THE CONSTRUCTION OF TRADITIONAL ECOLOGICAL KNOWLEDGE:

ISSUES, IMPLICATIONS AND INSIGHTS

BY

Leanne R. Simpson

A Thesis
Submitted to the Faculty of Graduate Studies
in Partial Fulfillment of the Requirements
for the Degree

DOCTOR OF PHILOSOPHY

University of Manitoba
Winnipeg, Manitoba

© March 1999

National Library of Canada

Bibliothèque nationale du Canada

Acquisitions and Bibliographic Services

Acquisitions et services bibliographiques

395 Wellington Street
Ottawa ON K1A 0N4
Canada

395, rue Wellington
Ottawa ON K1A 0N4
Canada

Your file Votre référence

Our file Notre référence

The author has granted a non-exclusive licence allowing the National Library of Canada to reproduce, loan, distribute or sell copies of this thesis in microform, paper or electronic formats.

L'auteur a accordé une licence non exclusive permettant à la Bibliothèque nationale du Canada de reproduire, prêter, distribuer ou vendre des copies de cette thèse sous la forme de microfiche/film, de reproduction sur papier ou sur format électronique.

The author retains ownership of the copyright in this thesis. Neither the thesis nor substantial extracts from it may be printed or otherwise reproduced without the author's permission.

L'auteur conserve la propriété du droit d'auteur qui protège cette thèse. Ni la thèse ni des extraits substantiels de celle-ci ne doivent être imprimés ou autrement reproduits sans son autorisation.

0-612-41628-3

Canadä

THE UNIVERSITY OF MANITOBA

FACULTY OF GRADUATE STUDIES
****

COPYRIGHT PERMISSION PAGE

THE CONSTRUCTION OF TRADITIONAL ECOLOGICAL KNOWLEDGE: ISSUES, IMPLICATIONS AND INSIGHTS

BY

LEANNE R. SIMPSON

A Thesis/Practicum submitted to the Faculty of Graduate Studies of The University of Manitoba in partial fulfillment of the requirements of the degree

of

DOCTOR OF PHILOSOPHY

LEANNE R. SIMPSON ©1999

Permission has been granted to the Library of The University of Manitoba to lend or sell copies of this thesis/practicum, to the National Library of Canada to microfilm this thesis and to lend or sell copies of the film, and to Dissertations Abstracts International to publish an abstract of this thesis/practicum.

The author reserves other publication rights, and neither this thesis/practicum nor extensive extracts from it may be printed or otherwise reproduced without the author's written permission.

ABSTRACT

Indigenous Peoples living in North America have been using their knowledge to live sustainably for thousands and thousands of years. Recently, the dominant society has developed an interest in what has become known as Traditional Ecological or Environmental Knowledge (TEK). The objective of this study is to examine the concept of TEK from Aboriginal and non-Aboriginal perspectives using the current literature and my own experiences in a First Nation community; to use an appropriate non-western methodology to learn about Indigenous Knowledge from members of a First Nation; and to use my experiences working with the community to demonstrate how western society constructs TEK, the implications of textualizing oral knowledge and of sharing knowledge in terms of marginalization and the appropriation. Chapter One provides an introduction and a brief theoretical overview of TEK research in Canada, and Chapter Two consists of a literature review of TEK and its uses by Aboriginal and non-Aboriginal societies. Chapter Three is a detailed outline of the Anishinaabe methods of inquiry, including learning-by-doing, dreaming, ceremonies, story telling and self knowledge. Chapter Four consists of a personal narrative that is interwoven with excerpts from Aboriginal experts in the literature regarding TEK and discusses the manufacturing of TEK by the dominant society, textualizing, sharing knowledge and the misappropriation of TEK. Chapter Five concludes by pulling together a series of recommendations for TEK research in the future.

ACKNOWLEDGMENTS

I wish to acknowledge the Grandmothers and Grandfathers who have guided me and this work. Chi'Meegwetch to the Elders from a number of Aboriginal Nations who have shared their teachings with me.

Chi'Meegwetch to my advisor Dr. Rick Riewe, for his constant support and encouragement.

Chi'Meegwetch to the members of my committee, Dr. Jill Oakes, Dr. Don Castleden, Dr. Harvey Payne, for their support, inspiration and positive energy.

Chi'Meegwetch to the students of the Centre for Indigenous Environmental Resources for their enlightening discussions.

Chi'Meegwetch to Deborah McGregor, Rod Whitlow, Alan Corbiere, Lyle Longclaws, Raymond Raven, Garry Raven, Garf Bushie, Burma Bushie, Norbert Hardisty, and Robin Greene, for their support and advice.

Chi'Meegwetch to my family for taking care of me throughout the years; my grandmothers, my parents Barry and Dianne, my sisters Ansley and Shannon, and my friends Avinash, Shaani, Kaia and Karen. Chi'Meegwetch Steve for your patience, strength and love. Chi'Meegwetch to Steve and Av for commenting on previous drafts.

Chi'Meegwetch to the Association of Canadian Universities for Northern Studies, Alfred Rea Tucker Memorial Scholarship, Duff Roblin Fellowship, and University of Manitoba Student Union Scholarship for financial support.

TABLE OF CONTENTS

ABSTRACT II

ACKNOWLEDGMENTS III

TABLE OF CONTENTS IV

CHAPTER ONE: INTRODUCTION 1

- The Present Study 6
- My Self in Relation to the Research 10

CHAPTER TWO: LITERATURE REVIEW 11

- An Historical Overview of Traditional Ecological Knowledge 11
- The Use of TEK by Aboriginal and Non-Aboriginal Societies 15
- Aboriginal Concerns over the Characterization of TEK 17

CHAPTER THREE: METHODOLOGY 23

- Anishinaabe "Methods" 26
  - Working Together: The Anishinaabe Way 26
  - The Elders 28
  - Community Experts 32
  - Learning-By-Doing 33
  - Story Telling 36
  - Dreaming 38
  - Ceremonies 39
  - Self-Knowledge 40

CHAPTER FOUR: ISSUES, INSIGHTS, AND IMPLICATIONS........................ 42

Personal Responsibility and Awareness.. 43

The Manufacturing of Traditional Ecological Knowledge............................ 48

Marginalizing Spiritually-Derived Knowledge................................ 55

Aboriginal Perspectives on the Environment.................................. 63

The Textualization of Indigenous Knowledge.. 66

Mis-translation Across Perceived Conceptual Universals.................. 69

Transformation From Process to Product...................................... 75

De-contextualizing Indigenous Knowledge.................................... 76

Sharing Knowledge in a Hostile Environment.. 82

Marginalization, Appropriation, and Continued Disillusion.......................... 87

CHAPTER FIVE: CONCLUSIONS.. 92

REFERENCES.. 97

CHAPTER ONE: INTRODUCTION

During the initial stages of the colonization of Turtle Island[1], European immigrants were dependent upon Aboriginal[2] Peoples and Indigenous Knowledge for their continuance and survival. As the number of European immigrants sky-rocketed and the infrastructure Europeans' needed to support themselves in the "new" land was developed, their reliance on Aboriginal Peoples diminished. For the next five centuries, the dominant society[3] in Canada relegated Indigenous Peoples to "savage", consistently denying the existence of intellect within the "Indian". Further, the processes of colonization, colonialism, imperialism and assimilation have made every attempt to undermine and destroy Aboriginal Peoples.

The *Indian Acts* of the late 1800's, made clear the intention of the Government of Canada to obliterate Aboriginal traditional forms of government and social organization in Canada. Amendments to the Act in the early 1900's made participation in ceremonies, traditional dances, songs and other celebrations illegal, with the objective of assimilating Aboriginal Peoples into Euro-Canadian society. Aboriginal children were required to attend state run schools, and a large number of children were taken away from their families and communities and forced into residential schools. A significant number of children were also adopted into non-Aboriginal families in distant jurisdictions and foreign countries. This came close to preventing an entire generation of children from learning

---

[1] A name Anishinaabe people use for North America.
[2] Aboriginal, Native, Native American and Indigenous will be used interchangeable to refer to the Original Inhabitants of North America. First Nation will refer to status Indian communities within Canada.

Indigenous Knowledge, their languages and their cultures. For Aboriginal Peoples in Canada, this period of attempted assimilation was characterized by violence and paternalism, as Euro-Canadians took control of virtually every aspect of Aboriginal Peoples' lives. Although the days of such restrictive measures have passed, even today, Aboriginal Peoples must still resist becoming assimilated into the dominant society. As Anishinaabe Elder Eddie Benton-Banai explains:

> "Today, America has replaced the bayonettes with more sophisticated, less visible weapons like school systems that ignore Aboriginal history and culture; textbooks that falsely represent the settlement of this country; and movies and media that misunderstand Aboriginal culture and portray Aboriginal life in a shallow and token way. Still the purpose is the same: to absorb Indian people into the melting pot of American society and to forget the real history of this country and the injustices done to its Native people. The old ways, these teachings, are seen as unnecessary to the modern world. It is becoming more and more evident today that many Americans feel the philosophy advocated by traditional Native people, the respect for all living things, is a roadblock to American progress" (Benton-Banai 1988:111).

Although Benton-Banai is speaking about the situation in the United States, his commentary rings true for Canada as well. Given this hostile environment, the resiliency and commitment of the Aboriginal Peoples to their traditions in the past and present cannot be understated. As the Canadian government went about destroying the land, the people and their ways of knowing, many Aboriginal practices went underground and were practiced in secret. These are now being revitalized and strengthened in a number of

---

[3] The terms "dominant society", "mainstream society" and "Euro-Canadian society" will be used synonymously throughout this dissertation.

Aboriginal communities. It is within this context that the discussion of Traditional Ecological Knowledge[4] begins.

For a number of years, western scientists in mainstream North American culture dismissed Indigenous Knowledge as subjective, unreliable and anecdotal (Wolfe *et al.* 1992). The knowledge and philosophies of Aboriginal Peoples were subsequently degraded and used as symbols of inferiority by the dominant society (Deloria 1997, Martin-Hill 1995). As oppressed peoples in Canada, forced to cope with a systemically racist reality, Aboriginal Peoples have historically been considered "primitive" in comparison to the industrialized, technologically advanced, "civilized" western society. It is with caution then, that many Aboriginal People watch the dominant society in North America once again become interested and in some cases fascinated with the knowledge of Aboriginal Peoples.

As North America searches for new ways to manage its natural resources and solve environmental crises, the knowledge of Aboriginal Peoples pertaining to the environment is an increasingly sought after commodity. Traditional Ecological Knowledge has been largely constructed by academics and non-Aboriginals as a parallel body of knowledge to what the western world terms environmental, ecological or biological. This fraction of Indigenous Knowledge is being documented in Environmental Impact Assessments (EIA) (Arctic Institute of North America and Joint Secretariat-

---

[4] Researchers refer to that fraction of Indigenous Knowledge pertaining to what the western world terms "environmental or ecological" as Traditional Knowledge, Traditional Ecological Knowledge, Traditional Environmental Knowledge. This term will be used in this dissertation to denote the western construct of Indigenous Knowledge. The terms TEK and Indigenous Knowledge are not used synonymously. The definitions of these terms will be discussed at length and in detail in Chapter Five.

Inuvialuit Renewable Resource Committees 1996, Stevenson 1996), land claims proceedings (Riewe 1992, Freeman 1976), and co-management agreements (Arctic Institute of North America and Joint Secretariat- Inuvialuit Renewable Resource Committees 1996, Cizek 1990, Feit 1988, Usher 1987), and is generally used to fill in where western scientific knowledge is lacking or to contribute in a limited way to the principles and frameworks developed by western scientific models. Environmentalists have turned to Aboriginal Knowledge seeking solutions to numerous environmental crises (Capra 1996, Jenson 1995, LaChapelle 1995, Knudston and Suzuki 1992). A few biophysical scientists have recognized the value of including Indigenous Knowledge in their own scientific studies (Oakes and Riewe 1996), and an alarming number of enthobotanists have set out to document the Indigenous use of medicinal plants in biodiversity prospecting[5] ventures (Posey and Dutfield 1996).

Despite the recognition of TEK by some members of the North American society, it is still rather rare that Indigenous Knowledge is accepted as good and valid within its own right (Stevenson 1996, Wolfe *et al.* 1992). Aboriginal Peoples and their knowledge are still measured against Euro-centric ideals of progress, development (Martin-Hill 1995), and objective quantifiable knowledge. Much of the dominant society still believes that western scientific knowledge is "better" or "more reliable" than knowledge generated by Indigenous systems. Vine Deloria Jr., a Native American intellectual at the University

[5] Posey and Dutfield (1996) define biodiversity prospecting as "The search for and collection of biological material for commercial purposes. The areas where prospecting takes place are usually species-rich environments, such as tropical forests and coral reefs. The practice is also called chemical prospecting" (1996:227).

of Colorado states "[western science] accepts non-western traditions only to the degree to which they help to bolster the existing and approved orthodox doctrines" (Deloria 1997:32), and this seems to be generally the case in most EIA's and co-management agreements in Canada (Notzke 1994). Seldom do we see Aboriginal Peoples, the holders of Aboriginal Knowledge participating in these processes in an equal and powerful manner. Wolfe *et al.* explain further:

> "Until very recently little or no credence was given by scientists and scholars grounded in the Western tradition to the validity of non-Western indigenous knowledge. Even now, when Western scholars begin to acknowledge the existence of indigenous knowledge they encounter several problems in tapping into it. Since indigenous knowledge generation does not use the same methods of data collection, storage, analysis and interpretation as the scientific tradition, those trained in the scientific tradition have great difficulty in acknowledging the validity of data generated in unfamiliar ways. Even those who do acknowledge the existence of indigenous knowledge generally apply scientific methods to verify and validate indigenous knowledge. They seek to recognize their categorizations in native systems, and apply their typologies to what they think indigenous knowledge systems are" (Wolfe *et al.* 1992:5).

The construction and definition of TEK by western intellectuals has meant that Indigenous Knowledge has been packaged in a way that is easily accessible to the mainstream society. The "packaging" process involves the translation of knowledge across languages, world views and methods of transmission. Knowledge is physically separated from the people, the land, the spiritual realm, the Oral Tradition[6] and from the

[6] Although the Oral Tradition was and remains to be a fundamental way of "recording" knowledge, Anishinaabe People also use pictographs, scrolls, carvings, paintings, beadwork, clothing, music and other artistic endeavours to "record" knowledge.

values and philosophies that provide its context. The process also involves the manipulation or reduction of knowledge from a process-oriented, highly contextualized system to content or product. All of these phenomena produce a widely accepted concept of TEK (at least in academia) that is fundamentally western, not Aboriginal. This production of TEK greatly increases the chances of mis-representing and mis-interpreting the knowledge of Aboriginal Peoples, and has led a number of Aboriginal people to feel that:

> "efforts by the dominant culture to access their Traditional Knowledge represents just another form of exploitation. Having taken over Aboriginal lands, mined Aboriginal resources and marginalized Aboriginal peoples, government and industry have turned their attention to TK [Traditional Knowledge]" (Stevenson 1998:4).

The Present Study

The purpose of this research is to use Indigenous methods of inquiry to learn about Anishinaabe Knowledge from members of an Anishinaabe community, and to use these insights to discuss some of the current issues in the field of TEK. I was invited to an Anishinaabe community of about 600 people, located in Manitoba, in the fall of 1997 to work with community members on a number of environmental issues. During the past two years, I have worked on documenting land uses, assessing impacts from an Aboriginal perspective, interviewing Elders, participating in ceremonies, listening to stories, dreaming and "learning by doing" out on the land with members of the community.

The objective of this study is to examine the concept of TEK from Aboriginal and non-Aboriginal perspectives using the current literature and my experiences in a First Nation community; to use an appropriate non-western methodology to learn about Indigenous Knowledge from members of a First Nation; to use my experiences working with the community and the literature on TEK to demonstrate how western society constructs TEK; to investigate the implications of textualizing oral knowledge and sharing documented knowledge with the dominant society; and to explore how the marginalization and appropriation of TEK leads to continued disillusion in Aboriginal communities.

I have chosen to base this dissertation on my own experience because I believe the responsibility for and ownership of Indigenous Knowledge lies with and within the people who have the knowledge. Indigenous Knowledge is the property of those individuals, their communities and their Nations. It is inappropriate for outside researchers to document such knowledge for the sole purpose of thesis, dissertations and academic advancement. Documenting Indigenous Knowledge freezes it in a context which is contrary to its creative, dynamic, living, personal nature. Furthermore, the documentation of Indigenous Knowledge makes the knowledge more accessible to non-Aboriginal society, increasing the chance of mis-use and mis-interpretation, both of which are damaging to Aboriginal Peoples in Canada. It is for these reasons that this dissertation will focus on my experiences working with a First Nation community and with Anishinaabe Knowledge in relation to the current literature in the field. I am keenly aware of the on-going debates around the intellectual property rights of Indigenous

Peoples and over the appropriation of Indigenous Knowledge by the dominant society. This study will not document the Anishinaabe environmental knowledge of a First Nation. It will not attempt to provide descriptive accounts of my experiences in the community, nor will it include any of the reports, interviews, or land use work I have done with the community. These documents belong to the community, and are for the community to use or not use at their sole discretion.

The results of my research regarding issues in Traditional Ecological Knowledge are primarily discussed within the context of my experiences with one particular community. I have, however been influenced in my life by a number of other Anishinaabe Elders and spiritual teachers, and Elders from other Nations. Indigenous Knowledge systems are complex and learning is a life long process within Anishinaabe Traditions and requires decades, if not years. Research projects have relatively short time frames in comparison. The people in the community I have worked in have shared with me glimpses into their Anishinaabe Knowledge and my learning process will hopefully continue for a great number of years. This dissertation therefore represents a moment in time regarding my current thinking. It is not necessarily the thinking of the community, or of other Anishinaabe People. The opinions expressed herein are mine alone.

Although Aboriginal Nations are diverse and Aboriginal cultures are continually evolving, it is my understanding that there exist fundamental commonalties between Indigenous groups within the boundaries of Canada and North America (Beck *et al.* 1990). These commonalties are used to discuss a number of aspects of TEK in general and Anishinaabe Knowledge in particular.

Although there exists a great deal of material written about Traditional Ecological Knowledge in an international context, I will focus on the Canadian experience. I have included literature written by Aboriginal academics, Elders and those Aboriginal People who are considered experts by the Aboriginal community (but do not necessarily have a western education), with supporting evidence from non-Aboriginal scholars, when the discussion is *about* TEK or Indigenous Knowledge. I have focused on the published voices of the Aboriginal academics, Elders and experts for two reasons. First, I believe that people who have Indigenous Knowledge, not those that document Traditional Ecological Knowledge, are the experts in TEK and Indigenous Knowledge (see Grenier 1998). Secondly, these voices tend to be absent in the "mainstream" academic literature on TEK and Indigenous Knowledge. I did not find a great number of Aboriginal People writing about TEK in refereed academic journals about the environment. More often, I found Aboriginal People writing about the environment and about their knowledge of the environment in places that had a large Aboriginal readership - Aboriginal journals, magazines, books and newspapers. I also found Aboriginal people writing about the environment in art exhibits, and in broader contexts such as healing, politics, women's studies and literature. I found Aboriginal People writing about TEK and Indigenous Knowledge for Aboriginal organizations. And pulling all of these sources together, I found that these Aboriginal voices were saying things that were quite different from what the current academic discourse on TEK might indicate. Where I have used aspects of Indigenous Knowledge to demonstrate Aboriginal perspectives, philosophies, values, principles or ideas, I have tried to rely on published Elders' or TEK holders' voices.

My Self in Relation to the Research

I am of Anishinaabe and Scottish ancestry, and I have grown up off reserve, outside of my Anishinaabe culture. I have been re-learning my traditions and culture for the past ten years. My Anishinaabe name is Petahsemosake, Walking Towards Woman, and I am a member of the mishibizhii (lion) clan. My relatively young age makes me very much a beginner. I have been formally trained in western science, and have been working with Aboriginal communities and organizations in the field of the environmental studies and Indigenous Knowledge for the last five years. This dissertation focuses on my personal learning, and this learning provides the basis for my discussion of issues in TEK and Indigenous Knowledge. These perspectives appear as a narrative or a commentary throughout the document and they appear as italicized passages throughout the text. Direct quotes from other authors will appear in quotation marks and will be indented.

Aboriginal cultures and communities are diverse. I acknowledge that I have made some generalizations about many of the experiences of Aboriginal Peoples in order to construct a different perspective on TEK than is often discussed in the "mainstream" TEK literature. These generalizations are based on my own life experiences as I do not pretend to be an expert on Aboriginal Peoples, or Anishinaabe People. I am only an expert on my own life and experiences.

CHAPTER TWO: LITERATURE REVIEW

An Historical Overview of Traditional Ecological Knowledge

Indigenous Peoples living in Canada have been using their knowledge to live the good life[7] for thousands and thousands of years. In the early 1970's anthropologists and enthnoscientists first began to recognize that "other" cultures had mechanisms of organizing their worlds and ways of classifying plants and animals (e.g. Berlin *et al.* 1968, Diamond 1968, Berlin 1973, Dwyer 1976). At the same time, researchers in the fields of international and community development, also began to acknowledge the existence of Indigenous Knowledge systems as they moved from orthodoxy to participatory and collaborative research methodologies (Sillitoe 1998).

In the late 1970's, as the political climate in Canada changed, the recognition of Aboriginal Rights came to the fore and a number of non-Native researchers were asked by Aboriginal organizations to work with their people in projects to document land use and occupancy (Driben 1993, Riewe 1992, Brody 1981, Labrador Inuit Association 1977, Freeman 1976)[8]. The primary purpose of these projects was to prove to the Canadian courts in western terms, that specific groups of Aboriginal Peoples had been occupying

---

[7] "The good life" or "mino-bimaatisiwin" is the Anishinaabe version of the Aboriginal concept meaning the aim of life is to live a good life (according to Indigenous principles) on earth. See LaDuke (1997), Williams (1989).

[8] For a more complete list of land use mapping projects in Canada see Assembly of First Nations (1995) and Poole (1994).

and using their homelands since time out of mind. Projects focused on land use, documenting where people hunted, fished, trapped, gathered and camped. These research projects formed the legal basis for the recognition of Aboriginal land rights, and they had the effect of transforming components of Indigenous Knowledge into a form that was presentable and acceptable from the point of view of the Canadian legal system and of Canadian mainstream society in general. In this instance, Aboriginal Peoples and their allies had no choice but to play by the rules established by the dominant culture. The greater gain of having Aboriginal land rights recognized by the federal government often out-weighed the limitations of documentation projects.

In more recent times, many Aboriginal communities themselves have undertaken mapping[9] projects despite their concerns over the ability of maps to represent Indigenous Knowledge, largely because "maps have recently acquired instrumental value in the context of negotiations with governments and other external interests" (Assembly of First Nations 1995:33). Maps and other documentation methods tend to focus on practices and seasonal patterns of resource use as well as accumulated factual knowledge, or the "data" component of TEK, although they do not adequately represent the cosmologies of the earth, and the rituals, codes and values governing behaviours towards one's self, the community, the Nation and the cosmos. It is usually the accumulated factual knowledge that the dominant society is interested in (Assembly of First Nations 1995), and as a result, many of these mapping projects, whose original purpose was not to represent

---

[9] The same may be said for other documentation tools.

Indigenous Knowledge, but to provide evidence in negotiations or court proceedings, are seen by mainstream society as representing Indigenous Knowledge.

The Assembly of First Nations states that "outsiders are generally interested in practical and factual dimensions of TEK regarding the health of the earth and the health of its people" (1995:4), and this claim holds true when one examines the use of TEK by pharmaceutical companies and people working and researching in the environmental field. Academics and pharmaceutical companies have been mining Indigenous Knowledge of plants throughout the world in an exploitive manner, that is, in the absence of informed consent and compensation despite large profits (Posey and Dutfield 1996). The exploitative nature of the relationship between the pharmaceutical industry (and the academics who work for them) and Indigenous Peoples is one that is not confined to the developing world[10]. North American Indigenous Knowledge of medicinal properties and uses of plants, is also the topic of numerous guide-books (Lacey 1993, Stark 1992, Hutchens 1991). These books focus on the physical properties of plants, and generally leave out the production process, ethics governing the harvesting of Medicinal plants, and the spiritual context of healing.

---

[10] We need only to remember the story of Canadian nurse Rene Caisse and "her" cure for breast cancer. She learned of the cure from an Anishinaabe Medicine Man, experimented with it and then offered it to the western world as "Essiac", naively believing that the physical recipe or the active ingredient was solely responsible for the mixture's curing properties. From an Anishinaabe perspective, the plants would have to be picked at a certain time of day by a trained Medicine person, after the proper ceremonies, and prayers had been done. Ceremony and prayer would have likely been a key component of the process of making the Medicine, and of administering it to the patient. To Caisse's dismay, no pharmaceutical company would produce Essiac. The recipe however appears in numerous alternative health books (See Weed 1996), without consent from or compensation to the un-named Anishinaabe Medicine Man. For the complete story, from an non-Native perspective see Glum (1988).

Becoming a traditional healer involves decades of apprenticeship with a Medicine person and is a lengthy, rigorous and complicated process, as is becoming a western medical doctor. However, these guidebooks would have the reader believe that preparing and using Indigenous Medicines is as simple as making tea from the leaves from a strawberry plant. Further, they completely ignore the ethics and values that govern the practice, as well as their spiritual base, thus giving the impression that Indigenous Knowledge concerning medicinal plants is *only* factual.

The environmental field became interested in Indigenous Knowledge when researchers began to look for alternative approaches to western science and technology, and studies shifted from theoretical approaches to applied approaches (Dene Cultural Institute 1993). The focus of this research, spanning the late 1980's and early 1990's has been to convince the scientific community that Indigenous Knowledge is valid in its own right (Wolfe *et al.* 1992, Colorado 1988, Colorado and Collins 1987); allowing the mainstream society to understand the values, philosophies and sustainable practices of Aboriginal Peoples (Clarkson *et al.* 1992; Knudston and Suzuki 1992; Berkes 1994, 1993, 1991, 1989, 1988; Feit 1988; Gunn *et al.* 1988); and on integrating TEK and western science (Johannes 1993; McDonald and Flemming 1993; Nakashima 1993, 1991; Johnston 1992; Usher 1987). The international community also recognized the importance of TEK in this context through the International Union for the Conservation of Nature's (IUCN) *World Conservation Strategy* (1980); the World Commission on Environment and Development's *Bruntdland Report* (1987) and in Article 8(j) of the United Nations' Convention on Biodiversity (Higgins 1998). It is only most recently

that we have seen a shift in the focus of the TEK literature once again. This time, it is from applied approaches to incorporating Indigenous Peoples, not just abstractions of their knowledge into the processes of environmental management (Stevenson 1998).

The Use of TEK by Aboriginal and Non-Aboriginal Societies

In North America, TEK is used by the dominant society only to the extent that it promotes existing western ideals (Deloria 1997, Wolfe *et al.* 1992). The dominant society in Canada uses TEK to improve scientific research, to provide environmental base-line data, in environmental impact assessments, and to monitor development impacts (Grenier 1998, Berkes 1993). Berkes (1993) also adds that TEK is used in resource management, and in protected areas and for conservation education. Aboriginal Peoples use TEK to advance their interests. As well as using TEK as evidence in land claim proceedings[11], TEK is used to demonstrate the impacts of development (McDonald *et al.* 1997, Northern River Basins Study 1992), to gain decision-making power in co-management agreements (McDonald *et al.* 1997, Arctic Institute of North American and Joint Secretariat- Inuvialuit Renewable Resource Committees 1996) and to gain legitimacy in the eyes of resource managers and the dominant society (Gwich'in Renewable Resource Board 1997, Dene Cultural Institute 1993).

---

[11] See references on page 12.

Why would Aboriginal Peoples use a western constructed concept such as TEK to advance their interests? The answer lies in the historic and contemporary relationship between Aboriginal Peoples and federal government of Canada. Aboriginal Peoples and Indigenous Knowledge have survived successive assimilation attempts by the federal government, in part because of the tenacity of our ancestors. Joseph Couture, a Native academic states:

> "That Natives have managed to retain any traditional values and attitudes at all in the face of violence, dispossession, betrayal, degradation and misguided paternalism, systematically visited upon them since the 1600s is astounding" (Couture 1996:255).

We owe our existence to the perseverance, persistence and determination of Grandmothers and Grandfathers. Aboriginal Peoples continue to adapt and develop survival strategies to cope with colonialism and to ensure survival as Aboriginal Peoples. Whether Aboriginal Peoples use western constructs or paradigms, Indigenous paradigms, or focus on participatory research methods to work with outside researchers, the purpose is generally the same; to advance the interests of the community. Stevenson explains that:

> "..the textualization of Traditional Knowledge [TK][12] can serve Aboriginal interests. There is a sense of urgency to record TK before the elders who possess this knowledge pass on. This effort can serve Aboriginal interests, for example, in terms of establishing proof to secure access to land and resources under existing constitutional arrangements. First Nations and other Aboriginal groups have, until recently, had to play by rules established by the dominant culture -- though recent Supreme court decisions in the *Sparrow* and *Delagamuukw* cases suggests that Aboriginal groups can now set *some* of the rules themselves. The textualization of TK and related forms of acquiescence by First Nations and other Aboriginal groups in the context of securing land and resource tenures should be regarded only as an interim measure within a larger strategy of social, cultural, economic and political empowerment and self-determination" (Stevenson 1998:5).

Aboriginal Concerns over the Characterization of TEK

Aboriginal concerns over the characterization and use of TEK have only recently been articulated outside of Aboriginal communities and organizations and incorporated in TEK literature. (Brubacher and McGregor 1998, Arctic Institute of North America and Joint Secretariat - Inuvialuit Renewable Resource Committees 1996, Goodstriker 1996, Salmón 1996, Assembly of First Nations 1995, Lucky 1995, Brascoupe 1992). Jacqueline Luckey, a Metis researcher, conducted one of the only studies that documents Aboriginal and non-Aboriginal perspectives on TEK in the field of environmental

---

[12] Stevenson (1998, 1997, 1996) defines Traditional Knowledge as the component of Indigenous Knowledge that includes Traditional Ecological Knowledge and other kinds of Traditional Knowledge that may include cultural, social, and spiritual knowledge. What he refers to as "the textualization of TK", I refer to as TEK.

management (1995). Her study is important because it gives voice to a number of Aboriginal concerns over how TEK is studied and used by the dominant society. She found that some people in the Aboriginal community are concerned with the approach non-Natives are taking with TEK, for the following reasons:

> "First, many researchers are asking for donations of time, energy, and information from people and communities without offering adequate reciprocation. Second, some non-Native researchers, in doing research, are taking on the role of defining what TEK is and how it should be used. This is not acceptable to the Native community, because of the great potential for misunderstanding and misuse of knowledge, and because it can represent a violation of their intellectual property rights" (Luckey 1995).

These opinions are widely discussed among Aboriginal Peoples in the environmental field. Luckey was discussing her interview questions with Deborah McGregor, an Anishinaabe doctoral student in forestry at the University of Toronto. Deborah asked:

> "'Why do non-Natives think they should be studying TEK in the first place?' Inherent in this question is the recognition that whoever "studies" TEK gets to define it, and has control over what types of things are studied, and which are ignored. McGregor pointed out that for one thing, non-Natives are often not equipped to understand the dynamics of a particular community, and who they need to speak to to get accurate information. Also, community members, for many reasons, may not cooperate or direct researchers to the right people. Even if the researchers do get good information, they still have the power to define what is worthy of recording and to interpret the information from their point of view. Then, ironically, the results that they report in the end are presented as being descriptive of "traditional" knowledge. It is not appropriate for non-Natives to "study" TEK, when studying it implies the power to define it" (Luckey 1995:55).

At the same time, Aboriginal communities face a even greater pressure from outside researchers to share their knowledge[13]. Henry Lickers, a Mohawk and director of the environment at Akwesasne explains:

> "At Akwesasne, we get fifty to sixty people like this every year, coming in and saying 'tell us everything', and we do it. Now what we're saying is 'how does the equity flow? How does the knowledge help you, but how does it help us? ...right now universities across Canada are looking at TEK and there's hundreds or thousands of people working on it, and they all want to bleed the communities dry. What's it for? Not the communities, but for themselves" (Luckey 1995:44).

Duane Goodstriker, a Blood, in his article entitled "The TEK Wars", describes a series of difficulties between a community focus group of which he was a member and the Department of Indian and Northern Affairs (DIAND), in creating a First Nations Environmental Assessment Manual. One component of the manual was dedicated to TEK. The focus group believed that TEK should be included in the assessment and decision-making process, that it must have a role equal to scientific and technical data (Goodstriker 1997). The first "TEK War" occurred when DIAND failed to recognize that TEK was local and unique to each specific community and Nation. The second "TEK War" occurred over the meaning of TEK. Goodstriker explains:

---

[13] Also see Jill Oakes and Rick Riewe's article entitled "Communicating Inuit Perspectives on Research" where they discuss Inuit perspectives on a similar problem (Oakes and Riewe 1996).

> "In writing the manual, we thought of TEK as relating to ecological knowledge at the time of first contact with the Europeans. In camp two hundred to five hundred years ago, how did an individual interact with the environment? At the community level, what was the people's understanding of where they fit in Creation? How did they conceive of the cosmos, the earth, and other creatures? What rules and practices did they have in place for conservation to ensure sustainable supplies of crops and animals to hunt? Once again DIAND objected, contending that such beliefs, practices and attitudes could not be determined after so many years of interaction with Euro-Canadian society and the resultant changes in Native communities. We in turn, argued that TEK could be gathered by interviewing our Elders" (Goodstriker 1996:147-8).

Goodstriker and DIAND also disagreed over how TEK would be gathered:

> "DIAND, as a prerequisite to the provisions of funding, demanded that it be in written form. This posed a serious and immediate logistical problem. Our cultures are oral cultures, Our Native languages are still the first language of many of our elders. Those languages carry within them our thoughtworlds and our cultures, and the differences in worldview between these cultures and the West often make concepts difficult to render into English. An additional difficulty arises because our languages have been reduced to written form only within the last twenty years. Though these transliterations are reasonably advanced, they are far from perfect. I finally told DIAND that, in order to get the TEK portion for the manual, it had to supply us with enough money to videotape the interviews with the elders" (Goodstriker 1996:148).

Russell Means, a Lakota and long time activist, summarizes the concerns of Lickers and McGregor, the findings of Luckey, and the frustrations of Goodstriker:

> "What's at issue here is the same old question Europeans have always posed with regard to American Indians, whether what's ours isn't somehow theirs. And of course they've always answered the question in the affirmative. When they wanted our land they just announced that they had a right to it and therefore owned it. When we resisted the taking of

> our land they claimed we were being unreasonable and committed physical genocide upon us in order to convince us to see things their way. Now, being spiritually bankrupt themselves, they want our spirituality as well" (Churchill 1991:41).

Non-Aboriginal researchers have also recently begun to express many of these concerns (Sillitoe 1998; Grenier 1998; Stevenson 1998, 1997, 1996; Oakes and Riewe 1996), yet there seems to be relatively little discussion of these issues in the literature, compared to the hundreds of papers appearing each year on TEK itself. Paul Sillitoe, an anthropologist comments:

> "The considerable problems encountered in trying to understand something about others' sociocultural traditions are not to be glossed over; misrepresenting them will lead to disillusionment. The current debate over whether it is justifiable to talk about indigenous knowledge illustrates the need for an anthropological contribution in that it ultimately questions the discipline's reason for existence (Agrawal 1995 a,b; Sillitoe n.d.)" (Sillitoe 1998:224).

Marc Stevenson (1998,1997,1996), an anthropologist continues to characterize the dominant societies use of TEK as misappropriation and commodification.

> "Traditional Knowledge (TK) has been and continues to be misappropriated and commodified by environmental managers and other practitioners of the western scientific tradition. The most common practice is to take specific elements of TK that are of interest to the conservation bureaucracy out of context and then insert them into the dominant framework of western scientific knowledge. This procedure almost always entails sanitizing and rendering TK into a form that is palatable, recognizable and useable to the dominant culture. ... The effort to textualize TK typically involves translating those elements of TK deemed useable, i.e., rationale, by the dominant ideology into a language

> and framework that it then can appropriate and use for its own purposes. Text, and other literate transformations, such as GIS (Geographical Information Systems), rather than the holders of TK then become the authoritative source or reference. In the process, holders of TK are systemically excluded from decision-making, and lose ownership and control over the use and application of this knowledge" (Stevenson 1998:4-5).

Stevenson suggests that we need to think of Traditional Knowledge "not as a commodity, but as a process, to be developed and nurtured differently in each context" (1998:10). For many researchers this is a new way of thinking about TEK, for many Aboriginal Peoples it is critical to end the mis-representation, appropriation and exploitation of Indigenous Knowledge.

CHAPTER THREE: METHODOLOGY

In the recent past, a number of researchers have written about the importance of conducting research in a context that is relevant to Aboriginal Peoples and serves to advance their interests (Simpson and Driben 1997, Hoare *et al.* 1993; Kurelek 1992, St. Denis 1992, Ryan and Robinson 1990, Castellano 1986). A growing number of researchers are exploring the idea of using Aboriginal paradigms, methodologies and methods in research they conduct with Aboriginal Peoples (Simpson In Press, Graveline 1998, Kawagley 1995, Kinew 1995, Martin-Hill 1995, Colorado 1988). In this case, researchers are not developing new paradigms and methodologies; they are simply acknowledging the existence and validity of knowledge creation and transmission in Indigenous Knowledge systems.

Aboriginal Peoples learn about themselves and their environment through experiences; detailed observations over long periods of time, passed down through generations by the Oral Tradition; experimentation and active investigation. Much of Aboriginal Knowledge however, is derived from the spirit-world. The stories of Anishinaabe story-teller Maude Kegg, in *Portage Lake: Memories of an Ojibwe Childhood* (Kegg and Nichols 1992) show how spiritually derived knowledge is fully integrated into the consciousness of Anishinaabe People and contemporary Aboriginal people who follow traditional ways. "Spiritual knowledge" or in the world of many Aboriginal Elders, "Power", forms both the foundation of knowledge and knowledge itself. It is at once context, content and process.

Scientists have found the spiritual nature of Indigenous Knowledge difficult to understand. Many researchers simply do not accept the reliability or validity of spiritually derived knowledge. Those who do, find it difficult to "use" or include knowledge derived from the spirit world in their studies (Wolfe *et al.* 1992). Social scientists often focus on "collecting", "gathering" or "documenting" non-spiritual knowledge. Even when using post-positivist research paradigms, spiritual knowledge is not often acknowledged and treated as the foundation of Indigenous Knowledge. In Aboriginal paradigms, knowledge from the spirit-world is taken seriously, as an integral component of knowledge and the processes of coming to know (Graveline 1998, Martin-Hill 1995, Beck *et al.* 1990).

Although my work in the community demanded at times that I employ social science methods to meet some of the objectives of the community, these tasks formed a small part of my experience, and are not the focus of this dissertation. This study operates from an Anishinaabe paradigm[14], based on traditional principles. As the researcher, I am fundamentally a learner or student, and my teachers were the community experts and Elders.

The book *The Sacred: Ways of Knowledge, Sources of Life,* first published in 1977 by the Navajo Community College, discusses in a comprehensive manner Indigenous world views, and the concepts and practices of Indigenous Knowledge systems. The authors outline story telling, song, dance, prayer, ceremony and experience

---

[14] It is not my purpose here to articulate an Anishinaabe paradigm. To understand Anishinaabe perspectives see the following Anishinaabe Elders' discussion of the topic: Kinew 1998; Raven *et al.* 1998; Longclaws 1996, 1994; Raven and Prince 1996; Kegg and Nichols 1992; Benton-Banai 1988.

as methods Indigenous Peoples use to learn sacred knowledge (Beck *et al.* 1990). Pam Colorado, a member of the Oneida Nation, re-introduced the idea that Indigenous Peoples, have science or a way of coming to know into academic literature in the education field. She also outlined the methods of Indigenous science which included talking with Elders, prayer, fasting and ceremony (Colorado 1988, Colorado and Collins 1987). Nearly ten years later, Greg Cajete, a Tewa (In Press), Fyre Jean Graveline, a Metis (1998), and myself (Simpson In Press) recognized experiential learning, ceremony, and story telling as key elements of Indigenous teaching and learning[15]. Simpson (In Press) and Cajete (In Press) also recognized dreaming, and apprenticeship or tutoring as methods. Other ways Aboriginal Peoples transmit their knowledge include making clothes (Oakes 1997), artistic endeavours and several other well-developed processes[16].

Although a few Aboriginal academics are re-introducing traditional Indigenous ways of teaching and learning and revitalizing traditional pedagogies(Cajete In Press; Simpson In Press, Graveline 1998), few have used these methods of learning as research methods. Dawn Martin-Hill, a Mohawk women, did use dreaming and ceremony as methods in her dissertation research with the Lubicon Cree people, entitled *Lubicon Lake*

---

[15] Learning in Anishinaabe society and other Aboriginal cultures is a life-long experience. The relatively short time frame of many academic endeavours would make it impossible to learn using these methods. These methods are ways that I have used to learn more about my culture and I will continue to do so. This work represents a snap-shot of those experiences.

[16] Other processes of knowledge transmission may include singing, dancing, carving, and birch bark scrolls. These differ among Aboriginal cultures. All of these authors - Colorado 1988, Beck *et al.* 1990, Graveline 1998, Cajete In Press, and Simpson In Press, clearly state that they did not invent or develop these methods - they are ancient methods Indigenous Peoples used for thousands of years. They are also not the only ways Indigenous Peoples taught or learned. Roles and Responsibilities were often taught by the processes of naming and learning Clan affiliation. There were and are many other important processes. In many cases, these methods of coming to know were given to Indigenous Peoples as gifts from the spirit-world. Humans did not find or develop these processes, the processes found us. These authors have simply re-introduced these long standing principles into the dominant society.

Nation: The Spirit of Resistance (Martin-Hill 1995). Perhaps more importantly than the researchers' use of these methods is the fact that they have been used by Indigenous Peoples for thousands of years as ways of coming to know about themselves, the world around them and other beings (Brody 1981, Hallowell 1955). The Anishinaabe methods of inquiry I have used as research methods in this dissertation[17] include; Anishinaabe collaboration[18], apprenticeship with Elders and community experts, learning-by-doing, ceremony, dreaming, story telling and self reflection.

Anishinaabe "Methods"

Working Together: The Anishinaabe Way

In the past, the Anishinaabe of Manitoba and Ontario followed a way of life that was in concert with the cycling of the seasons, spending the winter time in family hunting grounds, and coming together at common camping spots in the summer to fish, gather, hunt and to govern (Holzkamm *et al.* 1998, Driben and Simpson 1996, Kinew 1995, Driben 1993, Hallowell 1992). When needed, leaders and councils would emerge to make decisions and then disband when the conflict or issue was resolved. It is in this way that important decisions were made. The nature of this decision making method ensured that particular band experts were selected, based on the nature of the issue at hand and

---

[17] There exists overlap and inter-relationship between these methods. For instance the Elders would teach me concepts by telling me stories. I would ask Elders for help interpreting dreams. Learning-by-doing meant participating in and experiencing ceremonies, story-telling, dreams and self-reflection.
[18] This is not to be confused with post-positivist collaborative research.

included in the decision making process. The Clan System employed in Manitoba and along the south shore of Lake Superior operated on a similar basis:

> "While the clan was represented at the central fire it was not always represented by the same person. In fact, who was there was dependent upon the decision to be made. If it had to do with the assessment of the resources of the immediate territory, the clans would send their best hunters and medicine people to discuss the issue at hand...If it was a decision that related to contact with another band, warriors [meaning protectors of the people]and statesmen would be sent to discuss the matter...the central fire was not always a static body politic that convened at regular intervals and attempted to answer all the questions of the community. Rather, it was leadership appointed by experience and representation and convened at those times that decisions would have to be made" (Clarkson *et al.* 1992).

Although the First Nation community I worked with operates under an *Indian Act* type government[19], early in my research a group formed to deal with environmental issues the community was facing[20]. There was a core group of five members that I met with monthly throughout the work, although membership in the group varied depending upon the issue at hand. This group also directed my research and other work with the community. They were responsible for introducing me to Elders and other community experts. They organized several trips into the traditional homeland of the First Nation and they organized several ceremonies. They were my Anishinaabe teachers. I held them in a position of power, and our relationship was characterized by respect, friendship and

---

[19] This type of government consists of an elected Chief and Council based on the population of the community and has been imposed on First Nation communities by the Federal Government through the *Indian Act*. Some communities have resisted, maintaining traditional forms of government.
[20] I refer to this group as the "environmental issues group" throughout the dissertation.

open-ness. All the members of this group were involved in various activities surrounding traditional ways of community healing. We all shared a traditional belief system and were at various stages in the process of reclaiming our cultural traditions. It was these individuals who I spent the most time with, in sharing circles, speaking about our dreams, camping, hunting, fishing, participating in ceremonies, story telling, learning by doing and working on various community projects.

The Elders

> "We are grateful to our Elders, our grandmothers and grandfathers for their generosity and kindliness in sharing with us their wisdom and knowledge. We are grateful for the example they set for us as keepers of the culture and traditions and values of our people. The strength, courage and dignity that they exemplify are a constant source of inspiration. Their continued commitment to the survival of our languages, their concerns about the environmental and the healing of our people is important to the future of our people. Our leaders, our young people and those yet unborn must have access to this knowledge and wisdom if we are to survive as strong and healthy communities" (Fox 1996:182).

It has long been recognized by both Aboriginal Peoples (Graveline 1998, Armstrong 1995, LaDuke 1994b, Martin-Hill 1995, Medicine 1987, Couture 1991, Colorado 1988) and social scientists (Oakes and Riewe 1997, Stiegelbauer 1996, Cruikshank 1990, Knudston and Suzuki 1992) that the contemporary re-emergence of Elders is crucial to understanding Aboriginal ways.

Social scientists have recognized Elders as the historians or keepers of a particular Aboriginal world view, holding the knowledge of the culture's spirituality and social structure. They view the Elders as the historians, philosophers, leaders and teachers of

the community (Oakes and Riewe 1997, Cruikshank 1990, Knudston and Suzuki 1992). These researchers often use Elders as consultants in land use studies, oral history research, and ethnographic studies.

Aboriginal Peoples also consult their Elders. In both historic and contemporary times, when members of a particular Aboriginal Nation wished to seek out specialized knowledge from an expert, they would typically seek out an Elder, offer tobacco and commence an apprenticeship with the Elders as teachers (Colorado 1988). Today, Elders are sought out by younger Aboriginals who are trying to learn and revitalize traditional ways, and are seeking advice about specific issues the community may face or to engage in a dialogue between the traditions of the dominant society and Aboriginal societies (Graveline 1998, Couture 1991). Graveline explains further:

> "Elders' advice is still regularly sought in coping with the dilemmas facing us. People come to ask Elders for advice because they can usually find an appropriate narrative or song to broaden the framework for thinking about a question, both when trying to explain some past decision and when encountering ideas new to us" (Graveline 1998:63-64).

Couture also states:

> "Elders posses keys to a classical journey of human and earth ecological transformation. In this era, they are being called upon to reinterpret and to apply the Tradition, The Story, in a new way" (Couture 1992:50).

Therefore, developing a relationship with one or more Elders is essential to learn anything about Indigenous Knowledge. Simply put, the Elders are the source and the teachers of

the North American intellectual tradition (Final Report Royal Commission on Aboriginal Peoples, Volume 1996(2)).

I was directed to the Elders of the community by the Chief and Council and again by the environmental issues group. I visited a number of Elders over an eight month period, from June 1998 to February 1999. The members of the environmental issues group generated the list of Elders, and one community member took me around to their homes to introduce me. I arranged times to come back and visit with them, and I generally returned a number of times to each Elder. Initial visits focused on establishing a relationship. As Pam Colorado explained:

> "The visit is an essential ingredient of Native scientific methodology. The visit includes introductions, establishing the relationship between the Elder and the younger person (Who is your clan? Who is your family? What is your Indian name?) socializing including humour, and finally raising the purpose of the visit. Through visits a contract is established. Often the contracting process requires several visits, the apprentice will do chores around the Elder's home, listening attentively and follow direction about mundane activities. Through this process, trust is established and a genuine interest in the welfare of the Elder is promoted. This is important - the Elder is about to share knowledge that is powerful, sacral, and often of a personal nature - the recipient must be prepared" (Colorado 1988:57).

During the initial visits, I offered the Elder tobacco and a small gift. If she or he accepted the tobacco, I explained who I was and what I was doing or what I wanted to know. To show the Elders that I respected them, I was careful to leave my academic skills in Winnipeg and I attempted to follow the cultural protocol for interacting with Elders that others had taught me. I did not interrupt the Elders when they were speaking. I did not

ask questions. I tried to be patient and wait for answers to come. I listened and I observed.

My relationship with Elders emerged on two levels. On one hand, I was documenting ethnographic interviews for the community on the importance of a specific area in their homeland. Consulting with Elders for these purposes is well documented (Oakes and Riewe 1997, Martin-Hill 1995, Cruikshank 1990, Medicine 1987). On the other hand, I was trying to understand the importance of this place within an Anishinaabe context. I was a student and I wanted to learn from the Elders in the ways that they chose to teach me. They saw me as a young Anishinaabe women who was interested in learning more about my own culture and generally how to be a good Anishinaabe woman. I was not looking to the Elders or to the community for my own cultural identity. Nor was my primary purpose reclamation, but I was not willing to remove myself from the process either. At times I was the social scientist, writing down what the Elder said as instructed by the Elder for the purposes of the community. During these times, I asked them questions to ensure that what I was writing down was accurate. We were both fully aware of the restrictions this endeavour placed on our relationship (Couture 1991). At other times, with certain Elders, and my recording devices tucked away, I was simply a young person learning about life. Graveline explains this point further:

> "In cultures in which experience is particularly valued, Elders are expected to pass their knowledge on to younger people by both word and example. This special regard for Elders as teachers, historians and sources of authority underlies ethnographic accounts by "outsiders" (Cruikshank 1990), as well as contemporary discussions by 'insiders' - Aboriginal people concerned with incorporating Traditional values into present day

life (Armstrong 1987; Medicine Eagle 1992; Buffalo 1990)" (Graveline 1998:63-64).

The personal nature of these relationships is paramount and was shaped by traditional Anishinaabe holism and personalism (Couture 1991). I grew not only in my cognative knowledge about their homeland and the community, but also in spiritual, emotional and mental ways. As in all relationships, my interactions with Elders were inevitably shaped by who I am. Graveline (1998) summarizes my experiences with the Elders:

"Elders Teach:
Immanence...Respect for all life forms.
Balance...Our Traditional "scientific" truth.
Interconnectedness...Our spiritual truth.
Self-In-Relation...Our identity statement.
We learn by Doing...Ceremony...Stories of our Ancestors.
Elders say we Know, that is, we learn
Through direct experience...Observation
Face-to-face with the event...person...life force
We experience this Essence.
We learn what we Need to Know
What we Each need to know
What we are Open to...depending on Our life path" (Graveline 1998:50).

Community Experts

Elders often direct learners to other community resource people. These people often include Elders from other communities, younger traditional community members, community leaders, fishers, hunters, trappers, youth, and spiritual leaders. During the initial stages of the community research project, a band councilor in the community in which I was working, who is also an Elder asked me, "Will you go to the fishermen [fishers], the hunters, the medicine people? Will you go to the ones who know? Will

you ask the women?", suggesting that I needed to consult a variety of experts to generate a clear picture of the research problem.

I was directed to a number of community experts by the Elders and the members of the environmental issues group. Community experts that emerged during this research included hunters, trappers, fishers, youth and children who were experts in a specific area of knowledge. I usually visited with these people over a short period of time, but they greatly contributed to my understanding of the diversity of perspectives embodied in the community.

Learning-By-Doing

In pre-colonial times, the process of learning for Aboriginal young people was very different from educational systems found in western societies. In Aboriginal societies, there were no formal schools. Rather, learning was considered a life-long process embodied in the individual and embedded in the principles of immanence and ceremony; mental, spiritual, physical and emotional participation; Self-In-Relation (Graveline 1998); reflection; and sharing. The process of learning was centred in the individual, was concerned with the mental, spiritual, physical and emotional being and was rooted in personal experience.

> "In the Traditional worldview, high value is placed on communal or family responsibility, particularly the obligation to educate children in a holistic way. The Traditional way encompassed all aspects of the person's life., In-Relation to the world around her or him...Traditionally, no special educational institutions existed. Everyday lived experience and

> the sacred, as manifested within the social group as a whole, was the "school" of our Ancestors" (Graveline 1998:60-61).

The Final Report of the Royal Commission on Aboriginal Peoples describes Aboriginal educational traditions in the following way:

> "In [the] Aboriginal educational tradition, the individual is viewed as a whole person with intellectual, spiritual, emotional and physical dimensions. Each of these aspects must be addressed in the learning process. Holistic education is the term used to describe the kind of education traditionally used by Aboriginal peoples. Such education is organized to develop all aspects of the individual" (Final Report of the Royal Commission Aboriginal Peoples 1996(5):30).

Experience is a fundamental principle of Anishinaabe learning processes (*cf.* Cajete In Press). This makes sense, knowledge from an Anishinaabe perspective originates in the spiritual realm and control over the dissemination of that knowledge is largely in the hands of other-than-human beings. Unlike western pedagogies, children, spiritual entities, plants and animals are also teachers. Raven *et al.* (1998) from Hollow Water First Nation, writing about Traditional Ways of Healing From Addictions describes the role plants and animals play in teaching:

> "Plants are teaching tools. They tell us when and where they grow, where and how they multiply and they anchor soil, provide food for other animals and often grow in harmony, preferring the company of some plants while remaining distant or even inhibiting the growth of others. Some elders describe 'the culture of plants,' their habits and distinct locations, their patterns and changes according to the seasons and climate and nutrients. They have gifts and lessons of caring and sharing. We could not survive without them. The plants that animals eat are a clue for food and medicines, that show we learned of them in the first place - by

> watching what the animals used to heal themselves. Animals are teachers for us too. Plants and animals teach us respect, caring and sharing for our environment. Grass represents compassion because although we trample it down or walk on it or cut it, it continues to grow and flourish and provide a refuge. Our spirits are that way too. And so we are indeed connected to all living things. By watching how they produce and reproduce, by respecting what is around us and the life within it, we learn lessons for ourselves" (Raven *et al.* 1998:11-12).

Human teachers which may include relatives, children, Elders or spiritual leaders, function in western terms less as absolute disseminators of knowledge and more as facilitators in the learning process.

> "Their [the Elders] counseling and teaching focus on learning from one's experience. Thus, through respectful and patient observation, evidence of remarkable, incisive intellect, of tested wisdom, of sharp and comprehensive ability, allied with excellent memory recall, and of well-developed discursive ability, is eventually perceived" (Couture 1996:47).

To a large part, this type of learning is still practised amongst those people who practice a traditional way of life in Aboriginal communities. Although children are required by the state to attend schools, learning-by doing is used to teach young people Anishinaabe life-ways. Learning by doing remains an important process in the transmission of Anishinaabe Knowledge from one generation to another, and from one person to another (Simpson in Press, Graveline 1998, Couture 1991).

Within in this study, learning by doing was a central method chosen by the Elders and community experts to teach me. For me, it meant participating, experiencing and reflecting in a number of activities in spiritual, emotional, physical and mental dimensions. I went on hunting trips, out to fish nets and to check traps. I traveled old

canoe routes. I visited sacred sites and participated in sweat lodges and shaking tent ceremonies. I camped on the land a number of times with community members, and observed healing and sentencing circles. I participated in a number of smudging ceremonies and sharing circles. I was also asked to share my dreams and visions. Anishinaabe People teach by doing (Couture 1991); if researchers don't "do" they cannot learn from the people.

Story Telling

Story telling remains an effective means of teaching and learning in Indigenous communities (Cajete In Press, Buffalo 1990). Julie Cruikshank outlines the importance of acknowledging cultural processes as a basis for understanding Aboriginal world views and states the importance of paying close attention to the *way* Elders teach us. One of the many ways practitioners of the Oral Tradition transfer knowledge is through traditional story telling.

> "By looking at the ways people use the traditional dimension of culture as a resource to talk about the past, we may be able to see life history as contributing to explanations of cultural process rather than as simply illustrating or supplementing ethnographic descriptions" (Cruikshank 1990:2).

The recording and interpretation of traditional stories by Anishinaabe People is increasingly employed to help Anishinaabe children and outsiders understand and appreciate the Anishinaabe principles and values (Eigenbrod and O'Meara 1997, Kinew

1997, Smith 1995, Wolfe *et al.* 1992, Kegg and Nichols 1991, Buffalo 1990, Benton-Banai 1988, Hallowell 1955). Sylvia O'Meara, an Anishinaabe from Cape Crocker, Ontario, explains:

> "Stories remain a key component of passing on knowledge and expressing an Anishinaabe world view; community history, treaty rights, land surrender, gender roles, the old ways, they were all taught to me by my Leaders through traditional stories" (Eigenbrod and O'Meara 1997).

Traditional stories provide us with a lens to see the past and with a context to interpret that experience. It is therefore vital to be aware of the cultural "rules" regulating the Oral Tradition and which must become practiced in interpreting the information the stories generate. Cruikshank explains:

> "I always brought questions to our sessions...about childhood experiences, about seclusion, about marriage and childbirth...the women would give brief answers to my direct inquiries and then suggest that I write down a particular story they wanted to tell me. Usually such stories involved a bewildering series of characters and events, but with practice I learned to follow the complex plots and to understand that when women told me stories they were actually using them to explain some aspect of their lives to me" (Cruikshank 1990:15).

The Anishinaabe People distinguish between two different types of stories, the *tabatacamowin* which include anecdotes or stories, narratives that include exceptional experiences and the *atiso'kanak* - the sacred stories - "our Grandfathers" (Smith 1995, Hallowell 1960). Over the course of my work with the community I heard both types of stories.

Dreaming

Dreaming and visioning are often the way knowledge is transmitted from the spiritual world to humans. Anthropologists who write about the Anishinaabe say that the Anishinaabe People believe the physical and dreamed world are one (Driben *et al.* 1997, Smith 1995, Hallowell 1955), or are equally "real". Dreaming is taken very seriously and is a primary way of obtaining knowledge from other-than-human entities.

> "In other words, the Anishinaabe experience of the world, whether awake or in dream, is an experience of a world controlled by the actions of persons, human and otherwise. The levels and directions are not "animated" or "anthromorphized" by humans who, in a purely cognitive exercise, posit souls and spirits and ascribe them to things in the world. Rather, the cosmos is experienced as a place literally crowded with 'people'" (Smith 1995:49).

Garry Raven, an Anishinaabe sweat lodge leader from Hollow Water First Nation explains:

"Dreams
Remember your dreams
They tell you what you need to do
Ask elders what your dreams mean
You will learn more about
Choices
Meaning in Your Life
The Contributions you should make"
(Raven and Prince 1996:53).

During my work in the community, dreams were repeatedly shared, interpreted and used to make decisions about my work. Tobasonakwut Kinew, also an Anishinaabe Elder confirms Raven's teaching:

> "It's called 'ando pawachige n', which means 'seek your dream, live your dream, understand your dream, and move forward with your dream'. That determines how I've lived all my life, and how my parents lived. It points to the fact that when I go into the forest, often I realize I have been here before, although I know full well that I have never before set foot in this particular piece of land. This particular piece of forest reminds me of a different time. When I go to sleep at night, I may have a situation that I cannot comprehend. I make offerings, and invariably the choices I have to make to resolve the problem become clear. That is how I have lived my life" (Kinew 1998:34).

Ceremonies

> "Because of the basic assumption of the wholeness or unity of the universe, our natural and necessary relationship to all life is evident; all phenomena we witness within or "outside" ourselves are, like us, intelligent manifestations of the intelligent universe from which they arise, as do all things of the earth and the cosmos beyond" (Gunn-Allen 1992:61).

Since Indigenous Knowledge is spiritual in nature, many Indigenous Peoples rely on the ceremonies passed down to them from their Ancestors as sources of knowledge, guidance and support. Different ceremonies are used in different communities and in different cultures by those who consider themselves Traditional people. Ceremonies when performed properly by trained spiritual leaders, can be a medium from which beings from the spiritual realm may communicate with humans. Some Aboriginal researchers who seek to understand Indigenous Knowledge use ceremonies as a source of

knowledge (Martin-Hill 1995). However, the sacredness of these ceremonies prevents Aboriginal researchers from writing about these experiences in too much detail. Academe remains especially suspicious of knowledge gained through dreams and ceremonies (Wolfe *et al.* 1992).

I participated in a number of different ceremonies over the course of the research. Different ceremonies were used to heal, to cleanse, to seek knowledge, to give insight into the future, and to make decisions about this research.

Self-Knowledge

> "The goal of all such basic education was founded on self-knowledge, on "seeking life" through understanding the creative process of living, on sensitivity to and awareness of the natural world, on knowledge of one's role and responsibility in the social order, and on receptivity to the spiritual essence of the world" (Cajete In Press:101).

As the above quote indicates, the goal of Indigenous teaching methods was ultimately to learn more about one's self, and one's role in the cosmos. The process was learner centred, highly contextualize and highly personal. Graveline (1998) also recognizes this aspect, using the term Self-In-Relation and acknowledges that this is a shared belief amongst many Aboriginal Peoples.

> "The knowledge that each person is responsible for his or her actions In-Relation to the larger community is a fundamental shared belief. ... We are able to see ourselves and our immanent value as related to and interconnected with others - family, community, the world, those behind and those yet to come" (Graveline 1998:58).

Relating ourselves and our knowledge to the world around us forms the basis of our responsibility. In this work, I have chosen to focus on what I personally learned about TEK and Indigenous Knowledge learned through an Anishinaabe learning experience. This seems the appropriate outcome of using such a methodology given that:

> "In the end the child is alone - that is, the child will have to make his or her own decisions, decisions that will effect the community and the natural world. Therefore personal awareness is at the heart of responsibility: to be aware of what is going on around you and what life holds in store for you - all of life's possibilities throughout your life to old age" (Beck *et al.* 1990:62).

CHAPTER FOUR: ISSUES, INSIGHTS, AND IMPLICATIONS

The purpose of this Chapter is to use my own personal experiences and perspectives, in addition to the body of literature regarding TEK, to demonstrate how Traditional Ecological Knowledge is constructed by Euro-Canadian researchers. In order to accomplish this, I will investigate the implications of textualizing Indigenous Knowledge; examine how sharing documented Aboriginal Knowledge increases the chances of marginalization and appropriation; and show how this leads to continued disillusion in Aboriginal communities.

In the section, *Personal Responsibility and Awareness*, I investigate the role Anishinaabe teachings about individual awareness and personal responsibility played in this research. In the section *Manufacturing Traditional Ecological Knowledge*, I discuss how western society constructs TEK as a concept for its own use, while marginalizing the spiritual basis of Indigenous Knowledge. In the section entitled, *The Textualization of Indigenous Knowledge*, I explore the process of textualizing and translating oral knowledge. *Sharing Knowledge in a Hostile Environment* speaks to the risks TEK holders face in sharing literate forms of their knowledge with the dominant society. The *Marginalization, Appropriation and Continued Disillusion* section discusses how this documented knowledge is used by the dominant society and the impacts of mis-use on Aboriginal communities in Canada. As previously mentioned, the italicized text forms a commentary or narrative that conveys my own personal insights. This "narrative within a narrative" is interwoven with the formal text of this chapter.

Personal Responsibility and Awareness

Many Aboriginal People acknowledge that with the acquisition of knowledge comes responsibility (Fitznor 1998, Kinew 1998, Beck *et al.* 1990). This section focuses on these teachings and the impact they had on this research.

When I initially met the community members that would become my mentors, I asked them to teach me about the land and the environment using their own Anishinaabe ways. They agreed, and they immediately planned to take me out into the bush. We continued spending time on the land throughout my work, because being out on the land, doing ceremonies, dreaming and speaking with Elders were the methods they used to teach me. These methods were ***their*** *methods. So my learning was as a whole person - spiritually, physically, mentally and emotionally, and this was accomplished not by "telling me", but by showing me and leading me to experiences.*

In return for the gifts of knowledge they shared with me, I shared my academic skills with them, researching and writing as requested by the community. Part of this work involved interviewing a number of Elders in open-ended interviews and transcribing the interviews for the community. This experience as well as my professional work, placed me in the environmental field as First Nations interact with it, and in the emerging field of TEK. These two diverse groups of experiences provided me with insights into the field of TEK, and it is these insights that are the focal point of this Chapter.

The methodology, as discussed in Chapter Three had a profound impact on this study. The methods I used were Indigenous methods of inquiry. These methods are Indigenous Knowledge, and it was not until I realized that Indigenous Knowledge is a creative process, that I came to understand this. Because of the nature of Anishinaabe Knowledge, Anishinaabe ways of knowing generate "results" of a different kind. They do not necessarily generate columns of numbers suitable for statistical analysis, nor do they necessarily generate documents containing literate versions of community knowledge. For the Anishinaabe, knowledge is a gift, and with it comes a responsibility to use that knowledge in an appropriate manner. My "results" are then personal and my contribution to change comes from within.

Working from an Indigenous paradigm I was no longer just looking out, I was also looking in. Instead of focusing my attention on the "Others", or on writing down the gifts of knowledge people had shared with me, I found myself focusing on my inner environment. From an Anishinaabe perspective, what is inside of you is as an important part of "environment" as what surrounds you. My experiences in the community became a catalyst to examine the assumptions, biases, privileges, and intellectual ideas in the field of TEK. Instead of studying Anishinaabe People or even TEK, I found myself studying how the dominant society constructs and uses TEK, and the role I play as a researcher in communities. It seemed to me worthwhile to share these insights with the academic world. These insights represent my understanding, as an Aboriginal researcher and they are not necessarily ideas other Aboriginal Peoples share. They represent a snap shot of my own perspective, one truth amongst many. My purpose therefore is not to criticize projects

Aboriginal communities and their allies have undertaken, because I believe that each community has within it the experts on their own lives and situations. My purpose is simply to share my story.

Tobasonakwut Kinew, an Anishinaabe Elder shares his thoughts and teachings on the complexity of this reflexivity:

> "Since I was born I've thought I must understand the sacred landscape within me so that I can function in whatever society I live in......what this land is all about includes far more than the land that we see. There is also a teaching that the four layers of the sky, the four layers of creation refers to the four major stages of the thinking process. The Creator came through 'pagonegiizhik', the hole in the sky, and arrived on earth with such a tremendous impact, going down four layers. The bear carried the 'miigis' (shell) four years till he brought it to the surface. That refers to the four major things that happen to us in our subconsciousness. So in dream interpretation, the interpretation of the stories, of teaching that are given to use, then we must take into consideration eight levels of consciousness. At certain points, your dream fits into a certain category, If it's strictly a thinking process, if its an intuitive process, then you have to figure out where it fits. I am essentially talking about the sacred landscape within us" (Kinew 1998:34-35).

Euro-Canadian society seems to be obsessed with information, constantly in pursuit of new knowledge, assuming that we can and need to know everything about the universe. It seems funny to me now, we supposedly know so much about the universe while knowing so little about ourselves. The true 'paradigm shift' in this research was from externalism to internalism.

Laara Fitznor, a Cree scholar gives an example of this concept in Aboriginal thought:

> "For example Bruce Elijah, an Oneida, and an elder and a spiritual teacher with whom I have had the honour of working in a teaching team, says that the notion of taking personal responsibility for one's "inner environment" is an essential requirement of working within the greater whole. This concept connects with being responsible in a reciprocal way. He says that each individual must first learn to live life from within a healthy environment in mind, body, spirit before s/he can understand fully the responsibility of the whole where conscious learning, relearning and healing, both for the person and for the community, takes place in mind, body and spirit. For Bruce Elijah, individual responsibility means living the teachings, even as we grow in understanding them, and even as they are reflected back to us. This is one of the keys to living fully in an Aboriginal world: me-you, we give and we take what we can with what we know and we work with it in an interconnected way for the healing of our outer environment" (Fitznor 1998:29).

The sacred landscape within is as much a part of the "environment" as the sacred landscape outside of us. With a change in focus from just the outside, to one that included a balance of both the external and the internal, came the importance of personal awareness and responsibility.

> "*The People* [Indigenous Peoples] often make distinctions between learning or becoming knowledgeable, and knowing too much or being exposed to knowledge when one is not yet ready. Knowledge about one's sacred ways, about morals and ethics, and about the boundaries of one's world, are taught to the child by those who know when to teach the child...*personal* awareness is at the heart of responsibility: to be aware of what is going on around

> us and what life holds in store for us - all of life possibilities throughout life to Old Age" (Beck *et al.* 1990:62).

This importance of personal awareness and responsibility was related to me by one of the Elders with whom I closely worked. A group of people from diverse backgrounds had gone out onto an island for a series of meetings and ceremonies held over three days. The purpose of the meetings were to plan some actions on several immediate environmental issues in the area. We completed the meetings, sweatlodges and the jisakaan[21] *ceremony to access knowledge from the spirit world. At the end of the three days we gathered for a sharing circle. As we went around the circle, the Elder asked us to each share what we were going to do with the things we had learned over the three days. It was the responsibility of each individual to figure out how s/he could personally contribute to the overall goals of the group given what s/he had personally learned over the weekend. Our focus was on ourselves, and our contributions. This was a sharp contrast to other meetings I had attended. Usually, at the end of a meeting, there was a long list of things the group had to accomplish and these tasks were split up amongst the members. At the base of the Anishinaabe approach was the acknowledgment that all the participants were individuals, with diverse backgrounds who had experienced the weekend in personal and different ways. We were the experts on our own lives and could best decide how to contribute to the group. Ultimately we had the responsibility to use our experiences in the*

---

[21] Shaking Tent

way we best saw fit. Ultimately I have the responsibility of using the teachings I have received in my life work.

Personal awareness, critique and challenge helps individuals realize their personal responsibility. As a researcher, I have a responsibility to ensure those that have shared their knowledge with me do not get hurt by my work (*cf.* Martin-Hill 1995). I also have a responsibility to challenge my colleagues and fellow researchers to do the same.

As we near the end of the twentieth century, Aboriginal Peoples are still without real power within Canada. Communities still have little control over the lives of their members, self-determination and self-government largely remain models and theories, and most Aboriginal People occupy the lowest rung of Canadian society. Aboriginal Peoples are still colonized, oppressed peoples. Governments continue to undermine the rights, knowledge and laws of Aboriginal Peoples. It is within this context that we must examine how TEK and Indigenous Knowledge is constructed and used by the dominant society, and the role of researchers in Aboriginal communities.

The Manufacturing of Traditional Ecological Knowledge

The first stage in any intellectual manufacturing process is definition. This section focuses on how TEK is defined by Euro-Canadian researchers and by Aboriginal People, and the implications of these two perspectives.

The more ceremonies I participate in, the more time I spend in the bush with Elders and the more language I learn, the harder it is for me to relate to the concept "TEK". No one in the community ever used the term, and no one ever directed me to the previous projects researchers had done documenting the knowledge. Anishinaabe Knowledge continued to by used by community members, while the TEK research was a tool they used for very specific purposes.

The term "traditional ecological or environmental knowledge" and to some extent the concept of TEK has been invented by non-Aboriginal academics and researchers (Graveline 1998, Assembly of First Nations (AFN) and National Aboriginal Forestry Association (NAFA) 1995, Luckey 1995). It is often described by non-Aboriginals in a way that mis-represents Aboriginal knowledge, that commodifies Aboriginal Knowledge for consumption by the mainstream society and that appropriates the power and responsibility that goes hand in hand with possessing knowledge. TEK is not an accurate description of the knowledge that Aboriginal People have about the "environment" (AFN and NAFA 1995), rather it is an accurate indication of what the dominant society sees as valuable, reliable and useful, and this is reflected in mainstream definitions of TEK.

Although no singular definition of TEK has emerged in the literature, a sample of popular non-Native definitions define TEK as:

> "a body of knowledge built up by a group of people through generations of living in close contact with nature. It includes a systems of classification, a set of empirical observation about the local environment,

The term "traditional ecological or environmental knowledge" and to some extent the concept of TEK has been invented by non-Aboriginal academics and researchers (Graveline 1998, Assembly of First Nations (AFN) and National Aboriginal Forestry Association (NAFA) 1995, Luckey 1995). It is often described by non-Aboriginals in a way that mis-represents Aboriginal knowledge, that commodifies Aboriginal Knowledge for consumption by the mainstream society and that appropriates the power and responsibility that goes hand in hand with possessing knowledge. TEK is not an accurate description of the knowledge that Aboriginal People have about the "environment" (AFN and NAFA 1995), rather it is an accurate indication of what the dominant society sees as valuable, reliable and useful, and this is reflected in mainstream definitions of TEK.

Although no singular definition of TEK has emerged in the literature, a sample of popular non-Native definitions define TEK as:

> "a body of knowledge built up by a group of people through generations of living in close contact with nature. It includes a systems of classification, a set of empirical observation about the local environment, and a system of self-management that governs resource use" (Johnson 1992);

> "a body of knowledge that represents a collective understanding attained over a long period of time, in particular places, of the relationship between a community and the Earth. TEK may encompass spiritual, cultural and social aspects as well as substantive and procedural ecological knowledge. TEK may also include customary rules and laws, rooted in the values and norms of the community to which it belongs" (Doubleday 1993);

> and,

> "is a cumulative body of knowledge and beliefs, handed down through generations by cultural transmission, about the relationship of living beings (including humans) with one another and with their environment. Further, TEK is an attribute of societies with historical continuity in resources use practices; by and large, these non-industrial or less technologically advanced societies, many of them indigenous or tribal" (Berkes 1993:3[22]).

Most non-Native definitions seem to have components relating TEK to a cumulative body of knowledge attained over a long period of time by a group of people (Berkes 1993, Doubleday 1993, Lewis 1993, Johnson 1992). At least one definition adds that TEK parallels the scientific discipline of ecology (Inglis 1993), and a few mention that TEK has a spiritual component (Grenier 1998, Doubleday 1993). It is particularly interesting to note how similar these definitions are to what outsiders consider to be valuable in terms of Indigenous Knowledge. Posey and Dutfield in their book, *Beyond Intellectual Property Rights: Toward Traditional Resource Rights for Indigenous Peoples and Local Communities*, list the following as the kinds of knowledge outsiders come looking for in Indigenous communities precisely because it is this type of knowledge that is economically valuable[23]:

> "-knowledge of current use, previous use, or potential use of plant and animal species, as well as soils and minerals;
> -knowledge of preparation, processing, or storage of useful species;

---

[22] Berkes (1993) writes that his definition is based on a review of the current literature. See Berkes (1993) and references therein.

[23] Posey and Dutfield (1996) also note that "Traditional Knowledge produces more than commercial benefits for others. Academics and scientists rarely become rich by recording traditional knowledge, yet their academic careers may be enhanced considerably by doing such research in terms of improvements in both their status and their salaries" (1996:34).

-knowledge of formulations involving more than one ingredient;
-knowledge of individual species;
-knowledge of ecosystem conservation
-classification systems of knowledge, such as traditional plant taxonomies" (Posey and Dutfield 1996:12).

Aboriginal People lived for thousands of years without the need to define their knowledge. It is only when Aboriginal Peoples are challenged by the dominant culture that the need to define emerges. The very simple act of defining is part of the western intellectual tradition. As soon as a new concept is developed, it is defined, in part, to imply ownership or to acknowledge the source of the concept. After some debate, a version of the original definition becomes truth or a fact. In contrast, many Aboriginal cultures have a plurality of truth, rather than a singular objective truth (see Sinclair 1994:27). Plurality allows for a number of different perspectives to be respected, and a strong ethic for the respect of difference emerges. Oral traditions support plurality to a greater extent than do literate ones. Since the concepts of knowledge and truth differ in Aboriginal societies, literate definition becomes the first step in controlling what the term Traditional Environmental or Ecological Knowledge represents. We have to look at definition as a very powerful part of any construction process.

Many non-Aboriginal authors write about the inappropriateness of the term TEK, usually focusing on debates regarding the meaning of the word traditional and the

term ecological (see Berkes 1993). Most Aboriginal authors use definitions[24] which are broad in scope in comparison, and they include responsibly, values, world view, Natural Law and spirituality. Often authors (particularly Elders) do not adhere to the western structure of a definition (Cooper 1997; Forbes 1997; Lyons 1997; Thorpe 1997; Goodstriker 1996; Armstrong 1995; LaDuke 1997, 1994a, 1994b; Clarkson *et al.* 1992). The Assembly of First Nations (AFN) and the National Aboriginal Forestry Association (NAFA), state that:

> "Indigenous experts working in this area [Indigenous Knowledge] have made it clear that they do not find any current external expressions or definitions of Indigenous Knowledge to be appropriate. These are seen to be either self-serving, or to exclude certain essential elements - particularly those spiritual aspects which western scientists sometimes find difficult to digest" (AFN and NAFA 1995:1).

They continue to use the term "Indigenous Knowledge" for the sake of discussion, but outline four interlinked elements within Indigenous Knowledge systems:

> "1. The creation myths and cosmologies which explain the origins of the earth and its people.
> 2. Those codes of ritual and behaviour that govern peoples' relationships with the earth.
> 3. The practices and seasonal patterns of resources utilization and management, that have evolved as expression of these relationships.
> 4. The body of factual knowledge that has accumulated in connection with these practices" (AFN and NAFA 1995:2).

---

[24]Given the current popularity of TEK, some Elders, translating words and concepts in their head, have become very good at giving researchers the kind of information they need. As more and more Elders and Aboriginal Peoples learn what the dominant society means by TEK, more and more will be able to tailor their definitions to that concept. Some Elders may define Indigenous Knowledge in western terms, because their experiences with outsiders has shown them that is what researchers want.

The AFN and NAFA also note that outsiders tend to focus on the last two components of Indigenous Knowledge, rather than world view and ethical concerns.

The Clayoquot Sound Scientific Panel (1995) also differentiates between Indigenous and non-Indigenous perspectives on TEK in its exploration of First Nations' Perspectives Relating to Forest Practices Standards in Clayoquot Sound. In their definition of TEK the Panel incorporates both Indigenous and non-Indigenous perspectives in a list of thirteen different characteristics of TEK. They summarize the Indigenous perspective as, "the Creator made all things one, all things are related and interconnected, all things are sacred and must be respected, balance and harmony are essential to all life forms" (Clayoquot Sound Scientific Panel 1995:15). This is summarized by the Nuu-Chah-Nulth phrase *hishuk ish ts'awalk*, "everything is one".

The exploration of Indigenous perspectives of TEK cannot be summarized in a few pages[25]. What we can learn from organizations like the Assembly of First Nations, the National Aboriginal Forestry Association (1995) and the Clayoquot Sound Scientific Panel (1995) is that non-Native definitions of TEK are rooted in western conceptualization and assumptions. Two of the inadequacies of the mainstream TEK

---

[25] To fully understand the depth and complexity of Indigenous environmental perspectives consult the following writings by Aboriginal experts: Ahenakew and Wolfart 1998; Crozier-Hogle and Wilson 1997; Armstrong 1995; Churchill 1995; Coon Come 1995; Hogan 1995; Kawagley 1995; Kegg and Nichols 1995; LaDuke 1995, 1994a, 1994b; Snake 1993; Gunn-Allen 1992; Armstrong 1992; Barnaby 1992; Brascoupe 1992; Clarkson *et al.* 1992; Jacobs 1992; Potts 1992; Beck *et al.* 1992; Benton-Banai 1988 and Knudston and Suzuki (although these Aboriginal perspectives have been written by Knudston and Suzuki in their own words) 1992.

definitions are worth discussing further; the spiritual base of Indigenous Knowledge and Aboriginal perspectives on the term "environment".

Marginalizing Spiritually-Derived Knowledge

Ceremonies, dreams and the spirit-world were at the core of my experience, because they were at the core of the people who were leading and teaching me. The Ancestors, the Clans, the Spirits guided my teachers and myself through daily life, yet to a non-Native person, this might be difficult to detect. Centuries of oppression keep these things far from surface reality but it is so strongly integrated into life that there are no separations, there is never a time when it isn't there, when the spirits do not have influence.

My experiences have shown me that Indigenous Knowledge is spiritually based and often spiritually derived. Since the focus of this work is not to provide a detailed account of the ceremonies, I have chosen instead to focus on the vast amount of published material that supports these ideas. I have done this deliberately, to show how definitions of TEK de-emphasize the spiritual basis of Indigenous Knowledge, despite vast amounts of written literature to the contrary.

Non-Native definitions of TEK tend to marginalize the spiritual basis of Indigenous Knowledge, either leaving this aspect out of the definition all together (Berkes 1993, Johnson 1992) or by failing to recognize that it is fully integrated into the

knowledge system (Doubleday 1993). There exists an immense amount of literature reinforcing the idea that Aboriginal world views and knowledge systems are spiritually based and that much of Indigenous Knowledge is spiritually derived.

> "A fundamental feature of the Aboriginal world view was, and continues to be, that all of life is a manifestation of spiritual reality: We come from spirit; we live and move surrounded by spirit; and when we leave this life we return to a spirit world. All perceptions are conditioned by spiritual forces, and all actions have repercussions in a spiritual reality. Actions initiated in a spiritual realm affect physical reality; conversely, human actions set off consequences in a spiritual realm. These consequences in turn become manifest in the physical realm. All these interactions must be taken into account as surely as considerations of what to eat or how to keep warm in the winter" (Final Report of the Royal Commission on Aboriginal Peoples 1996(1):628).

Aboriginal Peoples learn about their environment through experiences, detailed observations over long periods of time which are passed down through generations, experimentation and active investigation. A great deal of Aboriginal Knowledge however, is derived from the Spirit-world (Ahenakew and Wolfart 1998, Crozier-Hogle and Wilson 1997, Blondin 1997, Ghostkeeper 1996, St. Pierre and Long Soldier 1995, Kegg and Nichols 1992, Robinson and Wickwire 1992, Beck *et al.* 1990, Benton-Banai 1988, Hungry Wolf 1980). Spiritually-derived knowledge may come to humans in the form of dreams, visions, or ceremonies. People may also be born with certain knowledge, or acquire certain knowledge through naming, or their Clan or House affiliations.

Florence Jones, an Elder and "healer in the medicine way" of the Wintu Nation shows that her power as a doctor comes from the Great Creator. She is able to access

this knowledge through rituals, ceremonies and her thirty-eight years of training to become a doctor (Jones 1997).

> "When the medical doctors tell me someone is gone, I go into a trance. I ask my spiritual mountain, Doctor Mount Shasta, to ask the Great Creator. I say, "I don't know the medicines. You are the Creator. You made everything on earth. We are asking you". And so they tell me to use this herb, that herb, and what to use for the poultice.
>
> You see, I don't just pick it myself. I get it from the Great Creator. That way I'm not picking just any kind of herbs" (Jones 1997:23).

Knowledge from the spirit-world is also vital to successful hunts. Elmer Ghostkeeper, a Metis from northern Alberta explains the importance of the knowledge from the spirit-world in successfully hunting a moose;

> "Moose are intelligent animals, and a person has to be gifted with the necessary talents in order to be a successful moose harvester. My father considered moose to be similar to other plants and animals, a gift, and harvesting them was conducted within the Metis context of ceremony, ritual and sacrifice. He required a dream in which his dream spirit would inform him of having made contact with a moose spirit and when and where to harvest the moose. The information contained the age and sex of the moose, topography of the land, weather conditions, and the equipment required for the harvest" (Ghostkeeper 1996:19).

Beverly Hungry Wolf (1980), a Blood, speaks about the Myths and Legends of her Grandmothers and explains the origins of the rituals and ceremonies that come from the Spirit-world.

> "That night she had a dream. The stone came to her and sang its song again. Then it told her: 'I have come to you and your people because I pity you. My power is able to communicate with the buffalo and bring them here. I have chosen you to bring me to camp because you are humble and I know your thoughts are good. You must ask you husband to invite all the holy men to your lodge tomorrow night. I will teach you some songs and a ceremony which you must show them. If you do this then I will have my power bring back the buffalo. But you must warn your people: my power is always announced by a strong storm, and when it arrives it will look like a buffalo, a lone bull. You must tell your people not to harm him. The rest of the herd will follow as soon as he has passed safely through your camp'
>
> During that dream the woman was taught several songs she had never heard before.... "(Hungry Wolf 1980:164).

Spiritually derived knowledge is also important in healing:

> "The calling to doctor, and the ceremonies associated with healing, form a distinct and exceptional vocation. There are three types of ceremonies that involve doctoring. These are the 'Lowanp'i ceremony, or "Sing"; the 'Yuwipi' or "they tie them up" ceremony; and a less formal, more idiomatic or generalized 'Wapiye' ceremony used by many of the holy women who also are herbalists and may choose this as expedient depending on the nature of the illness and the complexity of putting on either a 'Lowanpi 'or a 'Yuwipi'. A woman who uses the Lowanpi ceremony would not likely use the Yuwipi ceremony, or vice versa, for certain spirit helpers dictate the type of ceremony to be held. Some women may have a variety of spirit helpers, and the patient's problem or illness may prescribe the details of the ceremony and the specific spirits to be called upon" (St. Pierre and Long Soldier 1995:28).

Even when rituals are practiced to heal, Lakota women doctors still rely upon the spirit-world to give herbs their power. St. Pierre and Long Soldier continue:

> "A fourth method of doctoring involves no ritual at all, and the women who practice it are thought of as 'Pejuta' Win', or herb women doctors, and heal the sick principally by means of traditional pharmaceuticals. The plants used as remedies may need special songs learned in dreams to unleash their healing power; without songs they are just plants" (St. Pierre and Long Soldier 1995:28).

The book *Nature Power: In the Spirit of an Okanagan Storyteller*, Harry Robinson, Okanagan Elder and Story-teller recounts several stories describing the relationship between human-beings and the spiritual world. He tells stories about children's initial encounters with their "power-helpers", the interaction between humans and their power-helpers during times of crisis and healing through spirit or power helpers. Woven in each of the stories are several examples of how knowledge or "power" is obtained through the spirit world. Harry explains how children receive their power:

> "You got to have power. You got to, the kids, you know. They got to meet the animal, you know, when they was little. Can be anytime till its five years old to ten years old. He's suppose to meet animals or birds, or anything you know. And this animal, whoever they meet, got to talk to'em and tell'em what they should do. Later on, not right away. And that is his power" (Robinson and Wickwire 1992:10).

George Blondin (1997), a Dene Elder from the Northwest Territories, in the beginning of his book *Yamoria, The Lawmaker: Stories of the Dene,* recounts the time when he was a child when he was about to receive his medicine power from the spirit-world. His parents had hoped that he was born with medicine, and each of his grandfathers tried to transfer medicine power to him. George's mother asked him to go down to the lake to get water in the early morning:

> "How calm everything was! The lake was mirror like, not a wave or ripple at all. No wind. It looked beautiful but I was so fearful I didn't want to stand and admire it. I dipped my pail in the water and turned to run back to the tent.
>
> For some reason, I stopped to look out across the lake again. I saw something! It was a giant of an old man with flowing white hair walking toward me on the water of the lake.
>
> Now I was really terrified. I dropped the pail and ran back to the tent screaming. 'Mama! Mama!' I jumped into her lap and when she asked me what had happened, I told her. She warned me not to tell anyone else what I had seen.
>
> 'You were about to receive medicine power, and you ran away! It was your grandfather trying to transfer medicine over to you. Now, you have spoiled everything for yourself. You are going to need help from others all the time', she said" (Blondin 1997:x).

Similarly, Eddie Benton-Banai, an Anishinaabe Elder and Spiritual Teacher, re-tells how Anishinaabe children received a vision from the spirit-world to give their life direction and purpose:

> "The old man who had visited the lodge of the Seven Grandfathers, brought back to the people the gift of seeking spiritual advice and direction through the 'Ba-wa'-ji-gay'-win' (Vision Quest). As a child would approach the coming of adult-hood, the parents would provide the opportunity for the child's first Vision Quest. Often a 'Mide'-wi-nini' (Midewiwin priest) or 'Osh-ka-bay'-wis' (helper) of the Midewiwin was asked to serve as a guide for the child. The body was deprived of food and water, the life-giving forces of physical life. With the physical side of the life lessened, it was hoped that the spiritual side would come into dominance. It was also said that fasting purifies the body and the mind and makes a person receptive for messages coming from the Spirit World. If the child was ready and fortunate, a vision would come to serve as a guiding light in life. The vision would give life its purpose and direction" (Benton-Banai 1988:83).

Spiritually derived knowledge is fully integrated into the consciousness of Anishinaabe People and contemporary Aboriginal people who follow traditional ways, and into Anishinaabe Knowledge. It is impossible to separate out spiritual components. The stories of Anishinaabe Story-teller Maude Kegg, in *Portage Lake: Memories of an Ojibwe Childhood* (Kegg and Nichols 1991), Percy Bullchild's *The Sun Came Down: The History of the World as My Blackfeet Elders Told It* (Bullchild 1985), and the Cree stories of Janet Feitz, Glecia Bear, Minnie Fraser, Irene Calliou, and Mary Wells in Ahenakew and Wolfart's *Our Grandmothers' Lives as Told in Their Own Words* (1998) demonstrate this. "Spiritual knowledge" or in the world of many Aboriginal Elders "Power", forms both the foundation of knowledge and knowledge itself. It is both context, content and process.

Given that the idea that knowledge is spiritually derived is so well documented in the literature it is interesting that it is left out of most non-Aboriginal definitions of TEK. Although this is the base of the knowledge system, spiritual-based knowledge has always been extremely difficult for western scientists to accept as a valid and reliable form of knowledge (Deloria 1997, Wolfe *et al.* 1992). It is much easier to argue that TEK is a legitimate (in the eyes of western scientists) when one focuses on the physical data component of TEK, because it is the same *kind* of knowledge that is generated by western scientific systems. Similarly, detailed observation as a method of generating knowledge is generally more acceptable to western scientists than ceremony or dreaming (Wolfe *et al.* 1992).

I wrote a paper discussing Indigenous Knowledge and sent it to a wildlife journal. The comments I received from one reviewer were interesting because I think they represent how a lot of scientists think about Indigenous Knowledge. After explaining to me in a few paragraphs all the experiences and respect s/he had for Native Americans, s/he said that I needed to prove that Indigenous Knowledge is reliable, and to offer some suggestions of how to proceed in cases when it is not. In particular, s/he noted that spiritual or religious knowledge is not reliable. Has a scientist ever had to prove in a paper, that her/his knowledge system, the western scientific system is reliable in a journal? Indigenous Knowledge is constantly being measured by the western yard stick. On one end we have science, 'civilized' society, progress, technology and development. On the other we have "the Indian", folk knowledge, savage, backward. If you want your knowledge to be legitimate in this society, you have to prove it is legitimate on western terms, using the western knowledge system. This is not only epistemologically unsound, it is also racist.

The continued marginalization of spiritually derived knowledge in TEK definitions is reflective of how the dominant society continues to dismiss the world views of Aboriginal Peoples. Wet'suwet'en Chief Gisday Wa (1989), gives us an example from the opening statements of the Delaguumkw case:

> "The nature of the continuum between humans, animals, and the spirit world, within cycles of existence, underpins much of the evidence you will hear. The Gitksan and Wet'suwet'en believe that both humans and

> animals, when they die, have the potential to be reincarnated. But only if the spirit is treated with the appropriate respect. If the bones of animals and fish are not treated with respect, thereby preventing their reincarnation, then they will not return to give themselves up to humans. In this way, a person's actions not only interact with those of animals and the spirits, but also have repercussions for future generations, deprived of the food that will ensure their survival...
>
> It is important to reflect on how such a view of causality would be rendered conceptually from within a Western framework. Such a view would not be regarded as "scientific" and such attribution of events to the powers of animals or spirits would be characterized as "mythical". Both of these adjectives imply that what Indian people believe is not real, or, at least, if it is real for them, it represents primitive mentality, pre-scientific thinking, which is to say "magic". On either basis, Indian reality is denied or devalued. Their history is not real history but mythology. The binding rules which determine how Indian people should relate to animals are not real laws but primitive rites" (Wa 1989:23-24).

The marginalization of spiritually-derived knowledge in mainstream TEK definitions bolsters the belief that this kind of knowledge is less reliable and less valid than knowledge generated in other ways. The notion that western science is better or more reliable than other knowledge systems is ultimately a belief in "white Euro-Canadian superiority" (Wa 1989), a belief that has powerful implications for the assertion of Aboriginal Rights in Canada.

Aboriginal Perspectives on the Environment

In using the word "environment" in the term TEK, Euro-Canadian researchers assume that the concept of the "environment" has universal meaning in both western and Indigenous thought. In the first few paragraphs of this chapter, I alluded to the idea that Aboriginal Peoples and non-Aboriginal people conceptualize "environment" differently.

In general, the Aboriginal concept is much broader in scope referring to physical, mental, emotional and spiritual realities, and the inner environment of individuals. In separating environmental knowledge from other kinds of knowledge as occurs in creating a body of knowledge derived from Indigenous people, the TEK movement violates the fundamental belief system and understanding inherent in Indigenous Knowledge systems. In Indigenous societies, the environment was and is fully integrated into every aspect of society. The environment was integrated into the decision making processes of the past - there was no differentiation between things environmental and things non-environmental, because everything was environmental (see AFN 1993, Clarkson *et al.* 1992). The separation of "environmental" knowledge is reflective of TEK as a western concept. The Assembly of First Nations, in their submission to the Royal Commission on Aboriginal Peoples, state that this principle of Aboriginal philosophy is one that needs to be integrated into Euro-Canadian practice:

> "Environmental policies must be integrated with social and economic policies. It is just beginning to happen. The environment is not an entity in itself, but an intricate part of a greater whole of society and the economy. The interdependence that exists between all three must be taken into account when current out-dated policies are being amended. We cannot separate the need for a healthy environment in the name of economic prosperity. The two are inseparable and fundamentally dependent on one another" (AFN 1993:39).

It is often assumed that Aboriginal Peoples define environment in the same way that non-Natives do, and that Aboriginal societies make the same conceptual divisions as non-Aboriginal societies. In the opening statements of the Gitksan and Wet'suwet'en Hereditary Chiefs, the Hereditary Chiefs make this point:

> "When today, as in the past, the hereditary Chiefs of the Gitksan and Wet'suwet'en Houses gather in the Feast Hall, the events that unfold are at one and the same time political, legal, economic, social, spiritual, ceremonial, and educational" (Wa 1989:31).

Similarly, many environmental issues are viewed by Aboriginal societies as at one and the same time political, economic, educational, social and spiritual. In reality, Indigenous Peoples' definitions of environment are much broader, they included internal and external components, spirituality, moral responsibilities, and they are much more integrated with other aspects of society. Andrew Chapeskie writes:

> "When non-aboriginal Canadians use categories such as 'wilderness' and 'natural resources' to refer to the land and the 'wealth' that it contains, they are not employing categories that transcend cultural boundaries. Rather, as they are used to describe Canadian landscapes, they embody a whole series of inferences concerning human relationships to this 'underdeveloped' land that have historically been the cultural domain of Euro-Canadians. By now this should go without saying" (Chapeskie 1995:12).

Indeed, this should go without saying, but as Chapeskie continues:

> "In fact, however, it has done little to alter the tendency of the relevant state institutions to assume that the Euro-Canadian technical paradigm of resource management possesses a superior intrinsic rationality and predictive capacity".

Just as the terms "wilderness" and "natural resources" are embedded in Euro-centric ideology, so to is the term "environmental". The effect of this cultural bias is that the

Euro-Canadian paradigm that bore the concept of TEK, assumes universal applicability that transcends cultural boundaries (Chapeskie 1995).

Non-Aboriginal definitions of TEK focus on the data component of TEK, while leaving out processes, ethics, values and world view components (Berkes 1993, Doubleday 1993, Johnson 1992). Thus, they assume that Indigenous Knowledge systems are the same as the western scientific knowledge system, in that content or data, rather than context (the first two levels of Indigenous Knowledge as described by the AFN and NAFA 1995) is of primary concern. They tend to marginalize the spiritual basis of Indigenous Knowledge, either leaving this aspect out of the definition altogether (Berkes 1993, Johnson 1992) or failing to recognize that it is fully integrated into the knowledge system (Doubleday 1993). And the act of separating "environmental" knowledge from other kinds of Indigenous Knowledge reflects the western division and definition of things environmental, a division that western scientists think is universal across cultures.

The Textualization of Indigenous Knowledge

Transferring oral knowledge into documentation is a process that can lead to mis-translation across perceived universal concepts, a conversion of knowledge from a

process to a product, and the de-contextualization of Indigenous Knowledge. This section will discuss these issues as they relate to the process of textualization[26].

Three questions kept running through my head the entire time I was working on this project; "Why am I doing this? Who will benefit from this work?", and, " Am I stealing or appropriating anyone's knowledge?". I believe the circulation of these questions reflected my need to be critical of my role as an academic in order to act responsibly regarding the power that formal education gives one in the mainstream society. I needed to be accountable for my privilege. These concerns came from me taking responsibility for what I had learned from the Anishinaabe teachings. I knew that many people had completed M.A.'s and Ph.D.'s because their Aboriginal informants had shared more than their predecessors had - something that had never been shared and therefore published before. I did not want to benefit by publishing someone else's knowledge. I had to ask myself how all this documentation of knowledge was really going to benefit the communities? Why are we assuming that written knowledge is better than oral knowledge? Why are we insisting on textualizing knowledge so that it won't be lost? Doesn't all that reflect academic biases? Would it not be better to focus efforts on strengthening the Oral Tradition and Indigenous Knowledge systems at the local level, rather than just writing down the knowledge?

Textualizing Indigenous Knowledge, that is, converting it from its oral source to a written representation is a process that is not often written about or openly discussed.

---

[26] This process was first referred to as textualization by Stevenson (1998).

The assumption that literate knowledge is more valid, useful, and less vulnerable than oral knowledge is firmly rooted in Euro-centrism, and lies at the base of the obsession to document anything Indigenous. It is an assumption that my experiences in the community and on the land challenged. It is an assumption that needs to be challenged not only in theoretical discussions, but in our actions, because the textualization of Indigenous Knowledge fundamentally transforms knowledge into something it has never been before, with potentially great implications for Indigenous Peoples.

Many Aboriginal Nations, organizations and communities have undertaken documentation projects to advance their interests. Often times, governmental structures require Indigenous Knowledge to be textualized in order for it to be used in agreements, management plans and curriculum. In other cases, Aboriginal Peoples chose to document their knowledge to demonstrate land occupancy and use to governments and corporations. Whatever their reasons, Aboriginal Peoples may document their knowledge to advance their interests. Many Aboriginal Peoples are also aware of the potential implications of documentation; how knowledge is transformed through the process of textualization, of how this knowledge can be used by the dominant society, and that the textualization of knowledge in no way ensures the survival of Indigenous Knowledge, culture or the Oral Tradition. This is not reflected in the mainstream literature on TEK. The focus in TEK remains on the importance of documentation and how TEK can be used in western society.

The textualization of Indigenous Knowledge largely occurs because western knowledge systems view literate forms of knowledge as valid (Stevenson 1998). This effectively transfers power from the knowledge holders to those that are doing the documentation, and ultimately to the content of the text itself. Indigenous Knowledge is now defined in western terms because:

> "effort[s] to "scientize" alternative knowledge systems typically involves translating those elements deemed rationale and useful by the dominant ideology into a terminology and framework that it then can appropriate and use for its own purposes" (Stevenson 1998:13).

Thus, the first stage of textualization lies in defining TEK which means developing the terminology and framework that will govern our work. Our understanding of TEK will then frame the questions we ask the Elders, the stories we write down, the experiences we document and the over-all focus of the work.

Mis-translation Across Perceived Conceptual Universals

The second stage of textualization is translation, of both language and concepts across different world views. Much has been written about language barriers and most researchers cite language as a limitation in their studies (i.e. Chapeskie 1995, Armstrong 1992, Cruikshank 1990). Language expresses reality as constructed by the people who are born into it, and it reflects the reasoning, philosophy and values of culture. The

structure of a language is designed to reflect world views. Edna Ahgeak MacLean, an Inupiaq Elder and academic focuses her work on the structure of language and the cultural identity of Native Peoples. She writes:

> "The structure of our Inupiaq language, where we have inflectional endings at the end of our words, depicts the interconnectedness between the people, the animals, the land, and the ocean, as well as all the values of respect for each of those components of the universe. You can see that reflected in people's attitudes towards the animals and the land. They realize that we have to take care of the environment. It comes out of the language" (MacLean 1997:179).

In Anishinaabemowin, (the Ojibwe language), Patricia Ningewance, an Anishinaabe-kwe language educator, writes about how the values of the Anishinaabe are reflected in the structure of the language.

> "Thirdly, the most important cultural characteristic that emerges from fluency is assuming real humility. It's an inherent concept in the language - this idea that the individual is only a minuscule particle of the larger wondrous whole organism. That goes hand-in-hand with the humour, I think. This is why we express uncertainty in so many ways. (How many thousands of ways do I to have to say to you 'I don't know'?) If I am telling you a story, I punctuate my story regularly with the word *iinzan* to remind you that I wasn't there to be inside the skin of every individual that I'm telling you about but this is the closest I can get to telling you the truth" (Ningewance 1993:5).

Joy Ashan Fedorick, a Cree author writes:

> "The wisdom still exists within our Elders and within our languages. Respect for the environment and all living things is demonstrated in

> grammatical structures and usages that do not let us lose track of the continuum: the relationship that we, as living beings, have with the trees, the air, the water, the land and our brothers and sisters, the animals. The conceptual relationship and respect for all living things is shown when we say 'wood' in a tree, differently than we say 'wood' in a table. The tree is living, and must be named while wood in the table is dead. Therefore, we acknowledge the spirit of life within living wood matter, and the transition into the no-longer-animated" (Fedorick 1989:69).

In the opening statements of the Gitksan and Wet'suwet'en Hereditary Chiefs, lawyers for the Chiefs presented the problem of translation within a society that largely sees Aboriginal Peoples as primitive, and less technologically advanced than Euro-Canadian society as the court's "first challenge".

> "The second challenge for the court very much related to the first, involves the problems of communication between very different cultures. The problems here are not simply those inherent in the necessity to translate from Gitksan or Wet'suwet'en to English, as they would be the case in a situation where the witnesses were Francophone. French and English cultures, although different, trace common and historical roots and share a world-view. The Gitksan and Wet'suwet'en world-view is of a qualitatively different order" (Wa 1989:22).

The English language reflects the world view that bore it, and thus many Indigenous peoples have expressed its inadequacy in articulating Indigenous philosophies, methods of reasoning, lifeways and knowledge (Crozier and Wilson 1997, Chapeskie 1995, Armstrong 1992).

> "Words, being shaped through lineage emerging out of culture, have rootedness in meaning which renders them exclusionary. My very real situation is that I am here speaking not my language to you, and in doing

> so, realize that it is I who must frame my thinking into another language, a language which excludes all of my Okanagan cultural understanding as though it were non-existent" (Armstrong 1992:76).

Translation from French to English looses the subtleties of the French language, but translation from Anishinaabemowin[27] to English requires a translation of fundamentally different worlds and concepts (*cf.* Wa 1989). English is a filtering system, which frames the Anishinaabe world into western terms, terms that are often perceived by members of the dominant society as cross-cultural universals. What is lost, are not the subtleties, but the foundation and framework that gives meaning to the words. Jeanette Armstrong, explains:

> "Words have meanings which we take for granted when we speak in a given language. I use the example of a word of which we may be commonly familiar, if we speak English. The word *tree* conjures up an image that we may think has the same meaning, but let us consider a few meanings and how they might arise...
>
> To someone from the lumber or paper industry, the word *tree* has a significantly different meaning than to an orchardist. Likewise, a person from the Arctic circle will have a profoundly different meaning gathered from TV and book illustrations, than a person from the rain forest. A person who has never walked under trees in forests and heard breezes rustling through leaves as birds filled branches, filtering sunlight and rain, will never truly know a tree. To the person whose direct survival depends on trees, the *tree* has a deeper cultural meaning - steeped in an essence of gratitude toward the creation of the tree, and therefore enveloped within a unique cultural expression of reverence toward creation.
>
> In this light, consider the extreme difference between a logging conglomerate president's meaning and one in whose culture trees are living relatives in spirit, though the word might be referred to, by both, in English. Can we say that these are two different trees? Or might it be

---

[27] The same could be said about English and other Aboriginal languages.

> possible to understand that this is only one tree that has two different meanings?
>
> ... thus even though I might translate *tree* into an English word, my cultural meaning remains intact as though spoken in my language while your cultural understanding of the word remains locked within the context of your culture. Unless you also speak my language, or permit me to fully interpret my meaning, the tree of which I speak remains a *tree* cloaked in my culture and language which excludes my meaning" (Armstrong 1992:75-76).

One of the best pieces of advice I received during this work was from Deborah McGregor, an Anishinaabe-kwe from Birch Island, Ontario. She told me to never assume that concepts were universal, to always check with Anishinaabe-thinkers, those who think in the language (D. McGregor, Ph.D. Candidate, Department of Forestry, University of Toronto, personal communication, October 6, 1998). I did not work through translators when I worked with the Elders or traditional people. We worked mostly in English. During our time out on the land or doing ceremonies, we used both Anishinaabemowin and English, with the Elders translating for me. It was during these times that I learned a great deal. I was always asking questions about what the words meant exactly. The speakers were translating the words, the meaning and the cultural context or word view in their heads, and I wanted to understand. One day, I asked if he could think of a word in Anishinaabe that meant spiritual. At first he said no, there were no words that meant spiritual. Then, after a long pause, he said, I guess it might be "Kitchi", which is the word for really big. He explained that Kitchi meant really big, not just in physical size, but bigger than us all, profound.

Chapeskie (1995), in his submission to the Royal Commission on Aboriginal Peoples, discusses "non-Aboriginal Euro-Canadian discourse of 'land use' and 'resource management' with the ideas and practice of customary Anishinaabe relationships to land". By focusing on language, Chapeskie reveals how the dominant society mistakenly assumes that the meaning of words such as "wilderness", "harvesting", and "resource management" have the same meanings in Indigenous world views.

> "I decided to ask Elder Petiquan if she knew an Anishinaabe term for 'natural resources' or if she could describe it in her Anishinaabe language. She and her daughter, Jane Williams, discussed this for some time in their aboriginal tongue. No, was her answer to me. Did she know what I had meant when I used the term "natural resources" in prior conversations with her and her daughter? Not really, was the answer. Her daughter, however, being fluently bilingual understood this term perfectly well. Did Elder Petiquan have a term or description for either of 'natural' or 'resources', I asked. Once again the response was no. There were no terms for wild or wilderness as non-Aboriginals might understand them" (Chapeskie 1995:17).

I had several similar conversations with Elders regarding terms like 'sustainable development', 'spirituality', and 'environment'. The more familiar the Elder was with the environmental field, the more likely they were to define these terms in western ways, but as I asked more questions, it became clear to them what I was after. English will probably continue to be used to express TEK, because it is the only way English speakers have access to this knowledge. By challenging the dominant perception of concepts assumed to be present in other cultures, we can achieve a greater understanding of Indigenous perspectives.

Proper translation is crucial to cross cultural understanding. By never assuming that words represent universal concepts, English speakers can begin to question and eventually understand the perspectives of those who think in and speak Aboriginal languages.

Transformation From Process to Product

Paying attention to the structure of language and translation reinforces Indigenous Knowledge as a process rather than a product or endpoint. Leory Little Bear, Wolf Horn, Blood Tribe, Blackfoot Confederacy, writes:

> "[L]anguage is a good repository of this basic philosophy and world view. The English language is all about nouns, things, objects, following up on the notion of objective language. It is not about process. Native languages are process oriented. I don't like to say verb-oriented because even the word verb is a noun" (Little Bear 1998:17).

The structure of Aboriginal languages is indicative of Indigenous thought processes.

> "Constant motion is inherent in the Native thought process and consequently many Native languages, such as Blackfoot, are very action- or verb-oriented. We've always thought in terms of energy, energy fields and constant motion" (Little Bear 1996:621).

The translation of knowledge from Aboriginal languages to English, is also a process of transformation from a process-oriented system to a product-oriented system. By reducing processes into factual data, much of the power of Indigenous Knowledge is lost. The dominant society is willing to use Indigenous generated factual data in co-

management agreements, but they are not willing to use the *process* of Indigenous management. Instead of strengthening and using Indigenous processes, the dominant society inserts factual knowledge into its own processes, models and management plans. The ability of Aboriginal Peoples to effect change in environmental management then becomes greatly reduced.

"Products"-atlases, the results of questionnaires, transcribed interviews and stories, may be critically important to Aboriginal communities in land claim proceedings, negotiations, and in co-management agreements, not because they are Indigenous Knowledge, but because these institutions of Euro-Canadian society require Indigenous Knowledge to be in a literal form.

Processes including ways of managing resources, teaching, knowing, governing, resolving conflict, raising children, living and interacting are difficult to articulate in TEK "products" and in noun based languages. When these processes are lost, so is the understanding that Indigenous Knowledge is creative, inventive, and dynamic. Current TEK research over looks the innovation of Indigenous Knowledge and Indigenous ways of knowing.

De-contextualizing Indigenous Knowledge

The next stage in the process of textualizing Indigenous Knowledge is actually recording and transcribing the knowledge.

I always kept a journal of my experiences, but whenever I read over the journal, looked at the map or read the interviews, the words never captured what actually occurred. There was always something missing, and that something was everything. This made me realize that TEK might be a useful tool, but it is not a substitution for the ' real thing' - the Anishinaabe knowledge that is thousands of years old. The 'real thing' was my interaction with the Elders, the environment, the spirit-world - the context within which TEK is interpreted.

Indigenous Knowledge systems have been recognized as high context communication systems wherein most of the meaning and value of the system is derived from the context, rather than the content (Stevenson 1998, Wolfe *et al.* 1992). Stevenson goes on to note that the western scientific system is of course a literate system that is focused on content, wherein the meaning is derived from the information itself rather than the context. This difference was demonstrated during the cross examination of Antgulilibix (Mary Johnson), at the Delaguumkw Trial, when Antgulilibix asked the court if she could sing a song as part of her statement to the court on the *Ayook*, or Gitxan law. The following ensued:

> "The Court: How long is it?
> Mr. Grant (Lawyer): It's not very long. It's very short.
> The Court: Could it not be written out and asked if this is the wording?
> Really, we are on the verge of getting way off track here, Mr. Grant.
> Again, I don't want to be skeptical, but to have witnesses singing songs in

court is, in my respectful view, not the proper way to approach this problem.
Mr. Grant: Well, My Lord, with respect, the song is what one may refer to as a death song. It's a song which itself invokes the history and the depth of the history of what she is telling, And, as council, it is my submission that it is necessary for you to appreciate...
The Court: I have a tin ear, Mr. Grant, so it's not going to do any good to sing it to me...
The Witness: The reason for the sad song is when they raise the pole, and when the pole is half-way up, they tell the chiefs who pull the rope to stop for a few minutes, and they sing the song and they cry. They remember those who use to raise the pole before them. and all those that were dead before the new pole is raised. So after they sing what they call Limx oo'y, then they put up the pole.
Q: These are the poles that are raised, like a pole that is raised even in your life-time, they would sing this song?
A: Yeah, yeah.
Q: Okay.
A: Well, if the court wants me to sing it, I'll sing it.
The Court: No, I don't Mrs. Johnson, but apparently counsel does. And I think I'm in the position where if counsel in the responsible discharge of their duties say this has to be done, then I have to listen to it. But I don't think, with respect, that this is the way this part of the trial should be conducted. I just don't think it's necessary. I think it is not the right way to present the case.
Mr. Grant: You can go ahead and sing the song now.
(WITNESS SINGS SONG.)
Q: Can you tell us what the words of the song mean in English?
A: They sing about the grouse flying, flying, how the grouse flies, those are the first words. Another word says, "I will ask for you to tell him to give it to me". That means when the first sister grabs just the tail end of the grouse. And another word says, "It will make noise underneath your wings." That means when you hear the drum, when the grouse drums and it makes a loud noise. And then another word says how the grouse gave himself up to die for them to help them save their lives. So that's the end of the song. And today, the young lady that caught the grouse stood at the foot of our totem pole that we restored in 1973, and she is holding the grouse with tears in her eyes.
Q: And that pole is in Kispiox?
A: Yes.

> The Court: All right now, Mr. Grant, would you explain to me, because this may happen again, why you think it was necessary to sing the song? This is a trial not a performance" (Monet and Skanu'u 1992:42)[28].

From a western perspective, the content, the words of the song, was the only part of the song that was important. From the Gitxan perspective, the song itself, or the context was important. By textualizing Indigenous Knowledge, we are transforming it from a highly contextualized system to one that places little value on context and great importance on content (Stevenson 1998). When this is the case, power is again transferred from the people, the TEK holders, to the written word, or the content. The words, are now completely accessible to the dominant society, without translation, explanation, consent or reciprocity.

> "In this light, it is easy to appreciate why there is no reciprocity in the written word; literacy does not involve reciprocal rights or obligations, or culturally appropriate and socially-sanctioned uses of shared knowledge. Orality involves an ethic of teaching, where the people are the knowledge. Here, reciprocal relations characterizing indigenous world views and the role of people with knowledge as decision-makers are reinforced." (Stevenson 1998:13).

Indigenous Knowledge is personal. It is usually described as "subjective" in the literature, but I think personal is a better description (see Couture 1991). My relationship with each Elder was personal. Knowledge was told to me at a particular time because of

---

[28] A newspaper columnist for the *Three Rivers Report*, Wednesday July 15, 1987, writes that "Most of us non-aboriginal Canadians also were a tin ear. It seems natural because we have worn it all our lives. We are not even aware of the significant sounds we cannot hear.

What we are missing may be a valuable key which could help to open the way toward peace with justice on earth and in the Bulkely and Skeena valleys."

who I am and my relationships in the community. When TEK or Indigenous Knowledge resides with the people or its holders, the personal nature of Indigenous Knowledge is left in tact.

Many researchers believe that Indigenous cultures are dying, that Indigenous Knowledge is dying, and that one way of preventing this from occurring is to document the knowledge (i.e. Tsuji 1996). It is interesting to note that the western world prefers to view Indigenous cultures as "dying' rather than accounting for the "complex historical process of appropriation, compromise, subversion, masking, invention and revival" (Clifford 1988:339 quoted in Graveline 1998:30), and that the solution to the tragedy is for them to help us document our knowledge before it is all gone. No thought is given to the forces that contributed to the perceived loss of knowledge in the first place, the on-going policies that continue to oppress and assimilate or to confronting these forces in contemporary times (Graveline 1998).

> "The well-intentioned concern to record the TEK of elders before they pass on, only to collect dust in some archive somewhere, is misplaced. If governments and Inuit groups are really concerned about the loss of TEK, they should channel their efforts into restoring those contexts that give efficacy to this knowledge. This may mean, among other things, contributing much more support and resources to the traditional economy" (Stevenson 1998:13, note 9)

This also means ensuring Aboriginal Nations have land. If we are concerned about "saving TEK", we should be concerned with saving the land. We should be concerned with foster relationships between Elders and youth. We should be concerned with

supporting communities who are strengthening their Indigenous cultural traditions, language, the Oral Tradition. We should be ending policies that demand extinguishment of inherent rights.

I worked closely with a traditional Anishinaabe about my age on a number of issues in the community. I was telling him that the interviews I had been doing with the Elders were of high quality, but there were a lot of things I knew they were leaving out. A few times they made references to sacred stories that I had heard in the community. To the non-Native reader, it would be impossible to pick up on the reference, yet to those who knew the story, their statements became profound in a deeper way. I knew why this was happening - that I had reached the level they were willing to share with outsiders, but I asked him if there were any circumstances under which he would record the stories he knew. He told me that as long as he had one niece or nephew or child around to tell the stories too, he would not write them down. Knowing why, I proceeded to ask him why. He knew what I was doing, but he said there was no need to write them down. That if there were children still alive to hear the stories, to pass them down to their grandchildren, there was no need to write them down. The Oral Tradition would ensure the culture would still carry on. Besides, he said, when you write them down they lose their importance, they lose all of their power.

Once Indigenous Knowledge has been filtered through western conceptual models and definitions and constructed into TEK, it is textualized. The textualization process has the

effect of mis-translating knowledge across perceived conceptual universals, transforming the knowledge from process to product, de-contextualizing the knowledge, de-personalizing knowledge by separating it from the people, and transferring authority from the people to the content of the text. Textualization ultimately produces Indigenous Knowledge in a form that is completely accessible to the mainstream society. Winona LaDuke, an Anishinaabe-kwe reminds us:

> "There is a lot to be learned from our knowledge, but you need *us* in order to learn it, whether it is the story of my children's grandfather reaching his hand into that beaver house, or of the Haida upon the northwest coast, who make totem poles and plank houses" (emphases added, LaDuke 1997:36).

Indigenous Knowledge cannot be separated from the people. The people cannot be separated from the land[29]*, because the people are the land.*

Sharing Knowledge in a Hostile Environment

It is often difficult for Aboriginal Peoples to share their knowledge because they are afraid it will be mis-used and even used against them (Martin-Hill 1995). This section focuses on the risks of sharing documented knowledge with the dominant society.

In Indigenous Knowledge systems, knowledge is considered to be a gift from the Creator. Knowledge is to be shared. Once knowledge is shared it belongs to all.

---

[29] Land in an Anishinaabe sense includes the earth, animals, plants, humans, and all of their relations.

> "To our people, knowledge does not belong to us: we are simply carriers of it. We use the word p?ax, which literally translated, says "to spark so as to cause to light", as in striking a match, to mean to become mind-aware as a human. Knowledge is understood to be only a starting point for the human" (Armstrong and Cardinal 1991:66).

Knowledge is treated differently in the dominant society, and the impact of centuries of colonialism have caused some Elders to become reluctant in sharing their knowledge. Beverly Hungry Wolf, a Blood women, writes in *The Ways of My Grandmothers*, about the reluctance she encountered when she first asked her Grandmothers to teach her the old ways:

> I recall that when I first started asking my grandmothers about their old ways they sometimes discouraged me and made me feel silly for having such interests. When I first started wearing long skirts and dresses even my own grandmother told me that I should stop. 'You look like an old lady', she told me. Even though their belief in these traditions was very strong, they had been made to feel that there was no future in this world for their children and grandchildren if they didn't put these old ways aside (Hungry Wolf 1980:108).

Brubacher and McGregor (1998) write:

> "Reticence on the part of TEK holders to imparting their knowledge is therefore based, in part at least, to a fear that 'authentic TEK' - that is, traditional knowledge within its proper moral context - will not be applied to decision making but rather only certain fragments of data, particularly those which can be readily defined and understood by western science" (Brubacher and McGregor 1998:16).

Elders and other traditional people are also aware that sharing knowledge with the dominant society is full of risks.

> "There are two streams of thought from the elders. One group of elders says 'Don't be talking about these things because you're going to denigrate what you're talking about'. Another group says, 'Talk about these things because if you don't how are the young people going to know these things'" (Kinew 1998:33).

Sharing of knowledge, particularly with outside researchers is an endeavour full of risks. Once Aboriginal knowledge is documented it becomes accessible to everyone, and outside researchers often promote documentation for this very reason:

> "The use of TEK is often hindered because it is unavailable to or considered irrelevant by a broad audience. In the absence of wide access, the influence of TEK extends only as far as the influence of those who hold it. Holders of TEK may be able to speak, and speak forcefully at public hearings and in other fora, but the undocumented information is not portable, and the influence of such spoken testimony diminishes with distance in time and space. Documentation is one means by which TEK can be made more accessible, allowing it to be considered in parallel with other information, typically from scientific studies, that is written (Huntington 1998:238).

Once knowledge is made widely accessible to the dominant society, there is a very real chance that it will be mis-represented. There is also a very real possibility of shared knowledge being mis-used by members of the dominant society[30]. Once Indigenous Knowledge is textualized and constructed into TEK, it can easily be taken out of context.

---

[30] For examples of mis-use see Orton 1998a, b; Widdowson and Howard 1998; Tsuji 1996.

It can be inserted into western paradigms and models to produce results that undermine Aboriginal rights. TEK, now separated from its holders, becomes open to the cultural interpretation of the dominant society (Stevenson 1998).

> "It should also be noted that incorporating Indigenous Knowledge into current development practice and applying it to the problem of sustainability is not without some risk to indigenous peoples. Most notably, there is usually a big difference between the power wielded by indigenous peoples and that wielded by outside parties. Indigenous Knowledge can be applied to the problem of sustainability or it can be applied to the dominant paradigm, furthering the problems of an unsustainable world through its (mis)use by, for instance, transnational corporations" (Grenier 1998:11).

In reality, this does little to advance Aboriginal interests. Sharing power equally effectively involves incorporating Aboriginal Peoples' values, ethics and processes into decision making processes such as those exercised in co-management agreements rather than inserting TEK data into western decision making processes. In some ways, the way TEK is used now serves only to further marginalize Aboriginal cultures.

At the beginning of the new millennium, Aboriginal People lack real control and power over how they and their knowledge are represented by mainstream society.

> "We have all heard the expression, 'knowledge is power'. One of the basic elements of power is that those who have positions of power are able to manufacture ideas. Another is being able to place ideas that have been created into the public agenda" (Kirby and McKenna 1989:23).

Initially, transcribed interviews were to appear in this dissertation. It was a constant worry to me. Above all else, I didn't want to hurt the people who had shared so much with me. By taking their words, and publishing them in my dissertation, I was also assuming responsibility for the knowledge. I was making it accessible to the dominant society, and there were no guarantees that this knowledge would not be used at a latter date against the community. I came to the realization that I could not ethically publish those transcripts. The responsibility for the knowledge had to remain with its holders. If the community was to use those transcripts to advance their interests, as defined by them, that was one thing. But I knew I could not take the right to control the knowledge from the people who held the knowledge.

The knowledge the Elders and community members shared with me was transmitted to me using the protocols and controls of Anishinaabe culture. Anishinaabe systems, like other Indigenous Knowledge systems have their own methods of controlling the transmission of knowledge (Beck *et al.* 1990).

> "When knowledge is written down, it can then be transmitted in the absence of the original holder of the knowledge. From a non-Aboriginal perspective, this makes it easier and faster to disseminate the knowledge. From an Aboriginal perspective, it means that the knowledge is no longer properly controlled, as the physical aspects of the knowledge can now be divorced from its social - and moral - context" (Brubacher and McGregor 1998:16).

In the process of transcribing Indigenous Knowledge, the protocols governing the transmission of knowledge become assimilated by the knowledge system of the dominant society. Indigenous Knowledge systems control the transmission of knowledge in a much different manner than does the dominant society, yet these can only remain in tact under oral systems of transmission because they require reciprocity and interaction. When Indigenous Knowledge holders loose control over their knowledge it can lead to the marginalization and appropriation of their knowledge.

Marginalization, Appropriation, and Continued Disillusion

The marginalization and appropriation of Indigenous Knowledge undermines the rights of Aboriginal Peoples and often creates further divisions within Aboriginal communities. Once Indigenous Knowledge about the "environment" has been textualized, translated into the English language and into western concepts, de-contextualized, de-spiritualized, and de-personalized, or to use Stevenson's term "scientized", it is ready to be consumed by the dominant society. This often angers Indigenous Peoples, as explained by Linda Tuhiwai Smith, a Maori researcher:

> "It appals us [Indigenous People] that the West can desire, extract and claim ownership of our ways of knowing, our imagery, the things we create and produce, and then simultaneously reject the people who created and developed those ideas and seek to deny them further opportunities to be creators of their own cultures and own nations" (Tuhiwai Smith 1999:1).

The most common way of marginalizing Traditional Knowledge in Canada is "to take specific elements of Traditional Knowledge that are of interest to the conservation bureaucracy out of context and then insert them into the dominant framework of western scientific knowledge" (Stevenson 1998:4). With few exceptions this is the way TEK is used by the dominant society in environmental management, environmental impact assessments, management plans, co-management agreements and in resource management (McGregor 1999, Stevenson 1999, Stevenson 1996). Again with few exceptions, it is the environmental data component of Indigenous Knowledge that is separated from other kinds of Indigenous Knowledge, notably its spiritual base, and ethics, values and world view (McGregor 1999, AFN and NAFA 1995). It is often the data component of Indigenous Knowledge that brings about a facade of working together. TEK data is easily integrated into western scientific models and management systems, supposedly demonstrating that the two systems are working together for the common good. Marginalizing TEK in this manner prevents Indigenous Peoples from changing the current management practices of the conservation bureaucracy.

The mis-representation, appropriation and commodification of Indigenous Knowledge only serves to promote continued disillusion amongst Aboriginal Peoples with the dominant society in general and researchers and environmental managers in particular. Academics must examine their actions in a critical manner, in order not to repeat the mistakes of the past. If their aim is to stop the continued oppression of Aboriginal Peoples in Canadian society, then they must first look at how they are the

oppressors. Enrique Salmón, Tarahumara, states that appropriation of Indigenous Knowledge occurs when:

> "control of the knowledge is gained for purpose not related or beneficial to the community base from which the knowledge arose. Such control is only beneficial and related to the researcher or corporation that took the knowledge out of context and became a corrupter of that knowledge" (Salmón 1996:71).

When Indigenous Knowledge is processed into TEK it is appropriated. Once TEK is documented and published, Indigenous Knowledge holders have little control over how their knowledge is used. The following quotation by Ward Churchill, a renowned Creek and Cherokee academic is an indication of this "continued disillusion". Although Churchill is speaking about "New Agers", we could easily substitute "researchers" in the following (emphases added):

> "So our identity has been taken [controlled by the state], along with our land and our resources. What's left? Well there's the intellectual property of the few people who didn't get totally screwed up and "deculturated" in the other three processes of expropriation. This is a fairly thin repository of something truly Indian, and now we've got every Yuppie New Ager in the universe deciding that they have the inalienable right to take that too, and use it for whatever purposes they see fit.
>
> We can cut through this real fast with a statement that Onondaga Fire Keeper Oren Lyons has made. He said, 'I'm a spiritual leader among my people, and I don't understand what you're talking about with respect to rights to our religion. We have no rights in this regard. We have *responsibilities*, and it seems to me that's one thing you're trying to avoid'.
>
> Couched in those terms, there would be very few New Agers who'd queue up to learn about indigenous traditions, because these people are attempting to avoid responsibility, to sidestep the heritage

> they're a part of, Rather than rectifying it, putting it right, putting it back in balance, they want to step out of it and appropriate something else form somebody else so they can pretend to be other than who and what they are" (Churchill 1995:160).

Loretta Todd, a Metis also writes:

> "Everything about us - from our languages to our philosophies, from our stories to our dances - has become material in a quest for further discovery, for new treasures. Worrying about their feelings and their spiritual emptiness, and wondering about the lack of meaning in their lives, Westerners come looking to others for succour rather than seeking transformation from within. But their excursions into our cultural territories have not brought acknowledgments of our authority and jurisdiction over our lives. Instead, their forays have given the new explorers greater license in their cultural, political and artistic practices. Our cultural autonomy is too often ignored and our cultural uniqueness - our difference - is reduced to playing bit parts in the West's dreams" (Todd 1992:71).

The mis-use of TEK not only undermines the interests of Aboriginal Peoples, but it has also created further divisions within communities. The decision to participate in the co-management of land or in stake-holder organizations is often a difficult decision for First Nations. The natural resource management establishment in Canada seems unwilling to use Indigenous Knowledge (world view, ethics, values and morals) to make decisions, rather it inserts TEK data into western models and continues to make decisions using the systems, frameworks, values and ethics of the dominant society. The result is a sort of "controlled participation" or to use Stevenson's term "eco-colonialism"(Stevenson 1998). Aboriginal leaders must decide whether it is of benefit to their communities to participate in such structures. If they chose to participate, some community members will

label them as sell-outs. If they do not, others will perceive themselves as being left out of the process. This dilemma seems to have plagued Aboriginal leaders since contact.

The literature written by Aboriginal authors and my experiences in the community clearly demonstrates how the concept of TEK is one that is western, not Aboriginal in its origins. The manufacturing of TEK by western society marginalizes the spiritual basis of Indigenous Knowledge and omits Aboriginal environmental perspectives. The process of converting the Oral Tradition to written documents freezes Indigenous Knowledge in an inappropriate context and increases the changes of mis-translation across language, world views and conceptual barriers. Sharing knowledge in documented forms assimilates Indigenous methods of control into those of the dominant society. Ultimately, this results in the continued frustration and disillusion of Aboriginal Peoples.

As the voices of Aboriginal Peoples are heard in the field of TEK and as more non-Aboriginal academics critically examine how TEK is used by the dominant society, things are changing. Chapter 5 discusses these possibilities.

CHAPTER FIVE: CONCLUSIONS

My experiences have shown me that many Indigenous Peoples are concerned with the way TEK research is currently being conducted in Canada, and with the way TEK is used by the dominant society. The concept of Traditional Ecological Knowledge is one constructed by Euro-Canadian researchers largely to facilitate the use of Aboriginal Environmental Knowledge in the frameworks and institutions of the dominant society. The implications of this construction are far reaching and ultimately lead to the appropriation, mis-use and marginalization of Indigenous Knowledge.

In the future, Aboriginal Peoples must continue to critically examine how TEK is used by the dominant society. Academics and government representatives must acknowledge and use the alternative ways of working together Aboriginal Peoples have suggested. These models place Indigenous Knowledge holders, knowledge systems and processes on even ground with those that are western.

Aboriginal communities and cultures are diverse. Their use of Indigenous Knowledge, TEK, and the way they approach environmental problems will also be diverse given their cultural world and their history of interacting with the bureaucracies and policies of provincial and federal governments, local history, experiences with colonialism, treaties, land claims, and access to funding. Some communities will chose to use TEK to advance their interests. Some will chose to use western science. Some will continue to rely on Indigenous Knowledge to "live the good life" and as a form of

resistance and healing, and a number will chose to use different formulations of the three depending upon the issue and their current situation.

The focus of Euro-Canadian researchers must change from the documentation of TEK data to one that focuses on respecting Aboriginal Peoples, knowledge, world views and decision making. To do this, the dominant society needs to acknowledge that:

- Indigenous Peoples should be included in a fair and equitable[1] manner in decisions impacting their territories using appropriate decision making processes.
- Indigenous Knowledge must be accepted on Indigenous terms, including the spiritual basis of knowledge, world view, ethics, morals, context, and its dynamic and creative nature.
- Indigenous Knowledge holders are the authorities and the experts, and that authority does not exists in the data or those who document TEK.
- The holders of Indigenous Knowledge must have the power to determine what TEK is and how it will be used.
- Indigenous communities must have complete control of documented knowledge. Communities should decide when and if it is appropriate and necessary to separate knowledge from its holders.
- Aboriginal People have suggested alternative ways of working together other than integrating TEK into western frameworks. These ways must be taken seriously.

---

[1] Fair and equitable meaning positions of power, rather than of tokenism.

All of these recommendations are summarized in the following statement:

> *Respect Aboriginal Peoples, their knowledge systems, world views, values and ethics and regard them as equal to their western counterparts. This means using Indigenous Knowledge, including Indigenous values and ethics to make decisions. It means developing co-jurisdiction and co-management arrangements that are based on Indigenous environmental philosophies. It means regarding Indigenous systems of management as valid, reliable systems, and it demands a willingness on the part of Euro-Canadian institutions to do things differently.*

Aboriginal Peoples have suggested several ways of working together, rather than continuing to insert TEK data into western frameworks. Euro-Canadian researchers must investigate alternatives to integration. Including Indigenous Peoples (and therefore Indigenous world views, values, morals, ethics and TEK) in a fair and equitable manner means sharing power equally. Linda Hogan, a Chickasaw author, comments:

> "At this point I feel like those in the dominant culture cannot even imagine Indigenous thinking. Every action they make is different from every action indigenous people make. I'm sure you know about anthropologists who stay with a tribe to learn about their spiritual traditions, and then go home and write about it. That means they didn't get it.
>
> Synthesis of thought is thought of as positive, but that's not necessarily the case. There is also the possibility of separate cultures living side by side, cooperating with each other without being synthesized. Shared, perhaps, but not enmeshed. They don't have to integrate in that deep structured way. What's wrong with a love of difference?
>
> ..You can't co-exist with someone when they want what you've got. And now of course people want not only the Indian land base but also the Indian soul. They want the spirituality. They want to learn the belief system. But the belief system at the very base is about respect for

> the land and reverence for life. That's the basic thing people need to have in common. That's where it all begins to heal" (Hogan 1995:128).

Thomas Banyacay, a Hopi Elder, also suggests a path of co-existence:

> "In the very beginning, before we separated from our white brother - we have the same mother, but the color was different - we each received two sets of stone tablets in which all of the Great Spirit's knowledge, prophecies, and warning were set. They said Great Spirit breathed into those sacred stone tablets. They were given to two brothers who were to carry this knowledge wherever they go. The younger brother stayed here. We have that stone tablet set in Hopi today.
>
> The other was given to the white brother. He was given a special message to record things, to invent things, and to make life very beautiful and clean on the other side of the world. So he took some people with him and went around the world..." (Banyacay 1997:43).

Co-existence is just one of the ways of working together that Aboriginal Peoples have suggested since contact. If Indigenous Knowledge and western science are to work together, we must find mechanisms of doing so that respect each way of knowing equally.

How can researchers become allies with Aboriginal Peoples who are advancing their interests? Certainly, they have a responsibility as researchers to challenge their own racism, biases and assumptions. They also must respect a communities' right to determine for itself how or if it is going to use TEK, Indigenous Knowledge and western science. Derrick Jenson, interviewing Okanogan educator and author, Jeanette Armstrong, asks her what he can do, She answers:

> "A way you can help is to create space for our voice, advocate for it, add that voice in whatever ways are open to you. I make that challenge when I talk to different groups. I say: 'You can ask for my thinking, but what are you prepared to do about it?' That's especially true for people who have any sort of power in the dominant society. I say to them: "There's no point in sharing this with you, if it's only going to excite you for a day and then go your way. You're wasting my time and your time. If you're willing to do something I'm willing to talk with you" (Armstrong 1995:299).

Researchers need to examine their internal environment. They need to critically examine and challenge their own biases and assumptions, and most of all, they need to listen to the numerous Aboriginal voices already present in the literature.

REFERENCES

Ahenakew, F. and H.C. Wolfart. 1998. *Our Grandmothers' Lives As Told In Their Own Words*. Canadian Plains Research Centre, University of Regina, Regina, SK.

Armstrong, J. 1995. Keepers of the Earth. In: T. Roszak, M.E. Gomes, and A.D. Kanner, eds., *Ecopsychology: Restoring the Earth, Healing the Mind.* Sierra Club Books, San Francisco. pp. 316-323.

Armstrong, J. 1995. Jeanette Armstrong. In: D. Jenson ed., *Listening to the Land: Conversations About Nature, Culture and Eros*. Sierra Club Books, San Francisco. pp. 282-300.

Armstrong, J. 1992. Racism: Racial Exclusivity and Cultural Supremacy. In: *Give Back: First Nations Perspectives on Cultural Practice*. Gallerie: Women Artists' Monographs, North Vancouver, BC. pp. 73-85.

Armstrong, J. and D. Cardinal. 1991. *The Native Creative Process: A Collaborative Discourse Between Douglas Cardinal and Jeanette Armstrong*. Theytus Books, Penticton, BC.

Assembly of First Nations. 1993. Environment. In: *Reclaiming Our Nationhood: Stengthening Our Heritage. Report to the Royal Commission on Aboriginal People.* Assembly of First Nations, Ottawa, ON. pp. 39-50.

Assembly of First Nations, National Aboriginal Forestry Association. 1995. *The Feasibility of Representing Traditional Indigenous Knowledge in Cartographic, Pictorial or Textual Forms*. Jointly Support by the NAFA National Atlas Information Service and the Environment Division of the AFN, Ottawa, ON.

Arctic Institute of North American and Joint Secretariat-Inuvialuit Renewable Resources Committees, 1996. *Circumpolar Aboriginal People and Co-Management Practice: Current Issues in Co-management and Environmental Assessment.* Proceedings of the Conference, November 20-24, 1995, Inuvik, NT.

Banyacya, T. 1997. The Hopi Prophecy. In: L. Crozier-Hogle and D. B. Wilson, eds., *Surviving in Two Worlds: Contemporary Native American Voices.* University of Texas Press, Austin, TX. pp. 41-53.

Barnaby, J. 1992. Culture and Sovereignty. In: D. Ingelstad and J. Birds eds., *Nation to Nation: Aboriginal Sovereignty and the Future of Canada.* Anansi Press, Toronto, ON.

Beck, P.V., A.L. Walters and N. Francisco. 1990 (originally published in 1977). *The Sacred: Ways of Knowledge, Sources of Life.* Navajo Community College, Northland Publishing, Tsaile, AZ.

Benton-Banai, E. 1988. *The Mishomis Book: The Voice of the Ojibway.* Indian Country Communications, Hayward, WI.

Berkes, F. 1994. Co-management: Bridging the Two Solitudes. *Northern Perspectives* 22(2-3):18-21.

Berkes, F. 1993. Traditional Ecological Knowledge in Perspective. In: J.T. Inglis, ed. *Traditional Ecological Knowledge: Concepts and Cases.* International Development Research Centre (IDRC), Ottawa, ON. pp. 1-11.

Berkes, F. 1991. Co-management: The Evolution in Theory and Practice of the Joint Administration of Living Resources. *Alternatives* 18(2):12-18.

Berkes, F., ed. 1989. *Common Property Resources: Ecology and Community-Based Sustainable Development.* Belhaven Press, London, UK.

Berkes, F. 1988. Environmental Philosophy of the Chisasibi Cree People of James Bay. In: M. Freeman, and L.N. Carbyn, eds. *Traditional Knowledge and Renewable Resource Management.* Boreal Institute for Northern Studies, Edmonton, AB. pp. 7-21.

Berlin, D. 1973. Folk Systematics in Relation to Biological Classification and Nomenclature. *Annual Review of Ecology and Systematics* 4:259-271.

Berlin, B., D.E. Breedlove and P.H. Raven. 1968. Covert Categories and Folk Taxonomies. *American Anthropologist* 70:290-299.

Blondin, G. 1997. *Yamoria The Lawmaker: Stories of the Dene.* NeWest Press, Edmonton, AB.

Brascoupe, S. 1992. Indigenous Perspectives on International Development. *Akwe:kon Journal* 9(2): 6, 8-9, 11-17.

Brody, H. 1981. *Maps and Dreams: Indians and the British Columbia Frontier.* Douglas and McIntyre Ltd., Vancouver, BC.

Brubacher, D. and D. McGregor. 1998. *Aboriginal Forest-Related Traditional Ecological Knowledge in Canada: A Contribution to the Technical Paper for Presentation to the Nineteenth Session of the North American Forest Commission.* Villahermosa, Mexico,

November 16-20. Prepared for the Canadian Forest Service, Natural Resources Canada, by the National Aboriginal Forestry Association.

Buffalo, D. Y. 1990. Seeds of Thought, Arrows of Change: Native Storytelling as Metaphor. In: *Healing Voices: Feminist Approaches to Therapy with Women.* Jossey-Bass Publishing, San Francisco. pp. 118-142.

Bullchild, P. 1985. *The Sun Came Down: The History of the World As My Blackfeet Elders Told It.* Harper and Row, San Francisco.

Cajete, G. In Press. *Igniting the Sparkle: An Indigenous Science Education Model.* Kivaki Press, Tuscon, AZ.

Capra, F. 1996. *The Web of Life.* Anchor Books, Doubleday, Toronto, ON.

Castellano, M.B. 1986. Collective Wisdom: Participatory Research and Canada's Native People. *Convergence* xix(3):50-53.

Cizek, P. 1990. *The Beverly and Kaminuriak Caribou Management Board: A Case Study of Aboriginal Participation in Resource Management, Working Paper #1*, Canadian Arctic Research Council (CARC), Ottawa, ON.

Chapeskie, A. 1995. *Land, Landscape, Culturescape: Aboriginal Relationship to the Land and the Co-Management of Natural Resources.* A Report Prepared for the Royal Commission on Aboriginal Peoples, Land, Resources and Environment Regimes Project.

Churchill, W. 1995. Ward Churchill. In: D. Jenson ed., *Listening to the Land: Conversations About Nature, Culture and Eros.* Sierra Club Books, San Francisco. pp. 153-164.

Clarkson, L., V. Morrissette and G. Regallet. 1992. *Our Responsibility to the Seventh Generation: Indigenous Peoples and Sustainable Development.* International Institute for Sustainable Development, Winnipeg, MB.

Clayoquot Sound Scientific Panel. 1995. *First Nations' Perspectives Relating to Forest Practice Standards in Clayoquot Sound, Report 3.* The Scientific Panel for Sustainable Forest Practices in Clayoquot Sound, Tofino, BC.

Colorado, P. 1988. Bridging Native and Western Science. *Convergence* 2/3:49-86.

Colorado, P. and D. Collins. 1987. Western Scientific Colonialism and the Re-emergence of Native Science. *Practice* 5(3):50-65.

Coon Come, M. 1995. Clearing the Smokescreen, In: B.W. Hodgins and K.A. Cannon, eds., *On the Land: Confronting the Challenges to Aboriginal Self-Determination in Northern Quebec and Labrador.* pp. 5-17.

Cooper, B. 1997. Walking in Two Worlds. In: L. Crozier-Hogle and D. B. Wilson, eds., *Surviving in Two Worlds: Contemporary Native American Voices.* University of Texas Press, Austin, TX. pp. 113-123.

Couture, J.E. 1996. The Role of Native Elders: Emergent Issues. In: D.A. Long and O.P. Dickason, eds., *Visions of the Heart: Canadian Aboriginal Issues.* Harcourt Brace and Company Canada, Ltd., Toronto, ON.

Couture, J.E. 1991. Natives and the Earth. In: J. Martin, ed. *Alternative Futures for Prairie Agricultural Communities.* Faculty of Extensions Studies, University of Alberta, Edmonton, AB. pp. 253-268.

Crozier-Hogle, L. and D. B. Wilson, eds. 1997. *Surviving in Two Worlds: Contemporary Native American Voices.* University of Texas Press, Austin, TX.

Cruikshank, J. 1990. *Life Lived Like A Story.* University of British Columbia Press, Vancouver, BC.

Deloria, V. 1997. *Red Earth, White Lies: Native Americans and the Myth of Scientific Fact.* Fulcrum Publishing, Golden, CO.

Dene Cultural Institute. 1993. *Traditional Dene Environmental Knowledge: A Pilot Project Conducted in Ft. Good Hope and Colville Lake N.W.T 1989-1993.* Dene Cultural Institute, Hay River, NT.

Diamond, J.M. 1968. Zoological Classification System of a Primitive People. *Science* 151:1102-1104.

Doubleday, N. C. 1993. Finding Common Ground: Natural Law and Collective Wisdom, In: J. T. Inglis, ed., *Traditional Ecological Knowledge: Concepts and Cases.* International Program on Traditional Ecological Knowledge and IDRC, Ottawa, ON. pp. 41-55.

Driben, P. 1993. *Living off the Land in the Whitesand Indian Band: The Economic, Social, Cultural and Spiritual Importance of Subsistence Endeavours in a Contemporary Northern Ojibwa Community.* Hydro and the Whitesand Indian Band, Toronto, ON.

Driben, P., D.J. Auger, A.N. Doob and R.P. Auger. 1997. No Killing Ground: Aboriginal Law Governing the Killing of Wildlife Among the Cree and Ojibwa of Northern Ontario. *Ayaangwaamizin* 1:91-108.

Driben, P. and L.R. Simpson. 1996. *A Cultural Atlas of the Homeland of the Long Lake #58 First Nation.* Assembly of First Nations, Ottawa, ON.

Dwyer, P.D. 1976. Beetles, Butterflies and Bats: Species Transformation in a New Guinea Folk Classification. *Oceania* 46:188-205.

Eigenbrod, R. and S. O.'Meara. 1997. Wo/Men's Place: A Cross-Cultural Dialogue. Paper Presentation, 29th Algonquin Conference, Thunder Bay, ON. October 23-26, 1997.

Fitznor, L. 1998. The Circle of Life: Affirming Aboriginal Philosophies in Everyday Living. In: D. McCance ed., *Life Ethics in World Religions.* Scholars Press, Atlantic GA. pp. 21-39.

Fedorick, J.A. 1989. Mother Tongue: Aboriginal Cultures and Languages. *Canadian Woman Studies.* 10(2/3):69-71.

Feit, H. 1988. Self-Management and State Management: Forms of Knowing and Managing Northern Wildlife. In: M. Freeman, and L.N. Carbyn, eds. *Traditional Knowledge and Renewable Resource Management.* Boreal Institute for Northern Studies, Edmonton, AB. pp. 72-91.

Freeman, M. 1976. *Inuit Land Use and Occupancy Study, Volumes I, II, III.* Department of Indian and Northern Affairs, Ottawa, ON.

Final Report of the Royal Commission on Aboriginal Peoples. 1996. Volume 1, Canada Communication Group, Ottawa, ON.

Final Report of the Royal Commission on Aboriginal Peoples. 1996. Volume 2, Canada Communication Group, Ottawa, ON.

Final Report of the Royal Commission on Aboriginal Peoples. 1996. Volume 5, Canada Communication Group, Ottawa, ON.

Forbes, J. 1997. We Can Have New Visions. In: L. Crozier-Hogle and D. B. Wilson, eds., *Surviving in Two Worlds: Contemporary Native American Voices.* University of Texas Press, Austin, TX. pp. 243-253.

Fox, Mrs. 1996. In: Final Report of the Royal Commission on Aboriginal Peoples. 1996. Volume 2, Canada Communication Group, Ottawa, ON.

Ghostkeeper, E. 1996. *Spirit Gifting: The Concept of Spiritual Exchange.* Arctic Institute of North America, Calgary, AB.

Glum, G. 1988, *Calling of an Angel: The Story of Essiac.* Silent Walker, US.

Goodstriker, D. 1996. The TEK Wars. In: J. Weaver, ed., *Defending Mother Earth: Native American Perspectives on Environmental Justice.* Orbis, New York. pp. 144-152.

Graveline, F. J. 1998. *Circle Works: Transforming Eurocentric Consciousness.* Fernwood, Halifax, NS.

Grenier, L. 1998. *Working with Indigenous Knowledge: A Guide For Researchers.* IDRC, Ottawa, ON.

Gunn-Allen, P. 1992. *The Sacred Hoop: Recovering the Feminine in American Indian Traditions.* Beacon Hill Press, Boston, MA.

Gunn, A., G. Arlooktoo and D. Kaomayok. 1988. The Contribution of the Ecological Knowledge of Inuit to Wildlife Management in the Northwest Territories. In: M. Freeman, and L.N. Carbyn, eds. *Traditional Knowledge and Renewable Resource Management.* Boreal Institute for Northern Studies, Edmonton, AB, pp. 22-30.

Gwitch'in Renewable Resource Board. 1997. *Nanh'Kak Geenjit Gwich'in Cinjik: Gwich'in Words About the Land.* Inuvik, NT.

Hallowell, I.A. 1992. J.S.B. Brown, ed. *The Ojibwa of Berens River, Manitoba: Enthnography into History.* Harcourt Brace, Toronto, ON.

Hallowell, I.A. 1960. Ojibwa Ontology, Behavior, and World View. In: S. Diamond, ed., *Culture in History: Essays in Honor of Paul Radin.* Columbia University Press, New York.

Hallowell, I.A. 1955. *Culture and Experience.* Schocken Books, New York.

Higgins, C. 1998. The Role of Traditional Ecological Knowedge in Managing for Biodiversity. *The Forestry Chronicle* 74(3):323-326.

Hoare, T., C. Levy and M.P. Robinson. 1993. Participatory Action Research in Native Communities: Cultural Opportunities and Legal Implications. *The Canadian Journal of Native Studies* xiii (1):43-68.

Hogan, L. 1995. Linda Hogan. In: D. Jenson ed., *Listening to the Land: Conversations About Nature, Culture and Eros.* Sierra Club Books, San Francisco. pp. 122-131.

Holzkamm, T. L. Waisberg and J. Lovisek. 1998. Rainy River: Heartland of the Grand Council Ojibway. In: J. Oakes, R. Riewe, K. Kinew and E. Maloney, eds. *Sacred Lands: Aboriginal World Views, Claims, and Conflicts.* Occasional Publication no. 43, Canadian Circumpolar Institute, University of Alberta, Edmonton, AB. pp. 107-117.

Hungry Wolf, B. 1982. *The Ways of My Grandmothers.* Quill, New York.

Huntington, H.P. 1998. Observations on the Utility of the Semi-directive Interview for Documenting Traditional Ecological Knowledge. *Arctic* 51(3):237-242.

Hutchens, A.R. 1991. *Indian Herbalogy of North America.* Shambhala, Boston, MA.

Inglis, 1993. Preface. In: J. T. Inglis, ed., *Traditional Ecological Knowledge: Concepts and Cases.* International Program on Traditional Ecological Knowledge and IDRC, Ottawa, ON. pp. vi-vii.

Jacobs, D. 1992. Wapole Island: Sustainable Development. In: D, Engelstad and J. Bird, eds., *Nation to Nation: Aboriginal Sovereignty and the Future of Canada.* Anasi Publishing, Toronto. pp. 179-185.

Jenson, D. 1995. *Listening to the Land: Conversations About Nature, Culture and Eros.* Sierra Club Books, San Francisco, CA.

Johannes, R.E. 1993. Integrating Traditional Ecological Knowledge and Management with Environmental Impact Assessment. In: J.T. Inglis, ed. *Traditional Ecological Knowledge: Concepts and Cases.* IDRC, Ottawa, ON. pp. 33-41.

Johnson, M. 1992. *Lore: Capturing Traditional Environmental Knowledge.* Dene Cultural Institute and IDRC, Ottawa, ON.

Jones, F. 1997. Last of the Wintu Doctors. In: L. Crozier-Hogle and D. B. Wilson, eds., *Surviving in Two Worlds: Contemporary Native American Voices.* University of Texas Press, Austin, TX. pp. 21-31.

Kegg, M. and J. Nichols. 1991. *Portage Lake: Memories of an Ojibwe Childhood.* University of Minnesota Press, Minneapolis, MN.

Kinew, K.A. 1997. Exploring the Myths of Manomin. *Issues in the North Volume II.* Canadian Circumpolar Institute and the University of Manitoba, Winnipeg, MB.

Kinew, K.A. 1995. *Manito Gitigann: Governing in the Great Spirit's Garden: Wild Rive in Treaty #3.* Unpublished Ph.D. Dissertation, Department of Graduate Studies, University of Manitoba, Winnipeg, MB.

Kinew, T. 1998. "Let Them Burn the Sky": Overcoming Repression of the Sacred Use of Anishinaabe Lands. In: J. Oakes, R. Riewe, K. Kinew and E. Maloney, eds. *Sacred Lands: Aboriginal World Views, Claims, and Conflicts.* Occasional Publication no. 43, Canadian Circumpolar Institute, University of Alberta, Edmonton, AB. pp. 33-39.

Kirby, S. and K. McKenna. 1989. *Experience, Research and Social Change: Methods from the Margins.* Garmound Press, Toronto, ON.

Kurelek, C. 1992. Anthropological Participatory Research Among the Innu of Labrador. *Native Studies Review* 8(2): 127-148.

Knudston, P. and D. Suzuki. 1992. *The Wisdom of the Elders.* Stoddart, Toronto, ON.

Kawagley, O.A. 1995. *A Yupiaq Worldview: A Pathway to Ecology and Spirit.* Waveland, Prospect Heights, IL.

Labrador Inuit Association, C. Brice-Bennett, ed. 1977. *Our Footprints Are Everywhere: Inuit Land Use and Occupancy in Labrador.* Nain, Labrador.

LaChapelle, D. 1995. Ritual - The Pattern That Connects. In: G. Sessions, ed. *Deep Ecology For the Twenty-First Century: Readings on The Philosophy and Practice of the New Environmentalism.* Shambhala, Boston, MA.

Lacey, L. 1993. *Micmac Medicines, Remedies and Recollections.* Nimbus, Halifax, NS.

LaDuke, W. 1997. Voices From White Earth. In: H. Hannum, ed., *People, Land and Community: Collected E.F. Schumacher Society Lectures.* E.F. Schumacher Society, Barrington, MA. pp. 22-37.

LaDuke, W. 1994a. A Society Based on Conquest Cannot Be Sustained. In: A. Gedicks, *The New Resource Wars: Native and Environmental Struggles Against Multinational Corporations.* South End Press, Boston, MA. pp. ix-xv.

LaDuke, W. 1994b. Traditional Ecological Knowledge and Environmental Futures. *Colorado Journal of International Environmental Law and Policy* 5:127-148.

Lewis, H.T. 1993. Traditional Ecological Knowledge: Some Definitions. In: N.M. Williams, and G. Baines, eds. *Traditional Ecological Knowledge: Wisdom for*

Sustainable Development. Centre for Resources and Environmental Studies, Australian National University, Canberra, Australia.

Little Bear, L. 1998. Aboriginal Relationships to the Land and Resources. In: J. Oakes, R. Riewe, K. Kinew and E. Maloney, eds. *Sacred Lands: Aboriginal World Views, Claims, and Conflicts.* Occasional Publication no. 43, Canadian Circumpolar Institute, University of Alberta, Edmonton, AB. pp. 15-32.

Longclaws, L, 1996. Native Perspectives on Healing. *Issues in the North Volume 1.* Canadian Circumpolar Institute and the University of Manitoba, Winnipeg, MB. pp. 1-7.

Longclaws, L. 1994. Social Work and the Medicine Wheel Framework. In: B.R. Compton, and B. Galaway, *Social Work Processes.* Brooks/Cole, Pacific Grover, CA.

Luckey, J. 1995. *Native and Non-Native Perspectives on Aboriginal Traditional Environmental Knowledge.* A Major Paper Submitted to the Faculty of Environmental Studies, York University, North York, ON.

Lyons, O. 1997. It is in Our Hands. In: L. Crozier-Hogle and D. B. Wilson, eds., *Surviving in Two Worlds: Contemporary Native American Voices.* University of Texas Press, Austin, TX. pp. 11-21.

MacLean, E.A. 1997. Keeping the Songs Alive. In: L. Crozier-Hogle and D. B. Wilson, eds., *Surviving in Two Worlds: Contemporary Native American Voices.* University of Texas Press, Austin, TX. pp. 177-185.

Martin-Hill, D. 1995. *Lubicon Lake Nation: Spirit of Resistance.* Unpublished Ph.D. Dissertation. Anthropology Department. McMaster University, Hamilton, ON.

McDonald, M., L. Arragutiainaw and S. Novalinga, eds. 1997. *Voices from the Bay: Traditional Ecological Knowledge of Inuit and Cree in the Hudson Bay Bioregion.* CARC, Ottawa, ON.

McDonald, M., and B. Fleming. 1993. Community-Based Economic Development and Resource Management in the Hudson Bay Area. In: J.T. Inglis, ed. *Traditional Ecological Knowledge: Concepts and Cases.* IDRC, Ottawa, ON. pp. 63-69.

McGregor, D. 1999. Indigenous Knowledge in Canada: Shifting Paradigms and the Influence of First Nation Advocates. *Conference Proceedings of Science and Practice: Sustaining the Boreal Forest.* Sustainable Forest Management Network, February 14-17, Edmonton, Alberta. pp. 192-198.

McGregor, D. 1998. Personal Communication. Anishinaabe Ph.D. doctoral candidate, Department of Forestry, University of Toronto. October 8.

Medicine, B. 1987. My Elders Tell Me. In: J. Barman, Y. Hebert and D. McCaskill, eds. *Indian Education in Canada Volume 2: The Challenge.* University of British Columbia Press, BC. pp. 142-153.

Monet, D. and Skanu'u (Ardythe Wilson). 1992. *Colonialism on Trail: Indigenous Land Rights and Gitksan and Wet'suwet'en Sovereignty Case.* New Society Press, Gabriola Island, BC.

Nakashima, D.J. 1993. Astute Observers on the Sea Ice Edge. In: J.T. Inglis, ed., *Traditional Ecological Knowledge: Concepts and Cases,* IDRC, Ottawa, ON.

Nakashima, D. J. 1991. *The Ecological Knowledge of Belcher Island Inuit: A Traditional Basis for Contemporary Wildlife Co-management.* Unpublished Ph.D. Thesis, McGill University, Montreal, PQ.

Ningewance, P.M. 1993. *Survival Ojibwe: Learning Conversational Ojibwe In Thirty Lessons.* Mazinnate Press, Winnipeg, MB.

Northern River Basins Study, 1994. *Traditional Knowledge Document: How Our Knowledge Lives.* Edmonton, AB.

Notzke, C. 1994. *Aboriginal People and Natural Resources in Canada.* Captus University Press, Toronto, ON.

Oakes, J. 1997. Our Clothes: Pride, Culture and Environment. In: J. Oakes and R. Riewe, eds., *Culture, Economy, and Ecology: Case Studies From the Circumpolar Region.* Cider, Milbrook, ON. pp. 35-50.

Oakes, J. and R. Riewe. 1997. *Culture, Economy and Ecology: Case Studies From the Circumpolar Region.* Cider, Milbrook, ON.

Oakes, J. and R. Riewe. 1996. Communicating Inuit Perspectives on Research. *Issues in the North, Volume I.* Canadian Circumpolar Institute and the University of Manitoba, Winnipeg, MB. pp. 71-81

Orton, D. 1998a. Fisheries and Aboriginals: The Enclosing Paradigm. Green Web Bulletin #45. *Native Americans and the Environment.* [On-line]. Available http://conbio.rice.edu/nae/docs/fisheries.html.

Orton, D. 1998b. The Left and Environmental-First Nations Relationships, Green Web Bulletin #46. *Native Americans and the Environment.* [On-line]. Available http://conbio.rice.edu/nae/docs/deep.html.

Pesky, S. 1998. *The Delaguumkw Decision.* Suzuki Foundation, Vancouver, BC.

Poole, P. 1994. *Land-Based Communities, Geomatics and Biodiversity Conservation.* Biodiversity Support Program, Washington, DC.

Posey, D.A. and G. Dutfield. 1996. *Beyond Intellectual Property: Toward Traditional Resource Rights For Indigenous Peoples and Local Communities.* IDRC, Ottawa, ON.

Potts, G. 1992. Growing Together From the Earth. In: D, Engelstad and J. Bird, eds., *Nation to Nation: Aboriginal Sovereignty and the Future of Canada.* Anasi Publishing, Toronto, ON. pp. 199-201.

Raven, G. and B. Prince. 1996. Role of the Elders: Yesterday and Today. *Issues in the North Volume I.* Canadian Circumpolar Institute and the University of Manitoba, Winnipeg, MB. pp. 51-55.

Raven, R., G. Flett and G. Bushie. 1998. *Alternative Ways of Healing From Addictions.* Native Alcohol and Drug Addictions Program, Hollow Water First Nation, MB.

Riewe, R., ed. 1992. *Nunavut Atlas.* Canadian Circumpolar Institute and the Tungavik Federation of Nunavut. Edmonton, AB.

Ryan, J. and M.P. Robinson. 1990. Implementing Participatory Action Research in the Canadian North: A Case Study of the Gwich'in Language and Cultural Project. *Culture* X(2):57-71.

Robinson, H. and W. Wickwire. 1992. *Nature Power: Spirit of An Okanagan Storyteller.* Douglas and McIntrye, Vancouver, BC.

Salmón, E. 1996. Decolonizing Our Voices. *Winds of Change* Summer:70-73.

Sillitoe, P. 1998. The Development of Indigenous Knowledge. *Current Anthropology* 39(2):223-252.

Simpson, L.R. In Press. Anishinaabe Ways of Knowing. *Issues in the North, Volume 3.* Canadian Circumpolar Institute and the University of Manitoba, Winnipeg, MB.

Simpson, L.R. and P. Driben. 1997. *From Expert to Acolyte: Understanding the Environment from an Anishinaabe Point of View*. 29th Algonquin Conference, Thunder Bay, Ontario. October 23-26.

Sinclair, M. 1994. Aboriginal Peoples and Euro-Canadians: Two World Views. In: J.H. Hylton, ed. *Aboriginal Self-Government In Canada: Current Trends and Issues.* Purich, Saskatoon, SK. pp.19-34.

Snake, R. 1993. Living in Harmony with Nature: A Talk by Reuben Snake. *Akwe:kon Journal* 10(3):11-15.

Smith, T.S. 1995. *The Island of the Anishnaabeg: Thunderers and Water Monsters in the Traditional Ojibwe Life-World.* University of Toronto Press, Toronto, ON.

St. Denis, V. 1992. Community-Based Participatory Research: Aspects of the Concept Relevant for Practice. *Native Studies Review* 8(2):50-75.

St. Pierre, M and T. Long Soldier. 1995. *Walking in the Sacred Manner: Healers, Dreamers and Pipe Carriers - Medicine Women of the Plains Indians.* Touchestone Books, Toronto, ON.

Stark, R. 1992. *Guide to Indian Herbs.* Hancock House, Surrey, BC.

Stiegelbauer, S.M. 1996. What is an Elder? What do Elders do? First Nation Elders As Teachers in Culture-Based Urban Organizations. *Canadian Journal of Native Studies* XVI:37-66.

Stevenson, M.G. 1999. What Are We Managing? Traditional Systems of Management and Knowledge in Cooperative and Joint Management. *Conference Proceedings of Science and Practice: Sustaining the Boreal Forest.* Sustainable Forest Management Network, February 14-17, Edmonton, Alberta. pp. 161-170.

Stevenson, M.G. 1998. Traditional Knowledge and Environmental Management: From Commodity to Process. Prepared for The National Aboriginal Forestry Association Conference "Celebrating Partnerships", Prince Albert, SK, September 14-18.

Stevenson, M.G. 1997. Inuit and Co-Management: Principles, Practices and Challenges for the New Millennium. Prepared for the Inuit Circumpolar Conference, President's Office, Nuuk, Greenland.

Stevenson, M.G. 1996. Indigenous Knowledge in Environmental Assessment. *Arctic* 49(3):278-291.

Thorpe, D. 1997. People of the Seventh Fire. In: L. Crozier-Hogle and D. B. Wilson, eds., *Surviving in Two Worlds: Contemporary Native American Voices.* University of Texas Press, Austin, TX. pp. 3-11.

Todd, L. 1992. What More Do They Want? In: G. McMaster and L-A. Martin eds., *Indigena: Contemporary Native Perspectives.* Douglas and McIntyre, Vancouver, BC.

Tsuji, L.J.S. 1996. Loss of Cree Traditional Ecological Knowledge in the Western James Bay Region of Northern Ontario, Canada: A Case Study of the Sharp-Tailed Grouse, *Tympanuchus phasianellus phasianellus. Canadian Journal of Native Studies* XVI(2): 283-292.

Tyhiwai Smith, L. 1999. *Decolonizing Methodologies: Research and Indigenous Peoples.* Zed Books, London, UK.

Usher, 1987. Indigenous Management Systems and the Conservation of Wildlife in the Canadian North. *Alternatives* 149(1):3-9.

Wa, G. 1989. *The Spirit in the Land: The Opening Statement of the Gitksan Wet'suwet'en Hereditary Chiefs in The Supreme Court of British Columbia.* Reflections, Gabriola, BC.

Weed, S. 1996. *Breast Cancer? Breast Health! The Wise Woman Way.* Ash Tree, Woodstock, NY.

Widdoson, F. and A. Howard. (2 May 1998). Natural Stewards or Profit-Makers? *Globe and Mail.*

Williams, A. 1989. The Spirit of My Quilts. *Canadian Woman Studies* 10(2/3):49-51.

Wolfe, J., C. Bechard, P. Cizek and D. Cole. 1992. *Indigenous and Western Knowledge and Resource Management Systems.* First Nations Series. University School of Rural Planning and Development, University of Guelph, Guelph, ON.

World Commission on Environment and Development. 1987. *Our Common Future.* Oxford University Press, New York.