, etc. It includes the knowledge and skills needed to grasp the spatial relationship between the present location and destination, and find out the appropriate routes to the destination with due regard to topographical, meteorological and ecological conditions. In order to learn this technology from elders and skilful hunters, I carried out a series of interviews with them as well as a series of participant observations.

At the beginning of this research, I was confronted with a major difficulty: my interviews with Inuit hunters did not go well. This is not because they were unwilling to be interviewed. Rather, by and large they welcomed my interviews because they knew of my great regard for TEK, and they expected that my research would serve to realize their own objective, which is to pass TEK on to the next generation and to introduce TEK into a much wider scope of societies. The problem was that we were talking at cross-purposes. I asked them various questions on the assumption that they have a generalized and systematized knowledge, which is the same kind of knowledge as indigenous navigators in

Oceania have been shown to have such as the *etak* system, constellation compass, etc. [e.g., AKIMICHI 1995; GLADWIN 1970]. I tried to extract this kind of generalized and systematized knowledge from them, and this was where the problems arose. My questions were directed toward generalized knowledge and often puzzled and confused the Inuit hunters who tend to avoid easy generalizations.

For example, the following discrepancies often occurred. I would ask them to show me the routes, which they usually or always take to travel from the village to some principal hunting grounds, expecting that they would demonstrate a generalized knowledge concerning the network of routes which link various places in their territory. Contrary to my expectation, however, they were either confused by the question or told me that they can travel to those places by many different routes. This does not mean, of course, that they do not use systematic knowledge of routes for navigation. Indeed, they gave me a full account of routes that they actually took in the past when I made the questions more specific, such as "How did you go there in the summer when you got married?" Then, overlapping all the routes they showed me in a map, it was clear that they use a systematically organized network of routes for navigation and have a thorough knowledge of this network (see Figure 3-1). Actually, they recited to me chains of place names along the routes organized into the network when I asked them to teach me how they remember place names.

Therefore, it seems reasonable to consider that it was the style of my questions that caused initial misunderstandings and made my interviews unsuccessful. My questions were directed at generalized knowledge, and included terms relating to generalizations, such as "always" and "usually," and seemed to be ambiguous or inaccurate to them. Actually, I was often admonished against simple overgeneralizing when I asked, "Do you usually (always) take this route to go there?" Then, on each occasion, they explained how the route they took at that time was different from a previous route, although these routes are almost the same. It seemed to be inaccurate for them to generalize about the routes without regard for the detailed differences. Indeed, the routes they actually took on each occasion were not quite the same although they also admitted that they traveled along the generally used routes which were more likely to be safe and efficient for travel.

This example was not an unusual case. In general, Inuit hunters were unwilling to generalize about their experiences and tried to give me as complete a picture of their experiences as possible. After repeating this kind of experience, I learned to avoid overgeneralizations and put my questions in a more direct way; that is, I asked them to tell me about their experiences in detail, rather than in generalities. Then they began to talk about their knowledge in anecdotal form. Therefore, it seems reasonable to suppose that they regarded generalizations as inappropriate and inaccurate representations of knowledge and tried to avoid it.

Some anthropologists have already pointed out this negative attitude of Inuit

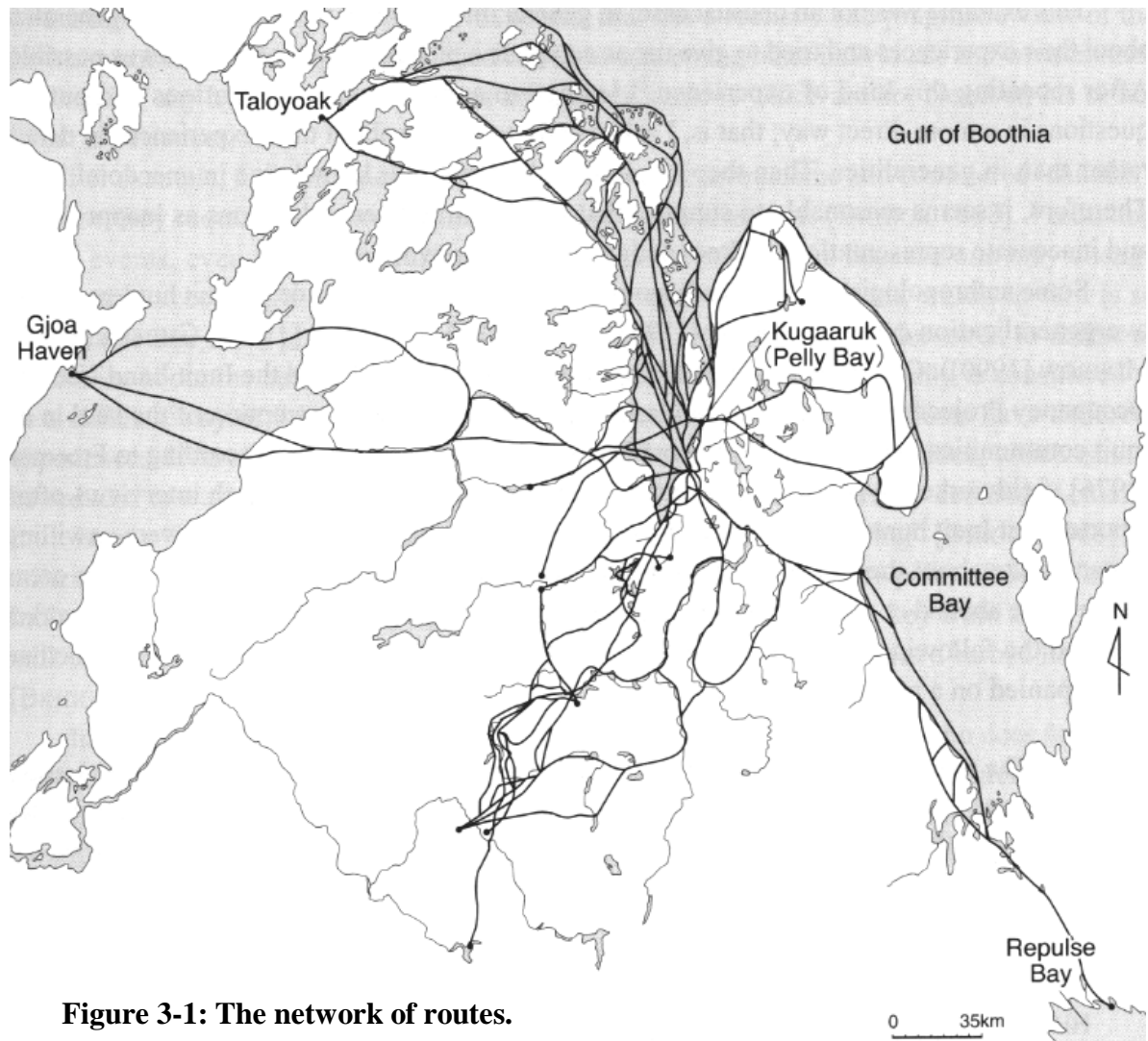


Figure 3-1: The network of routes.

hunters toward overgeneralization (see e.g., BRIGGS [1968, 1970, 1991]; FIENUP-RIORDAN [1986, 1990]; FREEMAN [1976]; GUBSER [1965]; MORROW [1990]). One in particular is Milton Freeman, who conducted the Inuit Land Use and Occupancy Project to determine actual land use by Inuit and their perception of the land in all Inuit communities in Canada's Northwest Territories in the early 1970s. According to Freeman [1976], fieldworkers who attempted to determine hunting territories through interviews often reported that Inuit hunters, when asked to indicate their hunting places on maps, were unwilling to generalize about their hunting areas and tended to limit their hunting ranges to core areas where game abound or where they frequently and successfully hunted. For example, a fieldworker reported the following discussion on the range of caribou hunting with a hunter whom he had accompanied on a number of hunting trips.

The respondent marked his caribou hunting areas and when asked if that was all, he insisted that it was. The interviewer, however, recalled that on one occasion the two of them had hunted caribou together in an area that was not marked. The following instructive exchange occurred:

HB: But what about here, by the lake. You have not marked that. I remember we hunted

caribou there.

A: Yes, we hunted there, but you know that we did not do very well there. That place has never been much good in the winter.

HB: But if you have used it as a hunting place at all you should mark it.

A: I do not want to tell any lies. There are very few caribou there. It is not a really good hunting place for caribou. [FREEMAN 1976: 53-54]

In short, this hunter insisted on the importance of details relating to his hunting areas and avoided generalizing about it. According to Freeman, this is not an exceptional case. He reported that the “tendency to mark only the probably successful locations in some cases extreme, and maps tended to be composed of sites where kills had been made, or where the respondent judged the very core of caribou herds to be located” [FREEMAN 1976: 54].

According to some anthropologists who studied the personality of Inuit and Yup’it (e.g., BRIGGS [1968, 1970, 1991]; FIENUP-RIORDAN [1986, 1990]; MORROW [1990]), this negative attitude of Inuit toward generalization is based on a cultural ideal. Briggs [1968; 1970; 1991] pointed out that above all, this attitude is closely related to “reason” (*ihuma*), which is one of the most important attributes of an ideal personality among Inuit. An ideal person who is regarded as having *ihuma* is an autonomous decision-maker who keeps his or her equanimity in the face of difficulties and frustrations, both social and physical, and voluntarily conforms to approved modes of social behavior [BRIGGS 1968]. This ideal person is highly regarded both for one’s own autonomy and for the autonomy of others, and has a realistic and pragmatic view of the environment without having any preconceived ideas concerning other individuals and environment, nor making any hypothetical inferences and generalizations which are not based on his or her direct experiences.

For example, for Inuit, questions about the future are unwelcome and considered ‘childish’, because they require hypothetical inferences and generalizations [BRIGGS 1968]. Predicting future events, even in the immediate future, is considered childish because one may change one’s mind according to the circumstances of the natural environment, which in turn is so changeable that one’s plan may be significantly altered by the change. Moreover, to define or generalize about the nature of others and environments uniformly and rigidly is considered to be a childish way of thinking with little *ihuma* because different individuals have different experiences. Everything that exists is considered to have multiple potentialities, which cannot be reduced to a single rigid definition, but can be utilized as occasion may demand. Actually, Inuit have a “reputation for being able to make anything out of anything” [BRIGGS 1968] by utilizing the multiple potentialities of objects. For example, from the viewpoint of these “adult” Inuit with *ihuma*, “a Primus key can be converted into a gun-sight, the key from a can of dry milk can be made into a needle for sewing a dog harness, and a nail becomes a barbed fishhook” [BRIGGS 1968:

45-46].

In short, the adult with *ihuma* who fits the ideal personality is someone who does not easily generalize about phenomena nor reduce complex phenomena into a simple principle without regard for the detailed context, but is sensitive to and gives careful consideration to the subtle details and contexts of phenomena in order to cope with them. Therefore, it seems reasonable to conclude that Inuit hunters avoided easily generalization in accordance with their cultural ideal.

3. The Ideology of “Tactics”: The Principle of Inuit TEK

As a consequence of their negative attitude toward generalizations in accordance with their cultural ideal, Inuit hunters tended to represent their knowledge in anecdotal form rather than in the form of generalized principles or theories. They tried to show not only the diverse attributes of a complex phenomenon under discussion, but also the detailed contexts that bring about its complexity, instead of trying to reduce a complex phenomenon to a simple principle. As a result, moreover, they tended to reconstruct and retrace the process of the phenomenon under discussion in sequence, when demonstrating their knowledge of it. For example, when I asked Inuit hunters to teach me about the routes linking various hunting grounds, they reconstructed and retraced the route, which they actually traveled each year, on a 1:250,000 scale map. They then related vivid stories about their experiences on each trip, using many gestures. The following summary of the story, which one of elders in Kugaaruk told me, is an example of these stories. This is part of a story about a hunting trip that he actually went on fifty years ago. (The numbers in the following quoted story indicate the locations of camp sites, hunting grounds and so on, which are found on Figure 3-2).

My wife, my adopted child and I left Ihuqtuq (1) by a small sled with my brother-in-law's family in the early spring of the year. We began to travel inland to hunt caribou. Then, we went toward over there (3) along this route (2). In those days, we had to go over there (inland region) to hunt caribou because there are few caribou around here (the region around Pelly Bay). We joined another hunting party that left Ikaaqtalik (4) at this place (5). I think that we continued to travel all day and night without sleeping for two days from Ihuqtuq to this place (3), because I cannot remember the camp site between Ihuqtuq and this place. The hunting party from Ikaaqtalik went back toward Arvirlingjuaq (Pelly Bay) from this place (3) after we arrived at this place (3). The next day, we traveled along the river and hunted a caribou at this place (6). Then we made *mipkut* (dried meats) and stayed overnight there. The following day, we went toward this lake (7) and we stayed and fished *ishuraagluk* (trout) around this lake (7) for a few days. We made *piphit* (dried fish). I do not know the name of this lake but we caught lots of fish in this lake.

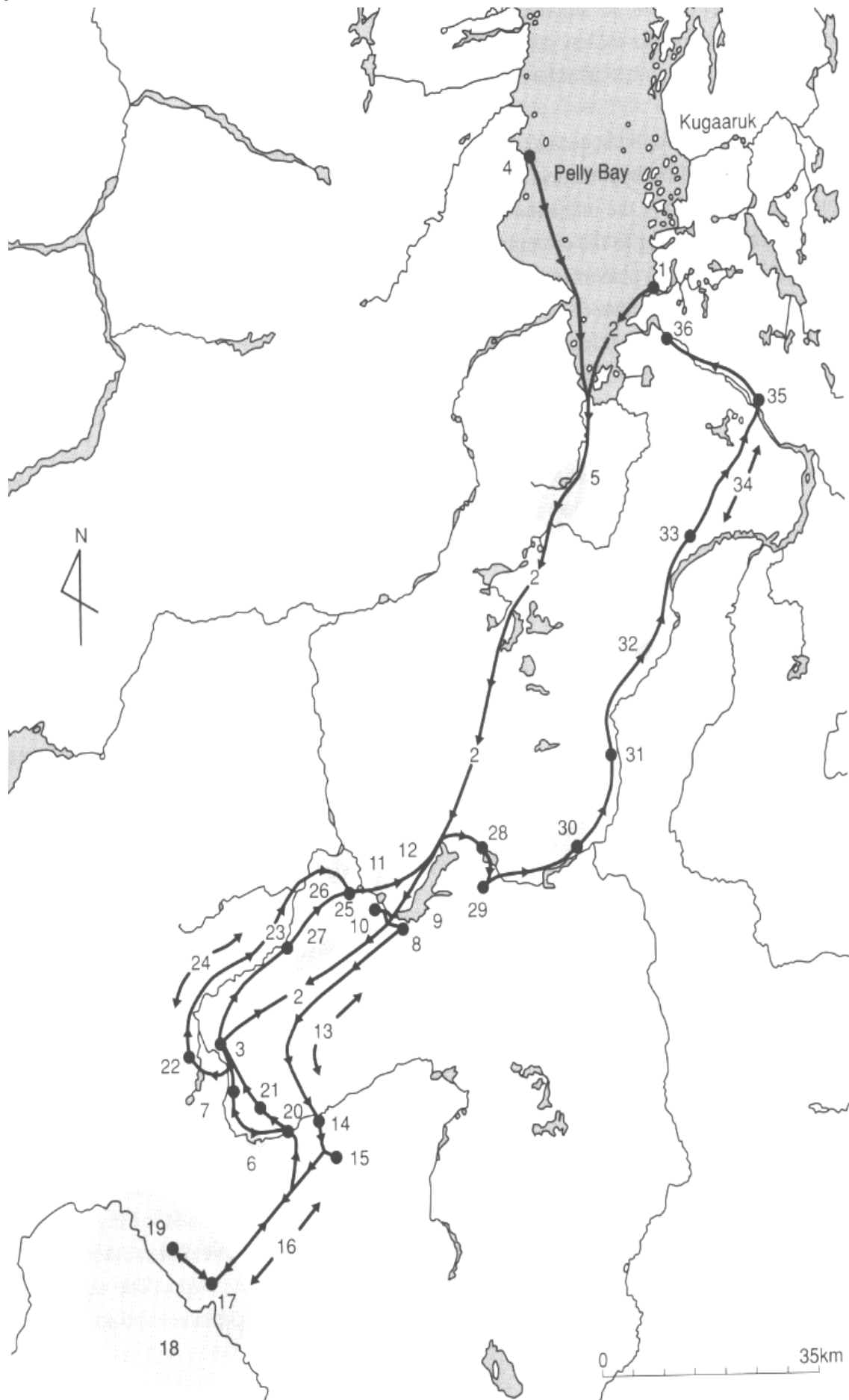


Figure 3-2: The route of the hunting trip which one of elders in Kugaaruk drew while relating the story of that trip

Then, we went back to Qinguklik Lake (8) and made a camp at this place (8). There were lots of *ishuraagluk* in this lake which we caught and we made lots of *piphit* at this camp site (8). Our hands hurt from catching so many fish with our *kakivat* (fishing spear) for two days. The next day, we went to this lake (10) and made a camp there. We chased and got a caribou with my brother-in-law around here (11). Then, we came back to this edge of this lake (12). There are shallows that are chest-deep at this place so we waded through the shallows. There were lots of *ishuraagluk* there. My brother-in-law caught a fish with his *kakivat* (fishing spear), but the fish pulled him and he dropped his *kakivat*. The fish got away with his *kakivat*. I had to hold my sides because I was laughing so hard.

In those days, we used to catch lots of *ishuraagluk* in this part of this lake. We carried two fish we caught there at this camp site (10) to that camp site (8). Those fish were so heavy that we were not able to carry any more than two. We used to be able to walk for the same distance with a whole caribou without taking a rest. But we were forced to take some rests because those two fish were so heavy. They were really fat and heavy.

We dried all fish we caught around there and cached the *piphit* in a stone cache at this place (8). Then we traveled along this route (13) and found some big caribou at this place (14). The caribou were in close proximity where we were. But it was so foggy that we couldn't see them. Only our dogs could figure out where they were because dogs have keen noses. With the help of our dogs' keen noses we shot them with a gun. We shot two caribou. But it was so foggy that we could not find the carcasses. Then we stayed overnight at this place (14). The next day, we shot two more caribou there (14) and we pursued a herd of caribou and got two more at this place (15).

After that, we traveled along this route (16) without sleeping and arrived at this place (17) on the Avalituk River. We made a camp there and when we woke up the next morning, we saw lots of caribou around there so we were able to get some of them. We camped there for a long time. We went from this camp site in all directions (18); for example, we went upstream or to the other side of the river to hunt caribou every day. At times we went to over there, far from this camp site to hunt caribou. In those cases, we spent the night there and went back to the camp site the next day. We got a lot of caribou around there (18). We spent a whole summer there and we gathered lots of caribou furs. Then, when fall came and it got cold, we decided to go back to Arvilingjuaq (Pelly Bay). We made a cache of caribou furs with rocks because we got too many furs to carry all of them. We put all the caribou furs into a bag made with two caribou furs and put it into the stone cache in order to keep them from getting wet. We used to cache *piphit* and *mipkut* in the same way.

When we were eating supper in our tent in the evening, the dogs started barking so I went out of the tent to see what had happened. Then I found my relative's family were arriving at this camp site. The following day, we moved to this place (19) with them.

We parted from my brother-in-law's family (except for my brother-in-law) at this place (19) and they went back to Ikaaqtalik (4). We went back to this place (17) to hunt caribou. We got lots of caribou around there and made two more caches of caribou furs. While we camped at this place (17), we went from this camp site in all directions to hunt caribou every day and we got a lot from around there (18). Sometimes we went to over there, far from this camp site, to hunt caribou. At those times, we stayed overnight there and went back to this camp site the following day. It was the first time in my life that I saw so many caribou.

After a while, we went back to Tuluqaat (20) and made camp there. The banks of the river around Tuluqaat (20) are covered with sand. We waded across the river and made camp and stayed overnight at this place (21) because it began to rain and the north wind was getting stronger. The rain turned to snow after a while. The next day, we parted from my relative's family who went back to this place (22) to get the tobacco they had left there, while my family went down the river and made camp at this place (23). I think that the family of my relative traveled along this route (24). The next day, we moved to this place (25) and got lots of caribou around there. My relative's family joined us again at this place (26). Then we hunted caribou there. My relative chased some caribou and shot them at this place (27). I made a cache of caribou at this place (26), while my relative made a cache of caribou at this place (27). My relative came back to this camp site (25) in the evening.

Then we walked through a snowfield to Havitaklik Lake (28) and made camp there. The next day we walked across the frozen lake. We followed the tracks of caribou and got some around there (29). After a while, we saw some caribou at this place (30), but did not hunt them. We went down along the Kuuk River and made camp at Hiillaqtalik (31). We parted from my relative's family here (32). I guess that they were going to chase the herds of caribou or go to the place where they cached their sleds to get it. My brother-in-law went with them. I guess that the tobacco my relative had attracted him. Our family went down along the Kuuk River and made camp at this place (33). The next day, we traveled along this route (34) because the ice on the Kuuk River was too thin to travel. Then we arrived at Quunguarjuk (35) and there are lots of people there and lots of tents. I saw lots of people fishing there as it was the fishing season. After we stayed for few days at Quunguarjuk (35), we went down along the Kuuk River until we arrived at Tuaparjuaq (36) where my parents camped. (Summary of the story recited by an elder on the 20th of August, 1997)

In these stories, the following details of these hunting trips are demonstrated in sequence: all the campsites; all the places where food, tools, sleds and so on were cached; the terms for camping and hunting; all the places where they saw and hunted game; the behavioral patterns of the game; the methods of hunting; the number of game they caught during each hunt; changes in the weather during each trip; various social events; changes in

social relations among their relatives, and so on. The elder telling the story also related how they had managed to overcome all the difficulties through flexibility and by taking the proper steps to deal with changes in various situations. In other words, he did not indicate a generalized knowledge about routes, but reconstructed the experiences of a trip he had actually taken in the past, in sequence, as if he was actually taking that trip again by means of words.

There have been many anthropological studies that have already pointed out these characteristics of Inuit knowledge (see e.g. ARIMA [1976]; BOAS [1888]; BRIGGS [1968, 1970, 1991]; BRODY [1976]; CARPENTER [1955, 1973]; FERGUSON and MESSIER [1997]; FERGUSON, WILLIAMSON and MESSIER [1998]; FREEMAN [1976]; GUNN, ARLOOKTOO and KAOMAYOK [1988]; NELSON [1969, 1976]). It has well documented that Inuit knowledge is exceedingly precise and detailed, based on careful observation and excellent memory. Maps drawn by Inuit have been often described as some of the most impressive examples of detailed environmental knowledge [OMURA 1995, 1999; RUNDSTORM 1990; SPINK and MOODIE 1972, 1976]. Indeed, Inuit maps, which have a reputation for elaborately expressing the subtle details of geographical features and are often comparable to modern topographic maps [SPINK and MOODIE 1972, 1976], show that Inuit regard subtle details as vital to their knowledge. Furthermore, it has also been shown that the Inuit knowledge is organized into a personal history or oral narrative format that retains their ancestors' as well as their own experiences. In general, their knowledge does not exactly fit into sets of generalized principles, but rather each individual hunting trip is organized in sequence and its detailed are remembered. In short, Inuit knowledge is not the expression of generalized principles but the verbal re-execution of practices that have been actually carried out in the past.

Based on the distinction between “strategies” and “tactics” by Michel de Certeau [1984], the characteristics of Inuit knowledge discussed above can be summarized as being based on “tactics” rather than “strategies.” This is because Inuit hunters tend to avoid generalities (generalization being one of the most essential characteristics of “strategies”) in accordance with a cultural ideal, and because it is the “tactics” that they try to re-execute through oral accounts when they discuss their knowledge.

According to Certeau [1984], strategy is the mode of practice, in which the subject, standing from a viewpoint isolated from and commanding a sweeping view of the environment, controls or manages the environment objectified from that viewpoint; or, in his words:

I call a strategy the calculation (or manipulation) of power relationships that become possible as soon as a subject with will and power (a business, an enemy, a city, a scientific institution) can be isolated. It postulates a place that can be delimited as its own and serve as the base from which relations with an exteriority composed of targets or threats (customers or competitors, enemies, the country surrounding the

city, objectives and objects of research, etc.) can be managed. As in management, every 'strategic' rationalization seeks first of all to distinguish its 'own' place, that is, the place of its own power and will, from an 'environment.' A Cartesian attitude, if you wish: it is an effort to delimit one's own place in a world bewitched by invisible powers of the Other. It is also the typical attitude of modern science, politics, and military strategy. [CERTEAU 1984: 35-36]

It seems reasonable to suggest that it is this "strategy" that Inuit hunters avoid. This is because generalizations that require reduction of complex phenomena into simple principles without regard for the detailed contexts of phenomena only become possible when the subject is isolated from the environment and objectifies it or views it from a strategic perspective. Inuit hunters reject this strategic viewpoint and avoid generalization.

On the other hand, tactics are a mode of practice in which an individual who is embedded in the environment and unable to objectify it, copes with the environment, taking advantage of opportunities according to circumstances without planning general strategies. Again, in Certeau's words:

By contrast with a strategy..., a tactic is a calculated action determined by the absence of a proper locus. No delimitation of an exteriority, then, provides it with the condition necessary for autonomy. The space of a tactic is the space of the Other. Thus it must play on and with a terrain imposed on it and organized by the law of a foreign power. It does not have the means to keep to itself, at a distance, in position of withdrawal, foresight, and self-collection: it is a maneuver 'within the enemy's field of vision,' as von Bulow put it, and within enemy territory. It does not have, therefore, have the options of planning general strategy and viewing the adversary as a whole within a district, visible, and objectifiable space. It operates in isolated actions, blow by blow. It takes advantage of 'opportunities' and depends on them, being without any base where it could stockpile its winnings, build up its own position, and plan raids. What it wins it cannot keep. This nowhere gives a tactic mobility, to be sure, but a mobility that must accept the chance offerings of the moment, and seize on the wing the possibilities that offer themselves at any given moment. It must vigilantly make use of the cracks that particular conjunctions open in the surveillance of the proprietary powers. It poaches in them. It creates surprises in them. It can be where it is least expected. It is a guileful ruse. [CERTEAU 1984: 36-37]

Many everyday practices (talking, reading, moving about, shopping, cooking, etc.) are tactical in character. And so are, more generally, many 'ways of operating': victories of the 'weak' over the 'strong' (whether the strength be that of powerful

people or violence of things or of an imposed order, etc.), clever tricks, knowing how to get away with things, ‘hunter’s cunning,’ maneuvers, polymorphic simulations, joyful discoveries, poetic as well as warlike. The Greek called these ‘ways of operating’ *metis*. [CERTEAU 1984: xix]

It seems reasonable to suggest that it was tactical practice that Inuit hunters tried to reconstruct and re-execute through oral accounts when they instructed me in traditional navigation techniques. They demonstrated how they had managed to overcome all difficulties, taking proper steps to meet changing situations; that is, embedded in environment, they re-executed their tactical practices from a tactical viewpoint.

Therefore, it seems natural that Inuit knowledge retains the detailed contexts of individual phenomenon, because it is the detailed contexts that the tactical mode of practice utilizes in order to take advantage of opportunities. Taking advantage of opportunities that appear unexpectedly requires impromptu and flexible reactions. If we take chess and combative sports, for example, as an illustration of this principal, it is often the case that it is not generalized concepts or abstract rules, but numerous concrete examples of tactical practices that are useful for impromptu and flexible reaction. Just as skilful chess players and master players of judo remember the numerous moves that have already been executed in order to take advantage of opportunities, so Inuit hunters memorize the numerous tactical practices that have already been executed. In short, Inuit knowledge is tactical—“a form of intelligence that is always ‘immersed in practice’ and which combines flair, sagacity, foresight, intellectual flexibility, deception, resourcefulness, vigilant watchfulness, a sense for opportunities, diverse sorts of cleverness, and a great deal of acquired experience” [CERTEAU 1984: 81]; all of which preclude generalization.

However, this does not mean that Inuit hunters lack a strategic perspective and never behave according to strategic principles when rejecting an overall strategic viewpoint. If they are to travel successfully and acquire knowledge about navigation, which is organized into anecdotal form, they must be well acquainted with strategic knowledge, such as that relating to cardinal directions and networks of place names, which can be grasped only from a viewpoint isolated from the environment—from a strategic viewpoint.

Indeed, the Inuit I interviewed had a clear and accurate grasp of the spatial relationships of over 300 places, which are organized into a network of place names (Figure 3-1), based on cardinal directions that are composed of two axes and four directions. They use these reference points to determine their present position whenever they travel on the land. For example, they always made reference to the orientation of snowdrifts, from which they determine the cardinal directions. On this basis, they then attempt to determine their present position and planned destination from a bird’s-eye or strategic viewpoint. Moreover, this strategic knowledge is indispensable for understanding information relating to navigation, organized into anecdotal form, because the stories of

navigation would be merely chaotic, useless assemblages of events if it were not for the fact that the places where each event occurred are located within a network of place names by which the geographical environment can be grasped from a strategic viewpoint. Indeed, as I have already shown in the previous section, Inuit were able to recite chains of place names along the routes organized into networks when I asked them to teach me how to memorize place names. Moreover, as some anthropologists have reported, Inuit have tongue twisters made up of place names, through which children learn the network of place names (see e.g., CORRELL [1976]).

However, it must be noted that strategic knowledge, such as knowledge of the network of place names, is merely basic knowledge for beginners such as children and non-Inuit such as myself. It was not to other adult Inuit but to me, an outsider, that Inuit hunters demonstrated this strategic knowledge. This kind of strategic knowledge is nothing more than what adult Inuit with reason ought to know, and, therefore, they do not discuss it. As discussed in the previous section, they consider generalization to be childish according to their cultural ideal, and avoided discussions in that context. Instead, the focal point of discussion among Inuit adults centers on how to cope with changeable environments. As a result, their knowledge is made up of the verbal re-execution of tactical practices from a tactical viewpoint. Although Inuit hunters actually execute both strategic and tactical practices, they prefer tactics to strategies according to their cultural ideals when demonstrating their knowledge.

Thus, it can be suggested that Inuit hunters have an ideology in which tactics are appreciated but strategies disregarded. According to this ideology, the strategic viewpoint is rejected as a childish viewpoint, but the tactical viewpoint is appreciated as appropriate for adults.

Therefore, it seems natural that, as has been pointed out by many anthropological studies, Inuit TEK has the characteristics of being qualitative, intuitive, holistic, context bounded and based on a monistic worldview in which humans are viewed as part of nature (see Table 1 in Chapter 2). This is because tactics constitute a mode of practice that is embedded in and meant to cope with the environment without attempting to objectify and control it. As discussed above, taking advantage of opportunities to cope with the environment requires keen powers of observation and quick judgment, as is often the case in chess and combative sports. One needs to grasp the detailed context and qualitative attributes of the environment and intuitively react to changes therein if one is to take advantage of opportunities afforded by these changes. It is not generalized principles or abstract rules but the numerous concrete examples of tactical practices that are useful for taking advantage of these opportunities. In other words, Inuit TEK is a huge body of memory accumulated in the form of numerous activities that they and their ancestors have executed over time.

Accordingly, from the perspective of Inuit TEK, the environment is never regarded as a resource which is something that can be objectified, controlled and exploited.

Rather, it is human ability that is regarded as a resource, as something which should be developed. The environment is something like a good rival or a good business partner, with which Inuit hunters establish a partnership through subsistence activities. Inuit TEK, guided by the ideology of tactics stresses control of the human world, which is not separated from natural environment, and tries to harmonize human behavior with natural environmental processes. In other words, Inuit hunters try to develop their own ability through memorizing accumulated wisdom and they try to establish a good partnership with the environment through their practice of subsistence activities, instead of exploiting the environment through managing wildlife, exploiting natural resources, building roads, manipulating the principle of “natural” world and so on.

4. The Socio-political Construction of Otherness

If it is accepted that Inuit knowledge is guided by the ideology of tactics, it may no longer be difficult to understand how Inuit TEK is different from modern science and what causes the differences in interpretation. This is because, as Certeau [1984] pointed out, modern science is guided by the ideology of strategy. So, if modern science is guided by the ideology of strategy in contrast with Inuit TEK which is guided by the ideology of tactics, the difference between Inuit TEK and modern science, as indicated by many anthropological studies (see Table 1 in Chapter 2), can be considered to be the result of this ideological difference.

A strategy is a mode of practice in which the subject, standing from a viewpoint isolated from the environment, controls or manages it. It is strategies upon which modern science is based, and as Certeau [1984: xix] points out, “political, economic, and scientific rationality has been constructed on this strategic model.” For example, generalization, reduction, and quantification, the most essential characteristics of modern science, become possible when the subject is isolated from the environment and objectifies it from a strategic viewpoint. Modern science tries to reduce complex phenomena into simple, quantifiable elements without regard for the detailed qualitative differences. Then it attempts to identify the generalized principles that govern the complex natural phenomenon and thereby construct theoretical models, by which the whole picture of the complex natural phenomenon can be grasped. Thus, modern science regards the natural environment as separate from humans and objectifies it from a strategic viewpoint, making it possible to control and manage the natural environment. Therefore, modern concepts concerning exploitation of the natural environment and modern development programs which aim to manage and manipulate the natural environment may be considered to be an extension of this strategic viewpoint of modern science.

However, this does not mean that modern scientists lack a tactical point of view in all circumstances and never execute tactical practices. As Certeau [1984: xxiii] points out, both “the spectacle of overall strategies and the opaque reality of local tactics” coexist in

the field of scientific practice, such as research laboratories. For example, scientists may have to exert their ingenuity in planning the procedures for experiments or fieldwork and assembling experimental devices. They may likewise have to cope with the changeable situations of experiments and fieldwork, taking advantage of opportunities. As Certeau [1984: xxiii] accurately states, “tactical practices, that is actual everyday practices (practices of the same order as the art of cooking)” are executed in the field of scientific practices. However, only the products of strategic practices are presented as the final outcome of these practices, whereas the numerous tactical practices are hidden from public eye.

This discrepancy between the realities of scientific practices and the results presented as the final products of science is exactly the mirror image of the discrepancy between the realities of practices and discourses of Inuit hunters. Although Inuit hunters execute both strategic and tactical practices, they show only the re-execution of their tactical practices but are unwilling to demonstrate their strategic knowledge. By contrast, modern scientists present only the products of strategic practices such as theoretical models and generalized principles in the form of theses, but do not demonstrate their tactical practices. Therefore, it seems reasonable to conclude that the difference between Inuit TEK and modern science is not an essential difference but an apparent difference caused by the ideological differences between them, because both are based on a balanced combination of “tactical” and “strategic” practices.

Moreover, it is very possible that the difference between Inuit TEK and modern science is also a result of the socio-political conditions of Inuit societies. This is because the ideology of tactics that guides Inuit TEK influences every aspects of Inuit life and is one of the principal ethnic markers that have been developed in order to enhance a positive ethnic identity against the hegemony of the dominant Canadian society [OMURA 1998; 2002].

Canadian Inuit societies have experienced great socio-cultural changes in the process of assimilation and integration into the nation-state of Canada and the capitalist world system since sedentarisation in the 1950s. They have been integrated through school education, medical services, welfare, legislation, and currency systems. Fur trading, the sale of carvings and wage labor have also promoted dependency on the capitalist world system. Moreover, the influence of Western culture through mass media has significantly changed their culture. As a result of these socio-cultural changes, on the surface it may appear difficult to find ‘traditional’ cultural elements in their modern way of life. The stereotypes derived from ethnographies and documentary films, such as the image of the autonomous hunter-gatherer who leads a seasonally migratory life, is one farthest from their present condition. Today, “Inuit society is, in many respects, as modern as its Euro-American counterpart” [DORAIS 1997:3].

However, as many anthropologists (e.g., DORAIS [1997]; KISHIGAMI [1996, 1998]; KISHIGAMI and STEWART [1994]; STEWART [1992, 1995]; WENZEL [1991]) have pointed out, Inuit societies have coped with assimilation and integration by preserving some

“traditional” characteristics of their socio-cultural systems such as principles of social organization, language, intimate relationships with their “land” (*nuna*) through subsistence activities, and worldview. Furthermore, Inuit people preserve their ethnic identity through priding themselves on being “Inuit” [DORAIS 1997; OMURA 1998, 2002; STEWART 1995].

One key factor of their identity which plays an important symbolic role in contemporary Canadian socio-political discourse is an idealized self-image; that is, *inuinnaqtun* (the real Inuit way; *inummarittitut* in other dialects). *Inuinnaqtun* refers to the Inuit language in a narrow sense, but it also, in a broader sense refers to the Inuit ways of perceiving, thinking, acting, speaking etc.; that is, the “true” Inuit way of life, in contrast to the “white people’s way of life” (*qaplunaqtun*). Accordingly, the various ethnic markers discussed below are included in *inuinnaqtun* [OMURA 1998; 2002].

First of all, behaviors and customs that are strongly value-laden, and considered to have been preserved since pre-sedentarisation times, tend to become *inuinnaqtun*. Furthermore, Inuit often regard as *inuinnaqtun* even behaviors and customs which originally resulted from contact with Western societies. These include, for example, jig dancing which was originally learned from Scottish whalers, the custom of drinking tea, the various trapping techniques introduced in the 19th century, and Christianity, to which they converted in the 20th century. Moreover, it can be suggested that even the behaviors and customs which were introduced as a result of assimilation and integration into dominant Canadian society can become *inuinnaqtun*, if practiced in the “Inuit way.” These include, for example, the “Inuit way” of operating snowmobiles and motor boats, the “Inuit way” of working for wages, the “Inuit way” of celebrating Canada Day, etc. Such behaviors and customs certainly originated through contact with the dominant Canadian society, but they can be converted into Inuit cultural traits if practiced in an “Inuit way.”

Accordingly, self-images represented in everyday Inuit life are proliferating because almost all behaviors and customs conducted in contemporary Inuit societies have the potential of becoming *inuinnaqtun*. As some anthropologists have suggested (e.g., BRIGGS [1968, 1991]; CARPENTER [1955, 1973]; NELSON [1969, 1976]; OMURA 1998, 2002]), Inuit conduct almost all daily activities, even repairing snowmobiles, using electric saws, hammering nails, etc, in the “Inuit way,” in contrast to the “way of white people.” For example, while the “way of white people” to repair a snowmobile is to substitute new parts for broken ones according to a manual or plan, the “Inuit way” is to substitute the parts similar to the broken ones without consulting any manuals. Thus, in general, the “Inuit way” relies on flexibility in taking advantage of opportunities according to circumstances and without making plans or having stringent goals. In short, the “Inuit way” or *inuinnaqtun* is the tactical way of operating. So, when a machine that a white person was unable to repair in the “way of the white people” is successfully repaired by an Inuit, Inuit often say: “White people know nothing” (*qaplunaat qaulimangngittut*). Thus, conducting these daily activities in the tactical “Inuit way,” Inuit continually reproduce and

confirm a positive ethnic identity.

Therefore, it seems reasonable to conclude that the characteristics of Inuit TEK, which are based on the ideology of the tactics, is one aspect of *inuinnagtun*, which Inuit people have socio-politically constructed to bolster a positive ethnic identity against the hegemony of the dominant Canadian society. The difference between Inuit TEK and modern science, which results from ideological differences, can be considered not as an essential difference, but rather as a socio-political construction which is the result of the interaction between the two societies.

There is, of course, the possibility that Inuit TEK was based on and guided by the tactical ideology before Inuit societies began to interact closely with the dominant Canadian society in the early 20th century. It may well be true that the ideology of tactics, which has been reproduced among Inuit societies, has been amplified by interaction with Canadian dominant society since that interaction began. However, in any case, it cannot be denied that Inuit TEK, which anthropologists are investigating at the present time, is based on the ideology of the tactics; an ideology socio-politically constructed and reproduced in the process of interaction between the two societies.

5. Conclusion: Science against Modern Science

In this paper, I have compared Inuit TEK with modern science, based partly on my own research and partly on some studies by other researchers. Then, I have suggested that Inuit TEK is guided by the ideology of “tactics,” as opposed to the ideology of “strategy,” which guides modern science. As a result, Inuit TEK, guided by the ideology of the “tactics,” stresses control of the human world, which is not separate from the natural environment, and tries to harmonize human behavior with the natural environment, while modern science, guided by the ideology of “strategy,” tries to manipulate and control the natural environment as separate from the human world. In other words, Inuit people regard the environment as a good partner with whom to establish a partnership, while modern scientists and resource managers regard it as a physical resource that should be exploited for human use.

However, I have also emphasized that Inuit TEK is not essentially incommensurable with modern science, because they share a common base in that both are based on the balanced combination of tactical practices and strategic practices. The difference between them is not an essential difference but an apparent difference caused by the ideology. Moreover, I have pointed out the possibility that the difference between these two knowledge systems is a result of the socio-political construction of Otherness, which Inuit people have pursued in order to construct a positive ethnic identity in the process of assimilation and integration into the nation-state of Canada and capitalist world-system since sedentarisation in the 1950s.

Thus, it can be suggested that Inuit TEK, guided by the ideology of tactics, not only differs from modern science, but also refuses to become modern science for the following two reasons. First, the strategy that modern science is based on is what Inuit hunters perceive as childish thought and practice according to their ideology of tactics. Second, the persistence of the ideology of tactics as opposed to the ideology of strategies leads to resistance against the hegemony of modern science. Inuit TEK is neither pre-science nor primitive science, which has failed to develop into modern science, nor an alternative science which is essentially incommensurable with modern science. Instead it is the “science against modern science,” which shares a common base with modern science but refuses to become modern science in order to resist its hegemony.

Therefore, it seems reasonable to conclude that it may be difficult but not impossible to find a way to integrate Inuit TEK with modern science, because Inuit TEK is neither essentially different from nor incommensurable with modern science. Rather, the difference between them is only an apparent difference which has been socio-politically constructed and reproduced in the process of interaction between Inuit society and the dominant Canadian society. Both stem from a common foundation of human intelligence, but have developed in different directions as a result of the interaction between the two societies. In other words, the difference between Inuit TEK and modern science can be seen as reflecting not a cognitive or epistemological difference, but rather, the unequal socio-political relationships between these two societies. Thus, in order to derive methods for integrating Inuit TEK and modern science, it is necessary to reconsider what the relationship between Inuit society and Canadian dominant society ought to be. We need to focus on the socio-political conditions amplifying the differences between Inuit TEK and modern science in order to find a common ground of understanding between them.

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Chapter 4

The Fish Tale that Is Never Told:

A Reconsideration of the Importance of Fishing in Inuit Societies

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This paper was originally published in N. Kishigami and J. Savelle (eds.), *Indigenous Use and Management of Marine Resources*. (Senri Ethnological Studies 67) (Osaka: National Museum of Ethnology, pp. 345-261, 2005)

1. Introduction

Although reports of fishing activity by the Netsilik and other Inuit groups may be found in most ethnographies, few detailed data are recorded. For example, in his monumental Netsilik volume, Rasmussen [1931] allocates only three pages to fishing, as opposed to 26 pages to seal hunting and 13 pages to caribou hunting. Likewise, Mathiassen [1928], when writing about the Iglulik Inuit devotes ten pages to seal hunting, eight pages to caribou hunting, but only four to fishing. Boas [1888] is even more biased, with 28 pages devoted to sealing, nine pages to caribou hunting and only two pages to fishing. In discussing the Caribou Eskimo, Birket-Smith devotes eight pages to fishing, which he states that, after caribou hunting, is the principle means of subsistence [1929:117]. Surprisingly, he allots the eight pages to the hunting of ‘aquatic mammals’, a pursuit considered much less important in the overall subsistence economy, compared to only six pages for caribou hunting.

Balikci [1989], who reports most thoroughly on fishing, devotes 14 pages to this subject, 10 pages to caribou hunting, but 34 pages to sealing. A similar observation may be made for Spencer [1959] concerning north Alaska, who devotes 22 pages to whaling, but only one to fishing. Furthermore, very few data are presented by any of these authors concerning worldview as it relates to fish and fishing.

In this paper, and based on a critical review of the literature and personal field data, I postulate that fish made up a substantial and relatively dependable part of the Netsilik and other Inuit groups’ diet, providing a baseline food source when sealing and other less dependable hunting activities were slow or failed.

2. Background

The Netsilik Inuit (Arviligjuaarmiut) of Kugaaruk (Pelly Bay) of Nunavut Territory, Canada, still practice a wide range of traditional subsistence activities, including caribou and musk ox hunting on land, polar bear hunting on sea ice and land, seal hunting on sea ice and in open water, beluga whale hunting in open water, as well as hunting ptarmigan and several varieties of migratory and other fowl¹⁾. In addition to these hunting activities, there has been much written concerning weir fishing by the Netsilik Inuit [BALIKCI 1964:19-21; 1989:25-37; BRICE-BENNETT 1976:67-71; RASMUSSEN 1931:63-67; STEWART 1992a; 1992b:226, 1992c, 1993a]. However, little mention is made in the literature of winter lake ice fishing, spring (June) lake and river ice fishing, as well as fall (October – November) river ice fishing. Furthermore, there is little information about taboos or other customs associated with fishing activities.

2.1 Prominent Fish Species around Kugaaruk

Probably the most abundant and important fish species in and around Kugaaruk is the Arctic charr²⁾ (*Salvelinus alpinus*), referred to as salmon trout by Balikci, trout by Rasmussen and sea-trout by Birket-Smith. Diadromous Arctic charr are similar to Atlantic salmon in that they migrate several times over the years between inland waters and the sea [JOHNSON 1989:202] and in this way differ from anadromous Pacific salmon that die after spawning. As I discuss below, Inuit name Arctic charr according to the stage of their migration cycle and nutritional state. According to informants³⁾, in year one, poorly fed mature charr (*hitujuq*⁴ or “thin ones”) and smolts (*igalugaq*) journey downriver to the sea and after feeding in the sea, return in July – August of the same year to a lake or deep portions of the river upstream where they spawn and pass the winter. These well fed charr are called *majuqtuk* (“fat ones”). After spending one or more years there, they migrate back to the sea to repeat the cycle.

Other species in and around Kugaaruk include whitefish (*Coregonus* spp., *Prosopium* spp.) and lake trout (*Salvelinus namaycush*), although Inuit appear to possess much less knowledge concerning these species. This is possibly because they constitute a less important portion of the diet, although informants mention that whitefish sometimes provide a welcome change in an otherwise monotonous winter diet.

Informant data agrees quite well with biological research by Glova and McCart [1978], Grainger [1953], Gyselman [1984], Hunter [1970], Johnson [1976, 1989], Johnson and Campbell [1975], McCart [1980], Scott and Crossman [1998], and Scott and Scott [1988] although there is some disagreement in several aspects.

The first point of disagreement concerns the migration of gravid females from the sea. According to Jose Angutinguniq, it is only when they return from the sea in June that mature female charr are gravid. I was not able to find corroborating data in the above biological studies, but Jose’s information concerning this point is detailed. Specifically, he

states that gravid females (*puvalajuq*) migrate upstream only in June, sometimes going up shallow streams as opposed to the autumn migration that is limited to deep rivers or rivers flowing from deep lakes. He stated that well-fed charr (*majuktuq*) migrating in August do not have eggs. Charr roe in June is eaten either raw or boiled. This information is not corroborated in the literature and I cannot determine whether or not this is a phenomenon known only for charr in Pelly Bay.

Also, according to Jose Angutinguniq, the female ingests the fertilised roe, incubating them in her stomach until they hatch, at which time she egests the fry. Incubating roe from the stomach of such female charr, called *amaaqtuq*, is particularly favoured by women, but may be eaten only before the eyes of the roe are formed. If the eyes have already developed, the roe is disposed of.

Most of the scientific literature report that in September and October, female charr prepare a redd (a 'nest') in the gravel and deposit 3000 to 5000 eggs which the male fertilises. The eggs develop during the winter and hatch in April to July [HUNTER 1976:1; SCOTT and CROSSMAN 1998:204; SCOTT and SCOTT 1988:137; WHEELER 1975:317]. However, Hunter [1970:114-115] notes that 'mature fish with "running" gonads....containedeggs in their stomachs'. Also, Grainger [1953:359] notes that 'In the fish which spawn once a year, a number of eggs within the ovaries begin to enlarge previous to the spawning time. They acquire a quantity of yolk and become distinctly set apart from the remaining eggs, which remain small and immature'.

These observations may be the scientific explanation for the phenomenon related by Jose Angutinguniq.

3. Fishing Activities by Season

Fishing is pursued most actively in June, July – August, and October – November. Fishing on lake ice in early June is for charr that over-wintered in that lake on their journey from the sea to the spawning lake and for fish bound downstream. Charr returning from the sea often over-winter in a lake downstream before continuing to spawning areas in the following year. In early July, relatively small-scale weir fishing is done for downstream-bound charr. In mid-July to August fishing centres on ethnographically well-known larger weirs. In October – November fishing is done on river ice several kilometres upstream from the sea for fish, primarily charr, moving upstream under the ice. Fishing is not as actively pursued in the winter months, although as I argue below, fishing at this time may provide emergency food and a change in diet.

3.1 Winter Lake-ice and Spring River Fishing

Although I have observed inshore sea ice fishing by the Netsilik of Taloyoak (Spence Bay), the Netsilik of Kugaaruk historically and presently ice-fish only on freshwater ice. Sometime in December, holes about 20 cm. in diameter are made in the

lake ice, from which they jig (*aujakhaktup*) for whitefish and lake trout, and sometimes wintering charr. Five or six jigging holes are usually opened at about 10 metre intervals. Traditionally, women spent much free time jigging, as much as seven or eight hours at a time when weather conditions were favourable. Men would fish here while not seal hunting, often regardless of weather conditions. Both traditionally and recently, fish taken during the winter have been ordinarily eaten fresh and not cached [STEWART 1993b].

As the sun begins to warm the land, lake-ice fishing increases as does the catch. Then in June, as the snow on the land begins to melt, on a certain warm day a unique, short-lived phenomenon occurs. On this day only, melt-water runs over the lake ice to a depth of twenty or so centimetres. As this water pours through the jigging holes into the lake, fish (*higjahiuqtuq*) that over-wintered in a lake downstream from spawning areas swim “upstream” through these vortices and while swimming above the lake ice are taken with a fish leister (*kakivak*). According to Levi Illiuktuq, if five or six people are present with leisters, quite a number of fish readily visible in the shallow water may be taken during this short-lived phenomenon.

Within a few hours, melt-water pouring into the lake causes the ice to rise about one metre, thus forming a band of open water around the shore (*qaattaq*). According to Simon Inarksaq and Jose Angutinguniq, “the smell of the land”, that is, areas of land runoff water (*mugjuktuq*) at stream outlets, triggers a movement of charr to swim upstream to spawn. These fish (*nariaqtuq*: “those lured by a smell”, or *qaannighiuqtuq*: “waiting in the *qaattaq*”) gather in the open water near stream outlets and here also may be taken in substantial numbers.

Rasmussen [1931:56] and Balikci [1989:25, 28] refer to large cracks formed some way out from the shore where enormous shoals of trout [charr] gather. Although both refer to “big cracks”, it is possible that it is the same or similar phenomenon to that which I observed. In any case, large amounts of charr are taken at this time, not by jigging, but with leisters.

One or two days later, as river ice melts, charr that spawned and wintered in upstream lakes and smolts (*iqalugaq*) that hatch in the spring begin a downstream migration⁵⁾. Because there is often little food in the lake where fish winter-over, these fish are undernourished (*hitujuq*, “thin ones”). They are taken at weirs upstream from the sea. On June 28th, 1992, we (the author and Keichi Omura) counted more than one hundred charr, called *pikiarujaujuq*, gathered just above a weir about ten river kilometres upstream. In less than an hour we caught with our hands thirty large (40 - 60cm.) charr. That afternoon Levi Illiuktuq and Mark Kittuitikku caught another forty charr, all by hand (we had no leisters). Fish migrating downstream appear to pass any one given point in only a few hours and thus may be caught only on one day at one given point. Incidentally, land-locked charr (*ikalukpik*) are known to sometimes migrate downstream with other charr, a portent of good fishing in that year.

In the spring also, charr starting upstream in small streams are taken in stone tidal

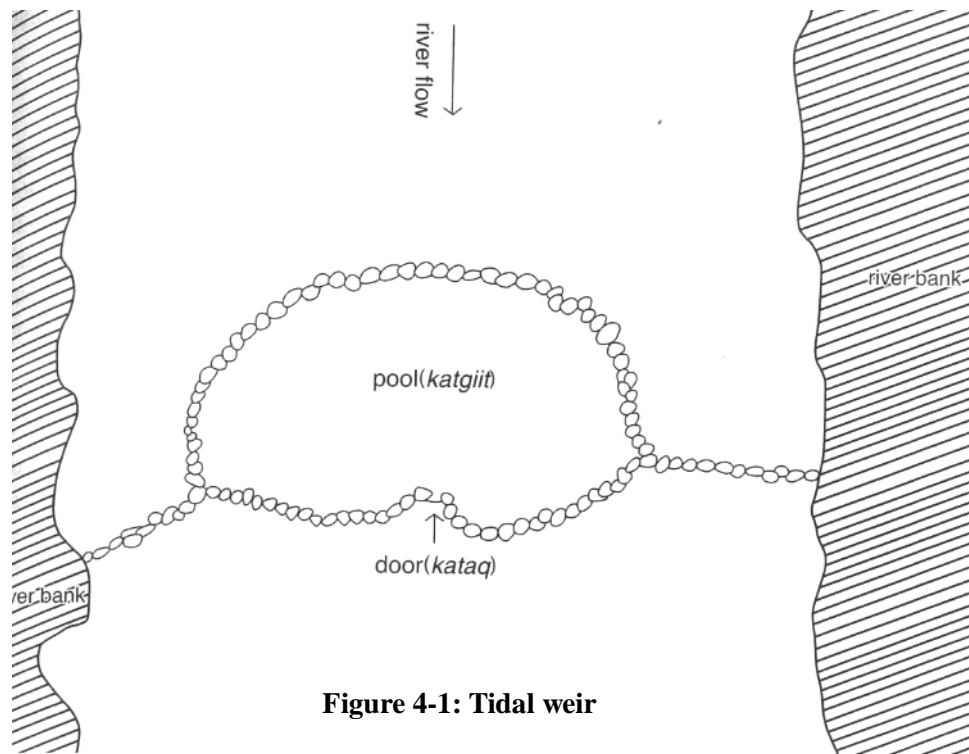


Figure 4-1: Tidal weir

weirs built at the mouth of the stream flowing into the sea. This type of weir is also called an inter-tidal stonewalled fish trap or tide trap. I do not know of such weirs other than the two I recorded on the west shore of Pelly Bay [STEWART 1993a], and one reported at Repulse Bay by Simon Inarksaq. If tidal weirs are not used for several years, the stone walls will be carried away by repeated spring ice thaws and thus destroyed. This may be the reason that so few are known now, although I was not able to learn why tidal weirs fell into disuse.

These intentionally constructed tidal weirs differ from the tidal estuaries where salmon trout (charr) trapped in natural tidal pools by chance are ‘secured with the fishing harpoons’ [BALIKCI 1989:30]. Tidal weirs are similar to, but differ in construction from the inland weirs discussed above and the large weirs used in the autumn. The difference is that tidal weirs do not have a “door” (*kataq*, Figure 4-1) as in the autumn weirs, to be closed when fish enter the weir. When the high tide covers a tidal weir built at the mouth of a small stream flowing into the sea, charr are trapped in the weir as the tide ebbs. Fish are trapped until the next high tide; therefore it is necessary to check the weir only twice a day at the ebb tide.

Informants state that fish were taken with leisters in numbers approaching the take at autumn weirs. However, these weirs had fallen into disuse by at least the time of sedentarisation began at Kugaaruk in the late 1950s for reasons that remain unexplained.

Charr taken at tidal weirs that are not soon eaten are filleted, being attached only at the tail. After the entrails and fatty meat below the ribs between the pectoral and anal fins (‘underbelly’, *aqiumuk*), which spoils easily, are removed, the fish are hung from a cord or thong stretched along a row of three to ten upturned rocks forty to eighty centimetres in height. Fish are dried on these racks (*napariaq*), first skin out for one or two days, and

then turned over with the meat side out for four or five days. Fish dried in this way are called *piffi* and stored in stone caches (*piphitlivik*).

3.2 Summer Lake Fishing

Another fishing method mentioned by Balikci [1989:28] and other researchers is that conducted from lake shores with a fish harpoon (*naulingniut*). Simon Inarksaq and Jose Angutinguniq say that not many fish were taken this way, but when caught, such fish, eaten fresh, provided a welcome change to the summer caribou meat diet, and in addition constituted an important food source when caribou hunting was unsuccessful.



Figure 4-2: Ice-jigger (*Illiuraik*)

3.3 Late Summer and Autumn Fishing

Weir fishing for young charr returning from the sea for the first time (*matsughatiit*) and well-fed mature charr (*majuqtuq*) in July and August has been well documented [BALIKCI 1964:19-21, 1989:25-37; BRICE-BENNETT 1976:67-71; RASMUSSEN 1931:63-67; STEWART 1992b:226, 1992c, 1993a, 1993b] and needs little supplemental discussion here. Suffice it to say that here, as opposed to spring weir fishing lasting only a few days, late summer and autumn fishing activities may continue for a week or more, when charr can be taken in amounts of up to a tonne at a single weir.

3.4 Preparation of Spring and Autumn Fish

The fatty meat below the ribs (*aqiumuk*) is eaten immediately, or strung on a cord and dried separately for later consumption. The “cheek meat” (*ulujaq*) is treated in the same way. If there is no drying rack (*napariaq*), fish prepared in the same way are dried on gravel beds (*tuapaq*), but drying racks are preferred in order to lessen the danger of sand sticking to the fish.

Bones without the head (*haunirkluk*) are dried separately and stored in a different cache (*kulukvik*). These bones are eaten as snacks or to relieve hunger pangs when on hunting forays.

3.5 River Ice Fishing in October

One aspect of Inuit fishing that I have yet to find mentioned in the literature is that conducted on river ice in October. As the temperature drops and holds at about -10°C, river ice forms to a thickness of ten or more centimetres.

In the first week of October of 1994, we moved to a spot on the Kellett (*Kuuk*) River about 20 kilometres south of Kugaaruk, where the ice had frozen to a thickness of

about fifteen centimetres. Over deep spots (*kamanirk*) in the river where the river water flows at a depth of about 4 metres, a hole 20 by 30 centimetres is made in the ice and the *iliuraik* (known as ice-jiggers or jiggers in the literature; [Figure 4-2]) is put into the water and propelled about thirty metres under the ice. [Figure 4-3] At that point another hole is made in the ice and the ice-jigger is drawn up onto the ice. [Figure 4-4] A nylon rope (seven millimetres in diameter) attached to the ice-jigger is pulled under the ice. Then the net, one metre high and thirty metres long, is stretched between the two holes. This procedure is repeated at one or more points, where nets are set in the same manner.



Figure 4-3: Pulling ice-jigger onto ice

The nets, thus set, are left for four to twelve hours to catch fish moving upstream under the ice. In 1994, we set nets at two, sometimes four points. The nets were pulled from the water usually twice a day at about 9 am and 3 pm, but sometimes three times a day, the third time being around noon, or some days, only once in the morning.

During the time that the nets were not being lifted, charr were speared with a leister from a hole in the ice. A hole about twenty centimetres in diameter is made in the river ice and the fisher peers into the hole, his parka hood forming a shade to block reflection of the sky. When a fish swims under the hole, it is speared. [Figure 4-5] Sometimes a lure is used to attract the fish. This is undoubtedly a variation of the method reported by Birket-Smith, where ‘the Inland Eskimos pitched tents on the ice of the lakes and fished from them’ [1929:124]. He describes this as ‘a very peculiar method’, but it was probably an effective way to block out reflection of the sky.

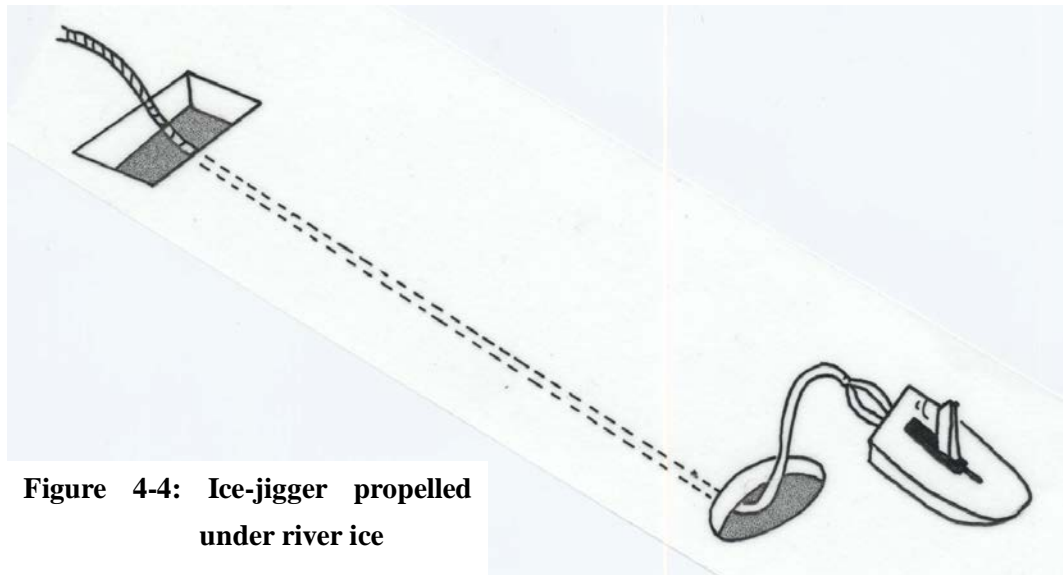


Figure 4-4: Ice-jigger propelled under river ice

Jose Angutinguniq describes another interesting fishing method employed when charr spawn. Charr arrange small pebbles on the lake or river bottom into a spawning “nest” (redd, *igliq*) where roe are laid and fertilised. During the spawning season, a fisher would catch a gravid female, kill her and pass a cord through the base of the dorsal fin and sink the body into the water. Males attracted to the female would be speared.



Figure 4-5: Spear fishing on river ice

In 1994, we spent twelve days at the fish camp, of which time we tended the nets nine days. A total of 1533 fish (1413 charr, 119 whitefish and 1 lake trout) were taken. If an average of two kilograms per fish is assumed, a total of three metric tonnes was taken during the twelve days. Those fish not given to people visiting the camp nor taken back to the village were put into two plywood and two ice boxes, all about 1.5×1.5×1.5 metre cubes. During the winter, fish were taken as needed by those who participated in the camp.



Figure 4-6: Ice box for storing fish

Fish caught in the nets are not gutted, but are put into a box before becoming solidly frozen. Ice boxes (*igaluuhivik*) are made from ten centimetre-thick ice slabs of ice. Four slabs are arranged upright in a square and after being filled with fish, covered with an ice slab cover. [Figure 6] A similarly sized box of plywood is also used.

Fishers, running back and forth between ‘two parallel rows of holes through the fjord ice’, spearing fish with leisters is another fishing method briefly referred to by Balikci [1989:173], but no further information is given and it is not possible to estimate the size of the catch.

4. Worldview of Fish and Fishing

There are a large number of taboos and ritual observances concerning fish and fishing, particularly in regard to charr. I list below the taboos and observances of the Kugaaruk area explained to me by the four informants. Many are no longer strictly observed and those that are observed are usually only observed by elder persons.

4.1 Taboos and Prohibitions

1. One should refrain from walking near a weir except while actually fishing, as fish avoid places where human shadows fall on the water. This prohibition is particularly strict downstream from weirs.
2. One should cross the river only upstream of the weir. It is particularly bad to cross a river on weir stones (also noted by Rasmussen [1931:65]).
3. Water must not be drawn downstream from a weir.
4. As soon as the fish in the weir have been taken, those fish must be promptly put into a cache and all persons should move away from the vicinity of the weir. (This is possibly done to prevent human shadows inadvertently falling on the water.)
5. The camp occupied during weir fishing should be located at a place from where the river is not visible. This would lessen the chance of a human shadow falling on the water. Also, fish are said to be shy and do not like to have people watching them.
6. One must not work in tents during the weir-fishing season, as fish will not come into the weir. Work or the repairing of tools should be done inside a special uncovered tent ring (*hannavik*: *san'avik* in Rasmussen [1931:67, 186], *sannavik* in Balikci [1989:36]). (This admonition does not apply to hunting camps.)
7. Men and women must eat separately during the fishing season (also noted by Rasmussen [1931:66]).
8. One must not break fish bones during the fishing season.
9. Dogs are not allowed to chew fish bones during the fishing season.
10. One must not break rocks on the bank or in the river during the fishing season, as that would cause the fish to avoid the weir.
11. The riverbed must not be dug into during the fishing season, even to deepen a weir.
12. While fish are not assigned a definitive place in the summer/winter - land/sea dichotomy, they seem to be most closely associated with winter/sea. Rasmussen's [1931:67] note that Nuliajuk [Sedna] 'is believed to keep a very strict watch upon man's doings at a salmon river,' which supports this interpretation.
13. Menstruating and pregnant women must never enter the weir (noted also by Rasmussen [1931:186]).
14. Although urinating in a fish river is not generally prohibited, menstruating women should never urinate in a fish river. Women not menstruating are not so prohibited.
15. A "tabooed person" [*tiringnaqtaq*: STEWART 2002] should never enter a weir nor touch the water of the river on which a weir is being used.
16. When eating fish during the fishing season, one should try to avoid eating male and female fish together. If eaten together, it is particularly important not to damage or break the bones of those fish.
17. According to Birket-Smith [1929:119], the 'Caribou Eskimos must not eat trout [charr] in the open air in the winter, and boiled water must not be poured on the floor'. I did not hear of such admonitions in the Netsilik society.

4.2 Ritual Practices

1. Lamp soot is smeared on eyes of the “first fish”: this is done so that the fish to come would not be frightened by human shadows on the water and thus avoid the weir.
2. Jose Angutinguniq’s mother smeared soot on the “cheek” of the “first fish”, speaking the words ‘Go upstream’. After that, the fish was eaten. Jose did not interpret this ritual, but I had the impression that it was done to encourage a larger run.
3. During times of a poor catch, a miniature fish carved from wood is placed in a lemming nest, and the nest is then floated on the river. Also, to ensure that many fish would migrate upstream, empty bird nests were floated on the water during the autumn fishing season.

I have not been able to learn the significance of lemmings in hunting/fishing rituals, but informants make repeated reference to the power of lemming skins, particularly baby lemming skins with no hair. Rasmussen [1931:169] notes that miniature harpoons or seal carvings were put into a bag made from a lemming skin and floated in sea ice cracks paralleling the shoreline in late spring. This was one of the ritual activities conducted when moving from the winter/sea sphere to the summer/land sphere and suggests that lemmings also somehow functioned in the sea/land dichotomy ritual scheme. Although informants did not give the reason why the lemming figured in weir fishing, if the lemming is assumed to function as a “bridge” between the land and the sea, it may be possible that it was employed in the transition when sea charr went up the rivers.

4. The eating of fish and caribou meat at the same meal should be avoided, although Rasmussen [1931:186] notes that fish bound downstream to the sea may be eaten with caribou. If caribou meat is eaten, one should wipe one’s tongue with lamp soot before eating fish. Rasmussen [1931:186] notes that a pot in which seal meat had been cooked must be washed and soot rubbed on the inside before cooking “trout” (charr). Fish moving downstream to the sea may be eaten with seal meat [1931:186], but never land-locked charr (*ikalukpik*). This admonition probably is also associated with the summer/winter - land/sea dichotomy.

I was not able to elicit similar observations concerning the eating of fish and caribou from informants, but the yet undetermined significance of soot as it concerns fishing is noted in 1. and 2. above.

5. Caribou bone marrow and brain, particularly favoured delicacies, should not be eaten while fishing at the weirs. The breaking of caribou marrow bones is also strictly prohibited (noted as well by Rasmussen [1931:67]). On the other hand, frozen raw fish entrails, a delicacy, were not to be eaten when sealing at breathing holes [RASMUSSEN 1931:37].
6. When a dying person admonishes the surviving family not to break certain bones in order to assure their good health, that family must put such “tabooed” bones

- (*haunniqingituq*) into a special cache (*haunniqkuhivik*), differentiated from caches of edible bones (*kulukvik*).
7. After a day of fishing, leisters should be placed on the riverbank with the head pointed upstream. This is said to prompt the fish to move upstream.
 8. When a young girl catches her first fish, she slips that fish into her combination suit (*ataktak*)⁶ through the neck. The fish then slides down and out through the elimination aperture. The fish is then released into the river. This ritual may symbolise easy birth for the girl and be symbolic of regeneration.
 9. Women must not sew during the fishing season. All clothing, particularly footwear (*kamik*), is to be sewn or repaired before going to the weirs (noted also by Rasmussen [1931:67]).

5. Discussion and Problems for Future Consideration

This short review of fishing activities in the Netsilik Inuit society indicates that fish constituted a significant, if not an essential, part of the diet. Charr and other fish were probably not just a secondary or “reserve” resource, but an integral part of the total subsistence system. Based upon this supposition, I further suggest that fish constituted a relatively dependable subsistence base supporting the less certain caribou and sea mammal hunting activities.

Our experience in the area of Kugaaruk shows that prodigious amounts of fish, primarily charr, can be taken at spring downstream weirs and tidal weirs, and again at the autumn upstream weirs. I have tallied only one lake ice episode, one spring downstream weir, one autumn weir and one river ice net catch. Each yielded, respectively, about twenty charr (one day, two persons: 10 fish/day/person), eighty charr (one day, four persons: 20 fish/day/person), one hundred fifty charr (one day, five persons: 30 fish/day/person) and 1550 charr and whitefish (nine days, five persons: 36 fish/day/person).

Extrapolating from this data, it is quite probable that several tonnes of fish each year could be taken from around Pelly Bay alone, with a minimum expenditure of time and energy (Balikci estimates that one family could cache up to five hundred pounds of fish at the autumn weir [1989:37]). Jose Angutinguniq tells of yearly fluctuations in charr runs, but says that there was never a year when no fish ran, or that ran in such small numbers as to cause a serious deficiency. I have no statistical data for other areas, but I hypothesise that the situation was basically similar in other areas where there are rivers with fish runs.

To my knowledge, very few catch data are available for fish in the Eastern Canadian Arctic [USHER and WENZEL 1987:157], a phenomenon most certainly due to the disproportionate emphasis on hunting by Western researchers [HULAN 2002:38-42pp, PÅLSSON 1988:189], a point that I shall pursue further in a future paper.

5.1 Problems for Future Consideration

Field and informant data gathered during the period from 1975 to 1997, as well as supplementary informant data gathered in 1998, 1999 and 2003, support my hypothesis that fishing constituted the subsistence base-line for many Eastern Canadian Inuit groups, and the Netsilik in particular. Needless to say, this was a period of great technological change from the “traditional” period. Weir fishing today still employs only leisters, but netting has become an important, possibly the most important, means of catching fish migrating from the sea in July – September, as well as on the river ice in October and November.

I have not been able to accurately establish when nets were introduced into this area, but according to informant memory, it was probably not until the early twentieth-century that manufactured nets became available, although hand-made twine nets were probably used at an earlier time⁷⁾. Hearne [in BIRKET-SMITH 1929:118] notes that in the late eighteenth-century spearing and ‘angling’ were still the only means of catching fish. Although net floats, sinkers, shuttles and mesh gauges are reported from archaeological sites in other areas, [i.e. GIDDINGS 1964:51; MORRISON 1988:108, 2000:22-23] and nineteenth century ethnographical accounts record the use of baleen, twisted sinew, babiche and fine rawhide nets [i.e. BOAS 1888:108; MORRISON 2000:6; MURDOCH 1988:250-251, 284; NELSON 1983:185-192], there is no evidence that nets were used in the Netsilik area prior to the introduction of hand-made twine nets or manufactured nets.

The ice-jigger (*iliuraik*) is a recent innovation to fishing methods in the Arctic, introduced from southern Canada (Milton Freeman and Fikret Berkes, personal communication⁸⁾) into the Netsilik society probably in the 1950’s, according to Jose Angutinguniq’s recollection. Before the introduction of the ice-jigger, nets were pulled under the ice with a fish spear (*kakivak*) passed from holes opened at intervals corresponding to the length of the fish spear shaft.

Recent innovations such as nets and ice-jiggers have undoubtedly increased efficiency and the amount of fish harvested. However, even before the advent of these innovations, it was possible to harvest impressive amounts of fish at tidal weirs and river weirs, as well as on the late spring lake ice. Moreover, neither informants nor the scientific literature report years of no charr runs, nor of severely depleted runs. This all supports my supposition that fish, particularly charr, constituted a relatively plentiful and dependable segment of the diets of many Inuit groups.

6. Conclusions

Based on fieldwork at Kugaaruk and data gleaned from literature concerning other Canadian Inuit societies, I have emphasised the importance of fishing in the subsistence economy. This partly results in the fact that during fieldwork I never perceived a

hierarchical arrangement of hunting over fishing. I acknowledge that my research at Kugaaruk, an area noted for rich charr resources, may not be applicable to some areas where there are no fish rivers. However, I am convinced that fishing at Kugaaruk and many other Canadian Inuit societies constituted an indispensable part of the subsistence base of equal importance to the more thoroughly documented caribou and other mammal hunting. I base this suggestion upon the following observations:

1. Fish are available in many areas throughout the year and are a dependable source of food. There may be fluctuations over the years in the fish stock, but according to informant data, fish, and charr in particular, migrate in sizable numbers every year.
2. Fish, relatively easy to catch, allow women and children to contribute to the food supply even when adult male hunters are away on long, and sometimes unprofitable hunting forays. Although I have no data to substantiate this claim, I feel that fish may have also been an essential element of the subsistence base of hunting cultures when ice conditions or other circumstances contributed to hunting failure.
3. Fish are easier than seal or caribou meat to store for long periods by drying. Drying methods vary according to the season and condition of the fish, as witnessed by the many terms for dried fish, such as *piffi*, *kinngivik*, *mikigaqhiaq*, *nallaqtaq*, *nigitinnaq*, *atujuqtaq*, to list just a few. The importance of fish is also confirmed by the many terms, of which I recorded only a few in this paper, describing growth stage, condition and other circumstances.

Although fish may not always have constituted the major portion of Inuit caloric intake, I postulate that fish provided vital nourishment, often to tide over periods of poor hunting. As such, fishing, although not reported in detail in the literature and often not emphasised in Inuit narratives, constituted an essential segment of the Inuit subsistence regimen.

Notes

- 1) I will not discuss the trapping of fox, wolf and other fur-bearers herein.
- 2) *Salvelinus alpinus* is cited in the literature both as 'char' and 'charr'. In this paper, except in citation of the literature, I follow the scientific precedence of 'charr' [MCPHAIL 1961].
- 3) Simon Inarksaq (deceased), Jose Angutinguniq, Martha Tunnuq (Kittuitikku, deceased), Levi Illuiktuq.
- 4) Transliteration of Kugaaruk Netsilik Inuktitut terms as proposed by Keiichi Omura is tentative and subject to revision.
- 5) Except in cases where there is a discrepancy, I have not quoted the scientific literature, as it is basically in accord with informant data.
- 6) A child's combination suit has an aperture at the crotch that opens when the child squats to eliminate.
- 7) I have not included near-shore net fishing, as the Netsilik Inuit did not use *qayaqs* in the sea.

Sea-net fishing by the Kugaaruk Netsilik Inuit probably began only after the introduction of wooden or metal boats in the mid-twentieth century.

8) The 1950 news release 'Eskimo Fishing Experiment at Port Burwell' by the Department of Northern Affairs and National Resources mentions the use of 'one torn trout net, two jiggers...' by the 'Eskimos' of Killinek at the northern tip of Arctic Quebec. I thank Dr. Milton Freeman for providing this rare reference to the use of ice-jiggers in the Arctic.

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Appendix

Appendix 1

A Story of Caribou Hunting Trip Inland in the 1950s

related by Jose ANGUTINGNUNGNIQ
translated by Keiichi OMURA

Appendix 2

The Map of Inuktun Place Names around Kugaaruk, Taloyoak, Gjoa Haven and Repulse Bay

assembled by Keiichi OMURA

Appendix 1

A Story of Caribou Hunting Trip Inland in the 1950s

related by Jose ANGUTINGNUNGNIQ

translated by Keiichi OMURA

Introduction

The story transcribed in the following is a part of the story in which Jose Angutingnungniq talked about his experience in his first hunting trip to inland region to hunt caribou after he got married in the 1950s, in compliance with my request.

In the following transcription, the Inuktun (Inuit language) original word is translated into English side by side, to preserve the way he related the story as well as possible. The Inuktun original words are put in the Inuktitut syllabic and the Roman alphabet. These are followed by the English words which I translated by the help of my Inuktun assistants. While most of Inuktun questions are my questions translated by my translators, some of them were made by them for confirming their understanding. Because my translators were the daughters of Jose Angutingnungniq, he often used such terms as ‘your mother’ and ‘your sister’.

The language spoken in Kugaaruk is Arviligjuaq, a sub-dialect of the Natsilingmiutut dialect which belongs to the West Canadian Inuktun Group, one of the Inuktitut dialect groups of the Eskimo-Aleut family. The phoneme system of the Arviligjuaq dialect is shown in Table 1. While the ICI (Inuit Cultural Institute) established a standard writing system for Inuktitut, this writing system is insufficient when transcribing the Arviligjuaq sub-dialect. For this reason, the following alphabet signs are used in this transcription: /i/ =i (Δ), /a/=a (◁), /u/=u (▷), /p/=p (◁), /t/=t (◁), /k/=k (◁), /q/=q (◁^b), /v/=v (◁^e), /γ/=g (◁^u), /R/=r (◁), /m/=m (◁), /n/=n (◁), /ŋ/=N (◁^e), /j/=j (◁), /r/=R (◁), /l/=l (◁), /ʔ/=L (◁), /h/=h (◁)

(A) vowels		Front		central		Back			
	high	/i/				/u/			
	low			/a/					
(B) consonants									
		bilabial	Labiodental	alveolar	retroflex	palatal	Velar	uvular	glottal
	voiceless stops	/p/		/t/			/k/	/q/	
	voiced fricatives		/v/				/ɣ/	/R/	
	voiceless fricatives								/h/
	voiced fricative glides				/r/	/j/			
	voiced fricative laterals			/l/					
	voiceless fricative laterals			/ɭ/					
	nasals	/m/		/n/			/ŋ/		

Table 1: the phoneme system of the Arviligjuaq sub-dialect

/i/ =i (Δ), /a/=a (◄), /u/=u (►), /p/=p (◄), /t/=t (◄), /k/=k (◄), /q/=q (◄), /v/=v (◄), /ɣ/=g (◄), /R/=r (◄), /m/=m (◄), /n/=n (◄), /ŋ/=N (◄), /j/=j (◄), /r/=R (◄), /l/=l (◄), /ɭ/=L (◄), /h/=h (◄).

Question

▷ρ▷ᵇd? ukiukku? in winter time?

Jose Angutingnungniq

[illegible]

Question

ᐅᑦᓂᓄᓇ ᐱᕈᓐᓂᓴᖃᑦᑕᖃᑦᑐᑦ January hikinnilihaaqattaqtut Lu The sun is starting to shine in January

Jose Angutingnungniq

ሰላማንጠንቅቅ	hikinnilihaaqtitluguli	when the sun start to shine
ከሰላማንጠንቅቅ	pukkititluguhuli	it is still low

Question

$\Delta^C \nabla^D \nabla^E \delta^B?$ ittuarturvik? *Ittuarturvik?*

Jose Angutingnungniq

ᑕᓴᓂ ᐅᖅᐃ ᑭᓯᐊᓂ	tamaani uvuuna kihiani	(the place) around here this way only
ᐃᑦᑐᐋᑖᑲᑦᑐᑖᐱᑦᑎᑲ ᑕᐃᑖᑕᑲᐳᐳᑖᑲ	ittuaqturviNmik taigugauRuq	they are called <i>Ittuarturvik</i>
ᑲᓴᐃ	hamna	around here
ᑕᐱᐃ	manna	here
ᐅᐃ	una	this one
ᑲᑎᑎᑕᐅᐃᑕ ᐃᑖ ᑲᓴᑎᑖᑲᑦᑐᑖᑎᑲ	katititauviga ilaa kaNiqLuNmik	I got married in the part of <i>KarikLuk</i>
ᑕᐃᑲᐳᑖᑲᑕᑖᑲᑦᑐᑖᑲ	taiRauqattaqtuq	which they are always called
ᑕᓴᐃ ᑲᓴᑎᑖᑲᑦᑐᑖᑕᑕᐱ	taamna kaNiqLutman	because that is a bay
ᑕᑦᑏᓂ	talvani	in here
ᑲᐳᐊᑲᑲ	kajualuk	<i>Kajualuk</i> (Father Pier Henry)
ᐃᑲᑦᑐᑖᑲᑦᑐᐊᓂᐋᑖᑲᑖᑲᑖᑎᑕᑲᑆ	igluqalirluaniaqhaqtitlugu	before he started to have house
ᑐᑭᓯᐋᑖᑲᑖᑲᑖᑲᑖᑲᑖᑎᑕᑲᑆ	tukihiarviqaliqniahqhaaqtitlugu	before he build the church
ᑕᑦᑏ ᑕᑦᑏᓴᑕᑖᑲᑆᑐᓂ	talva talvanNaariqluni	right here is where he came from
ᐅᑭᐅᑲᑲ ᑲᑐᐋᑕᑲ ᑲᓂᓴᑖᓂ	ukiukku januari kaniNani	around January in winter time
ᑕᑕᐅᐃᑭᑖᑲᑕᑖᑲᑆᑐᑖᑕᑕᑎ	tamaunaruqattaqtuugami	that is the rout they go by
ᑕᑕᐅᐃᑭᑖᑲᑆᑐᑖᑕᑕᑎ	tamaunaruqLuti	they go by there
ᑕᑦᑐᓴᑕ	talvuNa	to right there
ᑎᑭᑕᑕᑕᐱ	tikitman	when he arrived (at <i>Ittuaqturvik</i>)
ᑕᑦᑏ	talva	then
ᑲᑎᑎᑕᐅᑐᑭᑕ ᑕᑦᑏᓂ	katitittauvugut talvani	we got married in here

ርሎዎላክጌሎ	tahinnuaqaqman	there is a small lake
ላክጌሎሲከ	amiqhanrikku	by <i>Amiqhanriq</i>
ርሎዎላክጌሎ	tahinnuaqaqtuq	there is small lake
ርሎዎ ላክጌሎሲክ	talvani amiqhanriq	here is <i>Amiqhanriq</i>
ርሎዎ	talvani	in here
ርሎዎጌሎጌር	tamaunaruqLuta	we went that way
ርሎዎ	talvuNa	to that way
ርሎዎጌሎጌር	tamaunaruurapta	we went by that way
ርሎዎጌሎጌር	tamaunaruqLuta	we went by that way
ርሎዎ	talva	then
ርሎዎጌሎጌር	tauvunNaugapta	we went over there
ርሎዎ ላክጌሎጌር	tahamna ikaakLugu	we went across (the bay) around here
ርሎዎጌሎጌር	tamaunaruqLuta	we went by that way
ላክጌሎጌር	ihuktumun	to <i>Ihuqtuq</i>
ርሎዎጌሎጌር	talvunNaqtugut	we went there

ላክጌሎ ላክጌሎ ላክጌሎጌር ላክጌሎጌር ihuqtumi talvani auRakhiuNinnammariktun
they spend every summer in here in *Ihuqtuq*

ላክጌሎጌሎጌሎ ላክጌሎጌሎጌሎ aNajuqqaakkan ihuktuumiinNinanmariktun
my parents were always in *Ihuqtuq*

ላክጌሎጌሎጌሎ nutaraunimni while I was a child
ላክጌሎጌሎጌሎ innarukhimnimni while I was growing up

ርሎዎ talva then
ላክጌሎ ላክጌሎ ላክጌሎጌር auRigapta talvani ihuqtumi we spend the summer here in *Ihuqtuq*
ላክጌሎጌሎጌሎ nuliaqalirama when I got wife
ላክጌሎጌሎ auRigapta we spend the summer
ላክጌሎጌሎጌሎ ukiuNuraaqLuni (then) after winter
ላክጌሎጌሎጌሎ auRatmitman after it became summer
ርሎዎ taima then
ርሎዎጌሎ ላክጌሎጌሎጌር tatpauNa hivutliqpaami (when we went) to up there at the first time
ርሎዎጌሎጌሎጌሎ talvaNaariaqtugu that is where we came from
ርሎዎጌሎጌሎ tamaanikLu around there
ርሎዎ talvani right here
ላክጌሎጌሎጌሎጌሎ ihuqtumiiNinaqtugut they were always in *Ihuqtuq*
ላክጌሎጌሎጌሎጌሎጌሎ ihuqtumiiNinnammariktugu we were always in *Ihuqtuq*
ላክጌሎጌሎ ላክጌሎጌሎ ataatagalu anaanagalu my father and my mother

ላክጌሎ ላክጌሎ kihiani tamauNa only around here
ላክጌሎጌሎ akianutlu and (there) across the bay

[illegible]

I caught three really big *iLuuq* (full-grown trout)

ርኅረሆ ርዕሳዊናብላላላ	taaphumani tautunnattiaNNitman	can't see it good in there
ርሐዊ ነገረኛ ርዳሆ	taimna qamaniq talvani	in that <i>qamaniq</i> (deep and wide part of river) here
ርዕሳዊናብላላ	tautunnattiaNNitman	it is not shown good
ርዳሆ	talvani	(it is) here
የሞሃላጽጽጽጽ	qinNuaqniittuq	it is in the end of the lake
ረሃሊ	paaNa	the mouth of the river going down to the lake
ልክጋዳጋ	ikkatunnutluni	it is very shallow
የገረብረጋዳጋ ርሐዊ	quuriakittunnuutluni taamna	that is very narrow
ሊድሊድሊድሊድ	mauNauRaanaqLuni	

I went in the water this deep (up to my waist or chest)

ነገረኛ	qariaNa	its <i>qariaq</i>
ነገረኛጽገጽጽጽ	qariaNaaktaRuq	when the fish goes in <i>qariaq</i>
ርዳሆ	talvani	here
ርሐዊ ረሃሊ	taamna paaNa	that one from up there
ልኛ ርሐዊ ለረዳልላ	imaq taamna imatnaviaq	that water is about like this
ልዋጽገጽጽጽ	iqiqututigiRuq	it is this wide
ገሊኛ	kuugaq	river
ገሊድልላጽጽ ርሐዊ ርዳሆ	kuugauviaqLuni taamna talvani	that one in here is almost like a river
ወረረጽጽጽ	nulialuara	my past wife
ርዳሆ	talvani	in here
ሀገረኛ	hituRuni	though they (fish) are going down
ርዕሳዊናብላላ	taununNaqtailikLiihimatman	she was trying to keep the fish from going down
ላላላጽጽጽ	aNiqLugu	I said yes
ርዳሆሊሊላላላ	talvunNariaraaNat	when the fish tried to go there
ልጋጋ ርዳልላጽጽጽጽጽ	ipumut tatnailiqattaqLuni	

she was doing something (chasing them) with handle

ወረረኛጽጽጽ	nauligakLugit	then, I was spearing them
ልኛራራራጽጽጽጽጽ	iqalliqilluaqtuNa	I caght lots of fish

Question

ነገረኛ ላላዊ ሀገረኛራጽጽጽ? qanuq anaaanaga hituktailitlugu?

How did my mother try to stop the fish going down?

Jose Angutingnungniq

ሰ	ii	yes
ርዕሳዊ ሀገረኛራጽጽ ርሐዊ ድ	taunuNa hituktailiRaa taamna una	

she tried to prevent the fish from going down stream

Question

ሰዓ ርዮኔ ገጫሊኔ ርገገጉ? huna tahiqmunNaqtailiRaa? What did she prevent from going down to the lake?

Jose Angutingnungniq

ርኅዳሩ ልክጋልፍ ይደረግ	taapkuat iqaluit uvani	those fish in here
ርኅዳሩ ጋላጋልፍ	talvaniittualuit	they are all in there
ርኅዳሩ	taapkuat	those ones
ይደረግ ረጅም	una paaNa	this one from up there
የደረግ ርዕሰገገጉ	quuriaqittunuluni	it is very narrow
ልክጋልፍ	itkattuuluni	it is very shallow
ርኅዳሩ	talvani	in here
አድራጅ	avataa	around it (<i>qariaq</i>)
ሆኖገገጉ	hiurautini	it is covered by sand
የደረግ ርዕሰገገጉ	quriakittutluni	it is narrow
ይደረግ ሲሆን ርዮኔ ርዕሰገገጉ	una maani tahiqpalukLuni	this one around here looks like a lake
ልክጋልፍ ርዮኔ ጋላጋልፍ	iqaluktaqauluaqLuni	there is lots a fish
የሆነው	kihiani	but
ካልተገኘ ርዮኔ ርዕሰገገጉ	haputiqaNNitmariktuq	there is no <i>haputit</i> (weir)

Question

ካልተገኘ ርዮኔ	haputituviaq	it is like a <i>haputit</i> (weir)
ርገገጉ	taimatna	it is like that
ልክጋልፍ	ivjaktut	they are kind like that
ልክጋልፍ ርዮኔ	itquvjaktun	it looks like it (<i>haptit</i>)

Jose Angutingnungniq

ርገገጉ	taimatna	it is like that
ደረግ ይደረግ	kuugaq una	this is a river

Question

ካልተገኘ ርዮኔ ገገጉ ርዕሰገገጉ haputiuNNittuugaluaq though it is not a *haputit* (weir)

Jose Angutingnungniq

ካልተገኘ ርዮኔ ገገጉ ርዕሰገገጉ	haputiuNNittuugaluaq	though it is not a <i>haputit</i> (weir)
ርገገጉ ይደረግ ርገገጉ ርዕሰገገጉ	taamna uvuuna taimatnaitutman	because that one by this way is like that
ርገገጉ ካልተገኘ ርዮኔ	taamna hamanNaptaug	that one either from this way
ደረግ ይደረግ	kutkirviuluni	there is a river running this way
ደረግ ይደረግ ርዮኔ	kutkirviuluni talvuNa	there is a river running this way to there
ርገገጉ ይደረግ ርዮኔ ገገጉ ርዕሰገገጉ	taamna uvuuna qamaninalunmun	that one by this way is a really big <i>qamaniq</i> (the deep part of river)

ᑕᑖᑭᑦᑕᑦ ᑕᑖ	tamaaniiktumun taamna	that is around here
ᑖᑖᑭᑦᑕᑦ	kuugaqaqLuni	it got a river
ᑕᑕᑕᑦᑕᑦ ᑕᑖ	ikikittutluni taamna	that is short
ᑖᑖᑭᑦᑕᑦ	kuugaqaqLuni	there is a river
ᑭᑖᑕᑦᑕᑦ	qamaninaluk	it is a qamaniq
ᑕᑕᑕᑦᑕᑦᑕᑦ	aNiRutnaluluni	it is very big
ᑕᑕᑕᑦ	taimatna	it is like that
ᑕᑕᑕᑦᑕᑦᑕᑦ	aNiRunalukLu	it is very big
ᑭᑖᑕᑦᑕᑦᑕᑦ	qamaninalukLu	it is very big <i>qamaniq</i>
ᑕᑕᑕᑦᑕᑦ	talvaniitma	around here
ᑕᑕᑕᑦᑕᑦᑕᑦ	nulialaluara	my past wife
ᑕᑕᑕᑦ	talvani	here
ᑕᑕᑕᑦᑕᑦᑕᑦ	ikikittutman	it is short
ᑕᑕᑕᑦᑕᑦ	talvaniiluni	she was around here
ᑕᑕᑕᑦ ᑕᑕᑕᑦᑕᑦᑕᑦᑕᑦᑕᑦ	unuNa tahirmunNaqtailiRaa	she tried to keep them from going down to the lake
ᑕᑕ ᑕᑕᑕᑦ	una imatna	this one is like this
ᑕᑕᑕᑦ ᑕᑕᑕᑦᑕᑦᑕᑦᑕᑦ	inuktun taiguqtauRuq	it is called in Inuit language
ᑕᑕ	una	this one,
ᑕᑕᑕᑦᑕᑦᑕᑦ	ikkaktutluni	which is shallow and
ᑕᑕᑕᑦᑕᑦᑕᑦᑕᑦᑕᑦ	aNiviaqtutluni	which is kind a big and
ᑕᑕᑕᑦᑕᑦᑕᑦᑕᑦ	tahiuRaaqLuni	which looks like a lake
ᑕᑕ ᑕᑕᑕᑦᑕᑦ	taamna qariaq	that one is <i>qariaq</i>
ᑕᑕᑕᑦᑕᑦᑕᑦ ᑕᑕᑕᑦᑕᑦᑕᑦᑕᑦᑕᑦ	qariaqmin taiRauqattaqtuq	it is called ' <i>qariaq</i> '
ᑕᑕᑕᑦᑕᑦᑕᑦ	iLuraarRunni	<i>iLuraarRuk</i> (lake-trout) and
ᑕᑕᑕᑦᑕᑦᑕᑦᑕᑦ	iqalukpiNni	<i>iqalukpik</i> (a kind of Arctic-char)
ᑕᑕᑕᑦᑕᑦᑕᑦ ᑕᑕᑕᑦ	iqaluktugut talvani	we caught fish around here
ᑕᑕᑕᑦᑕᑦᑕᑦᑕᑦᑕᑦᑕᑦᑕᑦ	iqaliqqilluaqtuuRugun	we caught lots of fish
ᑕᑕᑕᑦᑕᑦᑕᑦᑕᑦᑕᑦ	malruinannuaq	only two (tents)
ᑕᑕᑕᑦ	taamna	(one of them is) this one
ᑕᑕᑕᑦ	taimna	(one of them is) that one
ᑕᑕ?	nau?	where?
ᑕᑕ ᑕᑕᑕᑦ	una uvani	this one here
ᑕᑕᑕᑦᑕᑦᑕᑦᑕᑦ	tupiqagtugun	we put the tent
ᑕᑕ	una	(it is) this one
ᑕᑕᑕᑦᑕᑦᑕᑦᑕᑦ	uvaniiktugun	we were here
ᑕᑕᑕᑦᑕᑦᑕᑦᑕᑦᑕᑦᑕᑦᑕᑦᑕᑦᑕᑦᑕᑦ	uqpiNmi qaninniqhauRuq	it (another tent) is closer than <i>Uqpik</i> (<i>Uqpigik</i>)
ᑕᑕᑕᑦ ᑕᑕᑕᑦᑕᑦᑕᑦ	taamna tupiqkut	this our tent
ᑕᑕᑕᑦᑕᑦᑕᑦᑕᑦ	uvvanNan	his one

Jose Angutingnungniq

Question

Jose Angutingnungniq

ᑕᓐᔪ	talva	then
ᑲᑭᑦᑖᑕᓐᑕ ᓂᓱᓄᓐᑕᓐᓴᓐᓴ	kapuqtaarapta qinNuqLiNni	when we finished fishing in <i>QinNuqLik</i> (Frost lake)

ᑕᑦᑭᑦ	talvani	then
ᑕᑦᑭᑦ ᑕᑦᑭᑦ ᑕᑦᑭᑦ	taapkuat akLunaan	those ropes
ᑕᑦᑭᑦ ᑕᑦᑭᑦ	qitmin ipiutaa	harness for dogs
ᑕᑦᑭᑦ ᑕᑦᑭᑦ ᑕᑦᑭᑦ	uiguliriqtitlugin	it is extended longer
ᑕᑦᑭᑦ ᑕᑦᑭᑦ ᑕᑦᑭᑦ	talvuuna mahianun nuvutlugin	it (rope) is through gills to this way

𐌲𐌱𐌰𐌿𐌹𐌺𐌰𐌿𐌺𐌰𐌿 hakiaraluaralu my past brother-in-law also

Δ ^ε Λ ^ε α	itmatna	then
ᐅᐅ ᐃᓕᓕᓕᓕᓕᐅ	tuktu irittariqtut	caribou molted their winter fur
ᑕᓯᓯᓐᓐᓐᓐᓐᓐᓐ	tahirmiikqattarapta	when we were always around the lake
ᑕᐃᓪᓯᓕᓂ	taiphumani	in those days
ᓐᓐᓐᓐᓐᓐ ᑕᓐᓐᓐᓐᓐᓐ	qamutitnu talRaraaNapta	when we went to inland with sled
ᑕᓐᓐᓐᓐᓐᓐᓐᓐ	talvunNarajukkapta	we usually go there
ᐅᐅ ᑕᓐᓐᓐ ᐃᓕᓐᓐᓐᓐᓐᓐ	tuktu talvani irittiarilugin	while the fur of caribou around here is getting longer
ᐅᐃᓐᓐᓐᓐᓐᓐᓐᓐᓐᓐ	upinNaqhiuqattaqtugun	we always spent the spring
ᐃᓐᓐᓐᓐᓐᓐᓐᓐᓐ	iqalukhiuqLuta	we always caught fish
ᐃᓕᓐᓐᓐᓐᓐᓐᓐ	irinNititlugin	when they have still the winter fur
ᐃᓐᓐᓐᓐᓐᓐᓐᓐᓐᓐ	atnurakhattiauNNittun	it is not good for clothes
ᓐᓐᓐᓐᓐᓐᓐᓐᓐᓐ	kanNaRautitlugin	when some part of winter fur are still on the skin
ᐃᓕᓐᓐᓐᓐᓐᓐᓐᓐᓐ ᑕᓐᓐᓐ	irittiarivaktavun talvani	we always wait until they molt around here
ᓐᓐᓐᓐᓐᓐᓐᓐᓐᓐ	qitNuqLiniNluta	when we were at <i>QitNuqLik</i>
ᐃᓕᓐᓐᓐᓐ	irigaaNata	when they molted
ᓐᓐᓐᓐᓐᓐᓐᓐᓐᓐ	haakkaluaqtitlugit	when they were thin
ᑕᓐᓐ	talva	then
ᑕᐃᓪᓯᓕᓂ	taiphumani	in those days
ᐅᓐᓐᓐ	uvagun	we
ᓐᓐᓐᓐᓐᓐᓐᓐᓐᓐ	kihiptauNNittuq	it is not only us
ᓐᓐᓐᓐᓐᓐᓐᓐᓐ	hakiaraluaralu	also my past brother-in-law
ᓐᓐᓐᓐᓐᓐᓐᓐᓐ	nuliaraluaralu	and my past wife
ᑕᓐᓐ	talva	then
ᑕᓕᓐᓐ	tamai	all the time
ᓐᓐᓐᓐᓐᓐᓐᓐᓐᓐᓐ	mipkuliuqtaaqLutalu	after we finish making mipku
ᑕᓐᓐᓐᓐᓐᓐᓐᓐ	talvaniptauq	also around here
ᐅᐅᓂ	tuktuni	caribou
ᐃᓐᓐᓐᓐᓐᓐᓐᓐᓐᓐ	piNahuniuRaaqtun	it may be three
ᓐᓐᓐᓐᓐᓐᓐᓐᓐᓐᓐ	mipkuliuqtaaqLutalu	after finshing to make dried meat of caribou
ᐃᓐᓐᓐᓐᓐᓐᓐᓐᓐᓐ	piphitlu panitmata	and <i>piphit</i> , which were dried
ᑕᓐᓐᓐᓐᓐᓐᓐᓐᓐ	talvunnaruqLuta	we went by this way
ᑕᓕᓐᓐᓐᓐᓐᓐᓐᓐ	tamaunNaugapta	we went to there
ᑕᓕᓐᓐᓐᓐᓐᓐᓐᓐᓐ	tamaunNaumigapta	when we went there
ᑕᓕᓐᓐᓐᓐᓐᓐᓐᓐᓐ	tamaunaruqLuta	we went by there
ᑕᓕᓐᓐᓐᓐᓐᓐᓐᓐᓐ	tamauNaptau	also around here
ᐅᓐᓐᓐᓐᓐ	turaaqtugu	we went straight there
ᐅᓐᓐᓐ	uvuNa	to here
ᐅᐅᓐᓐᓐ	tulukkaanu	to <i>Tulukkaan</i>

ኖኑሪ	qaaNani	on its top
ኖኑሪሲብልፋኖሪሪ	qaaNanimarikviaqhimalirama	I was almost at the top
ፋፍጋኖሪሪ	avatmuraqhimalugu	we went back and forth
ኖኑሪ ጋላኖሪ	qaaNani tupiqarapta	we had a tent on its top
ሮኖሪ	talvuNa	to there
ቦሞፋቦ	tikinnaptigu	when we got there
ጋላሮፎፋፋ	tupiliuniaqLuta	after making a tent
ኖኖሪፋገሪ	qinNunmigalirama	I started looking around
ሮኑሪ ርሪኖሪ	tahamna tamauNa	this part to this way
ጋኖሪ	tuktuligaalun	there are lots of caribou
ፊኖ ፋፍ	kuugaq avataa	beside (around) river
ሮኑሪ	tahamna	in this part
ጋኖሪ ፋፋፋ	tuktumalluaqtuNa	I caught lots of caribou
ፋፋፋፋፋ	auRaluktaaNa	on all summer
ሮኖሪ ፋፋፋፋፋፋ	tatqiq hunauliqtitlugukkia	I do not know what month
ቦፋ	kihiani	but
ሮኑሪ ፋፋፋፋ ርኖሪ ፋፋፋፋፋፋ	taimna illuraluara mannuhiniq taiRauqattaqtuq	this my past cousin who is called <i>Mannuhiniq</i>
ፊኖኖሪ	maunNaqnitman	he was around here
ኖኖሪ ርፊፋ	qinNutmu takugapku	I saw them with binoculars
ጋላፋ ርፊፊ	tupirmin takugama	I saw tents
ፋፋ	nakka	no
ሮፋፋ	takutitnani	I never saw him yet
ርኖሪ	tamauNani	around here
ፊኖሪ	uvuNa	here
ሮኖኖሪ	talvunNaqnirami	when he went around here
ጋላፋ ርፋፋ	tupirmi takunnirami	he saw tents
ሮፋፋ	taapkuat	those ones
ሮኖሪ ነኖኖ	niNauga kajakhaaq	my brother-in-law, <i>Kajakhaaq</i>
ፋፋፋፋ	juanivinirlu	and Juaniviniq
ቦፋ	kikhuma	him or her
ኖሪፋፋ ፋፋ	qatariun aNaa	the uncle of <i>Qatarin</i>
ፋፋፋ ፋፋ	anaanaata ania	my mother's brother
ሮፋፋፋፋ	talvaniilnirami	they were around here already
ሮኑሪ	tainna	that one
ሮኖሪ ፋፋ ነኖኖ	niNaugaluara kajakhaaq	my past brother-in-law, <i>Kajakhaaq</i>
ሊኖ ሮፋፋ	piNahu taapkuan	three of them
ሮፋፋፋፋ	talvaniilnirami	they were around here already
ጋላፋ ርፋፋፋ	tupira takunniramijun	they saw my tent
ፋፋፋፋ	illugaluara	my past cousin

Question

ᄃ ᄆᄇᄀᄁᄂᄃᄅᄆ? hu qaaNanunNaqLunigin? Who puts them on top?

Jose Angutingnungniq

ujarahuglunalun qaNatatman	big rocks are off the ground
qaNaqtaqluatutman	it is off the ground kind a high

Question

Δαδμ^{aa}λ^{bb}λ^{cc}? iluanunNaqLugu? Did you put them inside?

Jose Angutingnungniq

ᐃᓗᐘᓄᓐᓕᓕᓗᓗ	iluanunNaqLugu	they (caribou furs) were put inside it
ᐘᓄᐘᐘ ᐘᓄᓐ ᓂᓂᓕᓕᓗᓗᓐ	avataa taamna nirukLiklugun	they (rocks) around that one (big rick) are put close to each other
ᐃᓕᓗᐘᓕᓂᓂᓕᓗᓐ	illuaqhitman	when it (the cache made from rocks) was fixed
ᐃᓗᐘᓄᓐᓕᓕᓗᓗᓂᓐ	iluanunNaqLugin	they (caribou furs) were put inside it

Question

$\rho\Gamma?$ humi? Where?

Jose Angutingnungniq

ငလံ	talvani	here
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ᑕᓴᓐ ᑕᐃᓐᓇᑦᑕᓐᓇᑦ ᐃᓐᓴᓐᐃᓐᓇᑦ taamna taivaktavun anmiviin
they called that one *Anmivik* (storage for skins)

ᐱᓃᖅ ᑕᓚ ᖃᓴᑕᐸᐸᐱᐳᓪᓴᓯᓴᓄᖅ anmiviNni taamna qaNatappan ujarahugRuk
there is a big rock that is off the ground in *Annmivik*

ᖃᕐᓂᓄᓂᓪᓗᑦᓴᓇᓂᓚᓂᓂ qaNatanikkaluaqtitluguni even if it is not off the ground

$\dot{C}^L_Q \triangleleft \Gamma^\zeta \sigma \quad \Delta^\zeta C^{S_b} \rho^\zeta \sigma \triangleleft^{S_b} \gamma^{S_b}$ taamna amirni illiqhurniaqtuq
that pack of skins is put into there

ᐱᓄᖃ ᑕᐱᔭᓂᑦᑕᑦᑕᑦᑕᑦᑕᑦᑕ anmiviNmi taiRauqattaqtug it is called *Anmivik*

ᑕᓪᑯᑦ ᑕᓪᑯᓂᓂᓂ taapkuat paNnirug those skins of caribou bull

amiani puuqhimaRut their skins are packed

$\rho/\langle\sigma\rangle^{\zeta_b}$	kihianiptauq	only when
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ᐃᓕᑦᑭᓂ ᐃᑦᑲᑲᑯᑦ aippaani illirilugu they put the other ones (furs) in it (fur)

ᐱᐱᑲᑦ ᐅᐱᑦᓴᑦᓴᑦᓴᑦᓴᑦ haaNagut uNiqlaqtaurattarami

they always made some small holes along edge of the skin of caribou which is cut up and tied up it with string

ᑕᓄᐱᑦ ᐱᑕᐅᑎᑖᑛᑦ ᐸᓂᑭᑦ ᐱᑦᐱᑦ taapkuat atautimiittut pannirup amiani

those skins of bull are together

ᑭᑭᑦᑎᑦ ᑭᑭᑦᑎᑦ	kihiani upinNaakku	only in spring time
ᑭᑭᑦᑎᑦ ᑭᑭᑦᑎᑦᑭᑦᑎᑦ	tatpauNa nunamunNauliqLuni	when we went to inland up there
ᑭᑭᑦᑎᑦᑭᑦᑎᑦᑭᑦᑎᑦ	uNahiNluaNNittumun	because we travelled not so long
ᑭᑭᑦᑎᑦᑭᑦᑎᑦᑭᑦᑎᑦ	tagmaaqattaqtugut	we always spent over night
ᑭᑭᑦᑎᑦᑭᑦᑎᑦᑭᑦᑎᑦ	takanarluaqtutman	it is really tiring
ᑭᑭᑦᑎᑦᑭᑦᑎᑦᑭᑦᑎᑦ	aulalihaaqLuni	when we just started walking
ᑭᑭᑦᑎᑦ ᑭᑭᑦᑎᑦ	kihiani auRakku	only in summer time
ᑭᑭᑦᑎᑦᑭᑦᑎᑦᑭᑦᑎᑦ	pihumainnaliqLuni	when one got used to walking around
ᑭᑭᑦᑎᑦᑭᑦᑎᑦᑭᑦᑎᑦᑭᑦᑎᑦ ᑭᑭᑦᑎᑦᑭᑦᑎᑦ	qimaruqattaqtualuulugut upluminnaq	we could always go far (could always go long distance) just in a day
ᑭᑭᑦᑎᑦ	talva	then
ᑭᑭᑦᑎᑦᑭᑦᑎᑦᑭᑦᑎᑦ	mattuqmunNarapta	when we reached <i>Mattuq</i>
ᑭᑭᑦᑎᑦᑭᑦᑎᑦᑭᑦᑎᑦᑭᑦᑎᑦ	iqalukhiuruqhigapta	when our pace of catching fish was getting slow
ᑭᑭᑦᑎᑦᑭᑦᑎᑦᑭᑦᑎᑦ ᑭᑭᑦᑎᑦᑭᑦᑎᑦᑭᑦᑎᑦ	aNajugalaralu tamaunaruqLunun	my past brother and us went by this way
ᑭᑭᑦᑎᑦ ᑭᑭᑦᑎᑦᑭᑦᑎᑦ ᑭᑭᑦᑎᑦᑭᑦᑎᑦ	taapkuat amiutikku aiRaqqut	we went to get those our skins
ᑭᑭᑦᑎᑦᑭᑦᑎᑦᑭᑦᑎᑦᑭᑦᑎᑦ	uatnaqLikkuNinnaqLunuk	we went by <i>UatnaqLik</i>
ᑭᑭᑦᑎᑦ	matNan	from here
ᑭᑭᑦᑎᑦ	qitminut	with dogs
ᑭᑭᑦᑎᑦ	qamutitnun	with sleds
ᑭᑭᑦᑎᑦ ᑭᑭᑦᑎᑦᑭᑦᑎᑦᑭᑦᑎᑦ	atuni qamutiqaqLunun	because each of us had sleds
ᑭᑭᑦᑎᑦᑭᑦᑎᑦ ᑭᑭᑦᑎᑦᑭᑦᑎᑦᑭᑦᑎᑦ	aNajugalu inukhak qamutiqaqLuni	and my older brother <i>Inukhak</i> had a sled
ᑭᑭᑦᑎᑦ ᑭᑭᑦᑎᑦᑭᑦᑎᑦᑭᑦᑎᑦ	uvaNalu qamutiqaqLuNa	I also had a sled
ᑭᑭᑦᑎᑦ ᑭᑭᑦᑎᑦ ᑭᑭᑦᑎᑦᑭᑦᑎᑦᑭᑦᑎᑦ ᑭᑭᑦᑎᑦ	tamagmi amirnik naahimaliqtuk qamutikku	both of our sleds are loaded with skins

Question

ᑭᑭᑦᑎᑦ ᑭᑭᑦᑎᑦ ᑭᑭᑦᑎᑦᑭᑦᑎᑦ ᑭᑭᑦᑎᑦᑭᑦᑎᑦ? qaphinit taikuNa pigiaraphi hinitaqpihiit?

How many nights did you spend over night to over there when you started?

Jose Angutingnungniq

ᑭᑭᑦᑎᑦᑭᑦᑎᑦ ᑭᑭᑦᑎᑦ	qaphininmarik nauq	I do not know exactly how many
ᑭᑭᑦᑎᑦᑭᑦᑎᑦᑭᑦᑎᑦ	puigunmariktuNa	I really forget
ᑭᑭᑦᑎᑦ ᑭᑭᑦᑎᑦᑭᑦᑎᑦᑭᑦᑎᑦ	taapkuat talvaniiqattaqtut	those ones are always there
ᑭᑭᑦᑎᑦᑭᑦᑎᑦᑭᑦᑎᑦ	puigunmariktatkat	I really forget them
ᑭᑭᑦᑎᑦᑭᑦᑎᑦᑭᑦᑎᑦᑭᑦᑎᑦ	itqauaNNinmariktatkat	I do not remember at all

ᠳᠤᠴᠢᠭ ᠕ᠡᠯᠦᠨᠵᠣ ᠰ᠋ᠢᠶᠢᠨ ᠲᠤᠮᠤᠩ ᠬᠡᠪᠫᠤᠭᠤᠨ ᠲᠠᠬᠤᠨ ᠠᠨᠢᠬᠡᠲᠠᠭᠫᠤᠭᠢᠬᠢ?

Did you stay over night to over there for three days?

No

ᐱᓐᓴᓯᓂ ᐃᑕᓐᓴᓯᓂᐃᓐᓴᓯᓂ ᓐᓴᓯᓂᐃᓐᓴᓯᓂ piNahuni ilaqaruluaqtut qamutikku it is more than there by sled

ajurnatman because we have no choice

𐀀𐀃𐀆𐀇𐀈𐀉𐀊𐀋𐀌𐀍𐀎𐀏𐀐𐀑𐀒𐀓𐀔𐀕𐀖𐀗𐀘𐀙𐀚𐀛𐀜𐀝𐀞𐀟𐀠𐀡𐀢𐀣𐀤𐀥𐀦𐀧𐀨𐀩𐀪𐀫𐀬𐀭𐀮𐀯𐀰𐀱𐀲𐀳𐀴𐀵𐀶𐀷𐀸𐀹𐀺𐀻𐀼𐀽𐀾𐀿𐁀𐁁𐁂𐁃𐁄𐁅𐁆𐁇𐁈𐁉𐁊𐁋𐁌𐁍𐁎𐁏𐁐𐁑𐁒𐁓𐁔𐁕𐁖𐁗𐁘𐁙𐁚𐁛𐁜𐁝𐁞𐁟𐁠𐁡𐁢𐁣𐁤𐁥𐁦𐁧𐁨𐁩𐁪𐁫𐁬𐁭𐁮𐁯𐁰𐁱𐁲𐁳𐁴𐁵𐁶𐁷𐁸𐁹𐁺𐁻𐁼𐁽𐁾𐁿𐂀𐂁𐂂𐂃𐂄𐂅𐂆𐂇𐂈𐂉𐂊𐂋𐂌𐂍𐂎𐂏𐂐𐂑𐂒𐂓𐂔𐂕𐂖𐂗𐂘𐂙𐂚𐂛𐂜𐂝𐂞𐂟𐂠𐂡𐂢𐂣𐂤𐂥𐂦𐂧𐂨𐂩𐂪𐂫𐂬𐂭𐂮𐂯𐂰𐂱𐂲𐂳𐂴𐂵𐂶𐂷𐂸𐂹𐂺𐂻𐂼𐂽𐂾𐂿𐃀𐃁𐃂𐃃𐃄𐃅𐃆𐃇𐃈𐃉𐃊𐃋𐃌𐃍𐃎𐃏𐃐𐃑𐃒𐃓𐃔𐃕𐃖𐃗𐃘𐃙𐃚𐃛𐃜𐃝𐃞𐃟𐃠𐃡𐃢𐃣𐃤𐃥𐃦𐃧𐃨𐃩𐃪𐃫𐃬𐃭𐃮𐃯𐃰𐃱𐃲𐃳𐃴𐃵𐃶𐃷𐃸𐃹𐃺𐃻𐃼𐃽𐃾𐃿𐄀𐄁𐄂𐄃𐄄𐄅𐄆𐄇𐄈𐄉𐄊𐄋𐄌𐄍𐄎𐄏𐄐𐄑𐄒𐄓𐄔𐄕𐄖𐄗𐄘𐄙𐄚𐄛𐄜𐄝𐄞𐄟𐄠𐄡𐄢𐄣𐄤𐄥𐄦𐄧𐄨𐄩𐄪𐄫𐄬𐄭𐄮𐄯𐄰𐄱𐄲𐄳𐄴𐄵𐄶𐄷𐄸𐄹𐄺𐄻𐄼𐄽𐄾𐄿𐅀𐅁𐅂𐅃𐅄𐅅𐅆𐅇𐅈𐅉𐅊𐅋𐅌𐅍𐅎𐅏𐅐𐅑𐅒𐅓𐅔𐅕𐅖𐅗𐅘𐅙𐅚𐅛𐅜𐅝𐅞𐅟𐅠𐅡𐅢𐅣𐅤𐅥𐅦𐅧𐅨𐅩𐅪𐅫𐅬𐅭𐅮𐅯𐅰𐅱𐅲𐅳𐅴𐅵𐅶𐅷𐅸𐅹𐅺𐅻𐅼𐅽𐅾𐅿𐆀𐆁𐆂𐆃𐆄𐆅𐆆𐆇𐆈𐆉𐆊𐆋𐆌𐆍𐆎𐆏𐆐𐆑𐆒𐆓𐆔𐆕𐆖𐆗𐆘𐆙𐆚𐆛𐆜𐆝𐆞𐆟𐆠𐆡𐆢𐆣𐆤𐆥𐆦𐆧𐆨𐆩𐆪𐆫𐆬𐆭𐆮𐆯𐆰𐆱𐆲𐆳𐆴𐆵𐆶𐆷𐆸𐆹𐆺𐆻𐆼𐆽𐆾𐆿𐇀𐇁𐇂𐇃𐇄𐇅𐇆𐇇𐇈𐇉𐇊𐇋𐇌𐇍𐇎𐇏𐇐𐇑𐇒𐇓𐇔𐇕𐇖𐇗𐇘𐇙𐇚𐇛𐇜𐇝𐇞𐇟𐇠𐇡𐇢𐇣𐇤𐇥𐇦𐇧𐇨𐇩𐇪𐇫𐇬𐇭𐇮𐇯𐇰𐇱𐇲𐇳𐇴𐇵𐇶𐇷𐇸𐇹𐇺𐇻𐇼𐇽𐇾𐇿𐈀𐈁𐈂𐈃𐈄𐈅𐈆𐈇𐈈𐈉𐈊𐈋𐈌𐈍𐈎𐈏𐈐𐈑𐈒𐈓𐈔𐈕𐈖𐈗𐈘𐈙𐈚𐈛𐈜𐈝𐈞𐈟𐈠𐈡𐈢𐈣𐈤𐈥𐈦𐈧𐈨𐈩𐈪𐈫𐈬𐈭𐈮𐈯𐈰𐈱𐈲𐈳𐈴𐈵𐈶𐈷𐈸𐈹𐈺𐈻𐈼𐈽𐈾𐈿𐉀𐉁𐉂𐉃𐉄𐉅𐉆𐉇𐉈𐉉𐉊𐉋𐉌𐉍𐉎𐉏𐉐𐉑𐉒𐉓𐉔𐉕𐉖𐉗𐉘𐉙𐉚𐉛𐉜𐉝𐉞𐉟𐉠𐉡𐉢𐉣𐉤𐉥𐉦𐉧𐉨𐉩𐉪𐉫𐉬𐉭𐉮𐉯𐉰𐉱𐉲𐉳𐉴𐉵𐉶𐉷𐉸𐉹𐉺𐉻𐉼𐉽𐉾𐉿𐊀𐊁𐊂𐊃𐊄𐊅𐊆𐊇𐊈𐊉𐊊𐊋𐊌𐊍𐊎𐊏𐊐𐊑𐊒𐊓𐊔𐊕𐊖𐊗𐊘𐊙𐊚𐊛𐊜𐊝𐊞𐊟𐊠𐊡𐊢𐊣𐊤𐊥𐊦𐊧𐊨𐊩𐊪𐊫𐊬𐊭𐊮𐊯𐊰𐊱𐊲𐊳𐊴𐊵𐊶𐊷𐊸𐊹𐊺𐊻𐊼𐊽𐊾𐊿𐋀𐋁𐋂𐋃𐋄𐋅𐋆𐋇𐋈𐋉𐋊𐋋𐋌𐋍𐋎𐋏𐋐𐋑𐋒𐋓𐋔𐋕𐋖𐋗𐋘𐋙𐋚𐋛𐋜𐋝𐋞𐋟𐋠𐋡𐋢𐋣𐋤𐋥𐋦𐋧𐋨𐋩𐋪𐋫𐋬𐋭𐋮𐋯𐋰𐋱𐋲𐋳𐋴𐋵𐋶𐋷𐋸𐋹𐋺𐋻𐋼𐋽𐋾𐋿𐌀𐌁𐌂𐌃𐌄𐌅𐌆𐌇𐌈𐌉𐌊𐌋𐌌𐌍𐌎𐌏𐌐𐌑𐌒𐌓𐌔𐌕𐌖𐌗𐌘𐌙𐌚𐌛𐌜𐌝𐌞𐌟𐌠𐌡𐌢𐌣𐌤𐌥𐌦𐌧𐌨𐌩𐌪𐌫𐌬𐌭𐌮𐌯𐌰𐌱𐌲𐌳𐌴𐌵𐌶𐌷𐌸𐌹𐌺𐌻𐌼𐌽𐌾𐌿𐍀𐍁𐍂𐍃𐍄𐍅𐍆𐍇𐍈𐍉𐍊𐍋𐍌𐍍𐍎𐍏𐍐𐍑𐍒𐍓𐍔𐍕𐍖𐍗𐍘𐍙𐍚𐍛𐍜𐍝𐍞𐍟𐍠𐍡𐍢𐍣𐍤𐍥𐍦𐍧𐍨𐍩𐍪𐍫𐍬𐍭𐍮𐍯𐍰𐍱𐍲𐍳𐍴𐍵𐍶𐍷𐍸𐍹𐍺𐍻𐍼𐍽𐍾𐍿𐎀𐎁𐎂𐎃𐎄𐎅𐎆𐎇𐎈𐎉𐎊𐎋𐎌𐎍𐎎𐎏𐎐𐎑𐎒𐎓𐎔𐎕𐎖𐎗𐎘𐎙𐎚𐎛𐎜𐎝𐎞𐎟𐎠𐎡𐎢𐎣𐎤𐎥𐎦𐎧𐎨𐎩𐎪𐎫𐎬𐎭𐎮𐎯𐎰𐎱𐎲𐎳𐎴𐎵𐎶𐎷𐎸𐎹𐎺𐎻𐎼𐎽𐎾𐎿𐏀𐏁𐏂𐏃𐏄𐏅𐏆𐏇𐏈𐏉𐏊𐏋𐏌𐏍𐏎𐏏𐏐𐏑𐏒𐏓𐏔𐏕𐏖𐏗𐏘𐏙𐏚𐏛𐏜𐏝𐏞𐏟𐏠𐏡𐏢𐏣𐏤𐏥𐏦𐏧𐏨𐏩𐏪𐏫𐏬𐏭𐏮𐏯𐏰𐏱𐏲𐏳𐏴𐏵𐏶𐏷𐏸𐏹𐏺𐏻𐏼𐏽𐏾𐏿𐐀𐐁

ᐅᑦ ᐅᑦᐅᑦᐅᑦᐅᑦᐅᑦ tumit tautunnaruiqattaqtut trails always can not be seen

^cdΔ<Q^c▷<^cb>^cb quvianarluaqtuq it is really enjoyable

قانع لاليراققۇلىق لۇگۇ qanuq nalulirRaqquqliqLugu how hard it is to remember it well

ᐱᖅ ᐸᓄᐃᖅ ᐸᓄᐃᖅ ᐸᓄᐃᖅ ᐸᓄᐃᖅ ᐸᓄᐃᖅ arnaviNlu hiniktarvigipqaliqtaqqun

Arnavik and we used to spend over night there

$\Delta^{\text{ᑲᓐᓂᓐᓴᓚᓇᓂᓪ}}$ iqaluliNmarinalukLuk it has lots a fish

ርኑሳ ላኤህርሲኑ	taamna anNutariRaa	at the very first time
ልክጋጠርሲኑ	iqaluktariRaa	this animal he caught
ጋኑጋጠርሲኑ	tukquqtauluni	the fish he caught
ከከጋጠርሲኑ	qaNaraalunNuqtuq	they (people) put it away right away
የከጋጠርሲኑ	kihiani	after some durations
የከጋጠርሲኑ	niriRauRuq	but
የከጋጠርሲኑ	uvaNali	it is eaten
የከጋጠርሲኑ	ajuNNitluaquRaunirmun ataattattiarma	and me
የከጋጠርሲኑ		my grand-father want me to be smart
ልክጋጠርሲኑ	ihumaanu alaqannum	because Alaqannum thought that
ርኑሳ	talva	then
የከጋጠርሲኑ	hivullittumik anNuRagaaNama	whenever I caught the first one
ልክጋጠርሲኑ	nuNtaukautigitqutlugu	it should be finished right away
ርኑሳ	taimatna	like that
ልክጋጠርሲኑ	nuNtaukautigiqattaqtut	they always tried to finish it right away

Question

ላኤህርሲኑ	aNajuitlu	your past brother
ከከጋጠርሲኑ	hamatNaaraphi	when you came from there
ጋጠርሲኑ	utitmigaphi	when you go back

Jose Angutingnungniq

ል	ii	Yes
ርኑሳ	tamaani	around here
ርኑሳ	talva	then
ጋጠርሲኑ	utiqtaamigapta uvani	when we came back right here
ልክጋጠርሲኑ	kuukhiurapta	we spent our time in <i>Kuuk</i>
ልክጋጠርሲኑ	ihuqtumiiNinnaqtugut	we stayed in <i>Ihuqtuq</i>

Question

ከከጋጠርሲኑ	qanurli	then how
ርኑሳ	tamaaniiliraphi	when you were there
ከከጋጠርሲኑ	qanuriliuraRuaqpihi?	what did you do?

Jose Angutingnungniq

ላኤህርሲኑ	anaanagalu ataatagalu	my mother and my father
ልክጋጠርሲኑ	ihuqtumiiNinnaqtutmani	because they always spend their time in <i>Ihuqtuq</i>
የከጋጠርሲኑ	hiniktariaqhinnaqLuNa	when I just spent over only one night
ርኑሳ	taunuNa hinaaliaqpakLuNalu	then I went down there to floe edge

ᐱᐱᐱ ᐱᐱ ᐱᐱᐱᐱᐱᐱᐱᐱᐱᐱ ᐱᐱᐱᐱ

ataataga maani ihuqtumiiNinnaqtuq anaanagalu

my father and my mother were always staying around here in *ihuqtuq*

Appendix 2

The Map of Inuktun Place Names around Kugaaruk, Taloyoak, Gjoa Haven and Repulse Bay

assembled by Keiichi OMURA
Osaka University

Introduction

The purpose of this report is to summarize linguistic research that was carried out at Kugaaruk (Pelly Bay) Nunavut Canada in 2002 and 2006. This research was carried out as part of the '*Pelly Bay Ethnological Research Project*' directed by Prof. Henry Stewart in 2002 and 2004. The purpose of this linguistic research is to understand the Inuit culture through analyzing cognitive organization represented in language, such as ethno-taxonomy, ethno-classification and ethno-terminology. For this purpose, I started to gather a vocabulary of the Arviligjuaq dialect of Inuktitut spoken in Pelly Bay in 1996. This research is on going.

In this report I will present a map of place names around Kugaaruk, Taloyoak, Gjoa Haven and Repulse Bay (which can be found in the PDF-file in CD-Rom attached in the back cover of this packet; see also a sample of this place name map on page ?). I am not concerned here with analysis of this raw data. I hope to consider the cognitive system of Arviligjuarmiut represented in their language through analyzing this raw data and to present the result of this analysis as part of the Report of the Pelly Bay Ethnological Research Project that will be published in the not far future. Moreover, I am planning to make a basic Inuktun-English-Japanese dictionary.

Arviligjuaq is a sub-dialect belonging to Natsilingmiutut dialect, one of the Western Canadian Inuktun dialects belonging to the Inuit language of the Eskimo-Aleut family. In Natsilingmiutut there are three sub-dialects, Natsilik, Utkuhikhalik and Arviligjuaq, Arviligjuaq being spoken in Pelly Bay and Repulse Bay. Because full-scale investigations on the Arviligjuaq sub-dialect had not been carried out prior to my own research, a whole description of this sub-dialect cannot appear here. It is generally considered, however, that this dialect has some peculiar characteristics, in particular unique phoneme system. The phoneme system of the Arviligjuaq dialect is shown in Table 1. Although the ICI (Inuit Cultural Institute) established a standard writing system for Inuktitut, it is insufficient when transcribing the Arviligjuaq sub-dialect. For this reason, the

following alphabet signs are used in this transcription; /i/ =i (Δ), /a/=a (◁), /u/=u (▷), /p/=p (◁), /t/=t (◁), /k/=k (◁), /q/=q (◁), /v/=v (◁), /γ/=g (◁), /R/=r (◁), /m/=m (◁), /n/=n (◁), /ŋ/=N (◁), /j/=j (◁), /r/=R (◁), /l/=l (◁), /ʎ/=L (◁), /h/=h (◁).

This report owes much to the generous assistance of Inuit people in Pelly Bay. The place names listed in this report was gathered mainly from Jose Angutingnungniq, Levi Illuittuq, Gino Akkak, Louis Uqhunngittuq and Guy Kakiarniq. I wish to express my gratitude to them and dedicate this report to them.

(A) vowels		Front		central		Back			
	high	/i/				/u/			
	low			/a/					
(B) consonants									
		bilabial	Labiodental	alveolar	retroflex	palatal	Velar	uvular	glottal
	voiceless stops	/p/		/t/			/k/	/q/	
	voiced fricatives		/v/				/ɣ/	/R/	
	voiceless fricatives								/h/
	voiced fricative glides				/r/	/j/			
	voiced fricative laterals			/l/					
	voiceless fricative laterals			/ʎ/					
	nasals	/m/		/n/			/ŋ/		

Table 1: the phoneme system of the Arviligjuaq sub-dialect

/i/ =i (Δ), /a/=a (◁), /u/=u (▷), /p/=p (◁), /t/=t (◁), /k/=k (◁), /q/=q (◁), /v/=v (◁), /γ/=g (◁), /R/=r (◁), /m/=m (◁), /n/=n (◁), /ŋ/=N (◁), /j/=j (◁), /r/=R (◁), /l/=l (◁), /ʎ/=L (◁), /h/=h (◁).

Sample Map of Inuktun Place Names around Kugaaruk, Taloyoak, Gjoa Haven and Repulse Bay

The original version of this map is attached as a PDF-file in CD-Rom in the back cover of this packet.