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Master's Thesis
The Naturalized Knowledge System
A Methodology for Community Development

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May 2000



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Abstract

Community development in First Nations communities poses many challenges to the researcher, the community "activist" and the funding agency alike. Overcoming centuries of attempted cultural assimilation, environmental degradation, and community strife can seem overwhelming, incomprehensible, and at its worst impossible. While these challenges, which we are reminded of daily in the media, abound, we need to divert our attention away from these individual symptoms and focus on remediating the health of the community as a whole. The extensive experience of the Haudenosaunee (Iroquois) Confederacy in adapting to their natural environment, and the distillation of this knowledge and the traditions of their peoples, offers us a comprehensive model for community development with the potential to overcome "crisis management" and begin planning for the future. Based on respect, equity, and empowerment, the Naturalized Knowledge System methodology enables us to evaluate, plan and promote community development at all levels – the individual, group, nation and confederacy. An adaptive tool, it learns from past mistakes and successes, integrating community development, cultural preservation, and environmental restoration into one process. The fundamental elements of the Naturalized Knowledge System methodology are developed in this paper, demonstrated in application to the community development of the Maleku First Nation of Costa Rica, and compared to other community development practices such as safety audits for women in urban environments, and creating place-based cultural representation in American cities. This demonstrates that the Naturalized Knowledge System methodology, while traditionally applied to the community development of the Mohawks of Akwesasne, can also be applied outside of this original cultural articulation, to the benefit of other First Nations communities across the globe.

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Appendix I

Chapter 1

Thanksgiving Address

(The people) May we now gather our minds as one and give one another greetings, and thanks that we are gathered here in good health and in peace.

Let us bring our minds together and agree that we people are important.

(Mother Earth) May we now gather our minds together as one and greet and give our thanks to our mother the earth for all that she provides us with so we may live.

Let us bring our minds together and agree that the Mother Earth is important.

(The Waters) May we now gather our minds together as one and turn to the spirit of the waters of the world. As a home for fish and other waterborne animals, a source of food, a way to quench our thirst, a source of cleansing and the first environment in which our children begin to grow, we now send our thanks to the waters of the world.

Let us bring our minds together and agree that the Waters are important.

(Animal life) As we look around us in our lives every day, we see all kinds of animals. The magic transformation of the caterpillar into a butterfly, the friendship and protection given to us by our dogs, the cows and horses in fields and all of the animals of the forest remind us daily of the often silent constant movement and beauty of the world around us. May we now gather our minds together as one and give our words of greetings and thanks to the animals.

Let us bring our minds together and agree that the animal life is important.

(Trees of the Forest) In the forests, trees young and old, give safe haven and protection to many animals. They clean the air that we breathe and speak of majesty and long-lived tradition. May we now gather our minds together as one and give greetings and thanks to the trees of the forest for the fruits we eat, for the shade in summer, and for the shelter of our homes.

Let us bring our minds together and agree that the trees are important.

(Green Plants) All around us as the growing seasons come and go, the smells, tastes and sight of growing plants brings us life and health. May we now gather our minds together as one and give greetings and thanks to the plant life for giving us food and medicine.

Let us bring our minds together and agree that all plants are important.

(Bird Life) This morning, as I listened to the birds, I was reminded that it was the Creator who instructed the birds to sing upon the arrival of each new day. The song of birds

was brought to this world so that all life will not know boredom. With one mind we now greet and thank the bird life.

Let us bring our minds together and agree that the birds are important.

(Grandfather Thunders) The Creator instructed the grandfather thunders to put fresh water into the rivers, lakes and springs to quench the thirst of life. The grandfathers also remind us our own humility, for when we hear their voices we realize how small we are, and how much we need the others around us to survive. So with one mind we give our greetings and thanks to our grandfathers.

Let us bring our minds together and agree that the grandfathers are important.

(Our Eldest Brother The Sun) We are the younger siblings and our elder brother the sun shines the light so we may see and he radiates warmth that all life may grow. The arrival of the sun brings us happiness and encouragement to enjoy the world around us. We now with one mind give greetings and thanks to our eldest brother the sun.

Let us bring our minds together and agree that the sun is important.

(Our Grandmother The Moon) Our Creator placed her in charge of the birth of all things and made her leader of all female life. All babies of all nations are born by her orchestration. May we now gather our minds into one and send our greetings and our thanksgiving to our grandmother the moon.

Let us bring our minds together and agree that grandmother moon is important.

(Our Creator) Our Creator makes all life with nothing lacking. All we humans are required to do is waste no life and be grateful daily to all life. And so now we gather all our minds into one and send our greetings and our thanksgiving to our maker, our Creator.

Let us bring our minds together and agree that all of these things are important. In so agreeing, we must be mindful of our actions and responsibilities to seven generations and cast our thoughts ahead to those that will follow us so that our thoughts and actions should be clearer to us now.

Chapter 1 - Introduction:

Coyote and the Crying Song¹

Coyote once lived on Second Mesa near the village of Shipaulovi². The dove also lived near Shipaulovi. It was harvest time, and the dove was in the field collecting the seeds of the kwakwi grass. To separate the seeds from the stalks, she had to rub the tassels forcefully. But the kwakwi grass was sharp, and the dove cut herself. She began to moan: "Hu-hu-huuu! Hu-hu-huuu! Ho-uuu, ho-uuu, ho-huuu!"

It happened that the Coyote was out hunting, and he heard the voice of the dove. To the Coyote, the moaning sounded like music. "What a fine voice," he said to himself, approaching the place where the dove was working. He stopped nearby, listening with admiration as the dove moaned again: : "Hu-hu-huuu! Hu-hu-huuu! Ho-uuu, ho-uuu, ho-huuu!"

Coyote spoke, saying, "The song is beautiful. Sing it once more."

The dove said, "I am not singing, I am crying."

Coyote said, "I know a song when I hear one. Sing it once more."

"I am not singing," the dove said. "I was gathering seeds from the kwakwi grass and I cut myself. Therefore, I am crying."

Coyote became angry. "I was hunting," he said, "and I heard your song. I came here thinking, 'the music is beautiful.' I stood and listened. And now you tell me you are not singing. You do not respect my intelligence. Sing! It is only your voice that keeps me from eating you. Sing again!"

And now, because she feared for her life, the dove began once more to moan: "Hu-hu-huuu! Hu-hu-huuu! Ho-uuu, ho-uuu, ho-huuu!"

Coyote listened carefully. He memorized the song. And when he thought he had it in mind, he said, "First I will take the song home and leave it there safely. Then I will continue hunting."

He turned and ran, saying the words over and over so that he would not forget them. He came to a place where he had to leap from one rock to another, but he missed his footing and fell. He got to his feet. He was annoyed. He said, "Now I have lost the song." He tried to remember it, but all he could think of was "Hu-hu."

So he went back and said angrily to the dove, "I was taking the song home, but I fell and lost it. So you must give it to me again."

The dove said, "I did not sing, I only cried."

Coyote bared his teeth. He said, "Do you prefer to be eaten?"

¹ I am grateful the publication *Legends of our Nations*, published by the North American Indian Travelling College in 1984, for the stories used throughout this paper.

² For a thorough listing of these names, see: "Selection of Environmental Indicators and Related Community-Based Research Projects: Environmental mapping/place names" by the Mohawk Council of Akwesasne.

The dove quickly began to moan: "Hu-hu-huuu! Hu-hu-huuu! Ho-uuu, ho-uuu, ho-huuu!"

"Ah, now I have it," Coyote said, and once more he started for home. In his haste he slipped and tumbled into a gully. When he regained his footing, the song was gone. Again he had lost it. So he returned to the place where the dove was working.

"Your song is very slippery," he said. "It keeps getting away. Sing it again. This time I shall grasp it firmly. If I can't hold onto it this time, I shall come and take you instead."

"I was not singing. I was crying," the dove said, but seeing Coyote's anger she repeated her moaning sounds.

And this time Coyote grasped the song firmly as he ran toward his home near Shipaulovi. When he was out of sight, the dove thought that it would be best for her to leave the kwakwi field. But before she left, she found a stone that looked like a bird. She painted eyes on it and placed it where she had been working. Then she gathered up her kwakwi seeds and went away.

Coyote was tired from so much running back and forth. When he was almost home, he had to jump over a small ravine, but he misjudged the distance and fell. Now Coyote was truly angry, for the song had been lost again. He went back to the kwakwi field. He saw the stone that the dove has placed there. He saw the painted eyes looking at him.

"Now you have done it," he said. "There is no purpose in looking at me that way. I am a hunter. Therefore, I hunt." He leaped forward and his jaws snapped. But the stone bird was very hard. Coyote's teeth broke and his mouth began to bleed. : "Hu-hu-huuu! Hu-hu-huuu! Ho-uuu, ho-uuu!"

Just that moment a crow alighted in the kwakwi field. He said, "Coyote, that is a beautiful song you are singing."

Coyote replied, "How stupid the crow people are that they can't tell the difference between singing and crying!"

The colours and patterns in my kaleidoscope change with constant expectation. In this search for balance between complexity and simplicity, I am drawn to the remarkable likeness that the dynamic of change within my game shares with the dynamic within community. The constant motion, the search for improvement and the need for balance. I remain the observer, listening carefully to the teachings of community members and reflecting on the accomplishments, challenges and rewards of patience, persistence and people.

Like the craft of the dove, I hope that your reading of my words does justice to the music of the drum; the rhythm and spirit of hope of all those that have helped me. As I commit to paper the knowledge that I have gained through my work on this research, I hope that you will gain too, from the wisdom of those that I have worked with, the experience of their peoples, and their determination to improve the future of their communities. With great humility, I entrust these words to you and encourage you to seek your own "response-ability" in improving the future for all indigenous³ and non-indigenous peoples across the world. Let the seven generations, for whom we do this work, stand as a testament to our successes and as arbiters for our failures.

So, as the thanksgiving address calls us to do, let us now turn our minds to the matters at hand. Since the arrival of Europeans on North American soil over 500 years ago, First Nations have struggled to preserve and protect their heritage and culture. Whether implicitly or explicitly, this battle has been centered around the maintenance of separate and autonomous Nations and the identities tied up in those nationalities. The arrival of a new millennium now offers an opportunity for First Nations to renew their efforts for a return to self-determination. This propitious occasion also offers other Nations, such as Canada, the opening to re-affirm its recognition of independent, self-governing First **Nations** on the North American continent. This rare fortuity offers Native peoples a chance to begin the process of healing, rebuilding pride, awareness and a sense of "being" within their communities. It also offers a camouflage under which governments,

like that of Canada, can act discretely to reverse centuries of discrimination and failed attempts at assimilation.

With the continued attempts to assimilate "Indians" into mainstream Canada, the Haudenosaunee (Iroquois Confederacy) have often lead the struggle to remind the world of its commitments to them and other First Nations around the globe. The strength and will to become an "Elder Brother"⁴ has been derived not from economic domination, military power or religious zealotness. Instead, the strength of the Haudenosaunee is in their resilience, adaptability and respect for other peoples. This ability to act as Elders has allowed them to assert a strong *identity* based on thousands of years of tradition as Nations and 850 years as a Confederacy⁵. However, the projected image of strength, unity and pride at an international level often masks the serious challenges faced by the individual communities of the Haudenosaunee - challenges that threaten the identity fabric carefully woven by preceding generations.

The most critical threat faced by these communities is the degradation of their environment. Pollution, loss of useable land, gold mining, farming, flooding by hydroelectric power dams and loss of access to traditional hunting and gathering

³ I use the terms indigenous, First Nation, "Indian" and aboriginal. While in Canada the term "Indian" has been relegated to the vocabulary of the "politically incorrect", it is still a term of pride to many indigenous nations around the world, the Malecu included. I have chosen to use the most appropriate term based on the context of its use.

⁴ "Elder Brother" symbolically refers to the place of the Haudenosaunee among other First Nations of the world. It is not to be confused with the use of "elder brother" to refer to the Mohawk and Seneca nations, within the confederacy. See, for example, Fenton (1998, p. 27).

⁵ I am indebted to Doug George Kanentiio for his assistance in clarifying this date. Much of the literature (see Fenton (1998, p. 69) for an example) does not agree about this date. However, a close examination of the oral traditions and stories of the Haudenosaunee indicate that the date of formation of the League was clearly August 31, 1142, between 2 and 3 o'clock in the afternoon. The evidence for this date is presented by George in the Syracuse Herald American, May 17, 1998. It is based on celestial events in the area of Lake Onondaga, information regarding crops and the number of Thadoda:ho preceding the current Thadoda:ho.

grounds are but a few of these life-threatening changes that these communities have and will continue to face. The Mohawk community of Akwesasne is an example of one Haudenosaunee community that has faced these threats and is successfully re-defining itself according to the changing world within and around its community. The Maliseet of Tobique and the Malecu Indians of Costa Rica are both examples of First Nations communities that express different “levels” of Naturalized Knowledge Systems⁶, providing us with a glimpse of the process “in action”.

As environmental degradation, threat to identity and tears in the social fabric of indigenous nations is increasing, so too is the sense of urgency for a solution to these problems. This urgency is reinforced by growing concern for the future of the planet. While recent events like hurricane Mitch, el nino and el nina related storms, global warming, ozone depletion and deforestation (as examples) are only symptoms of a greater underlying problem, the media, scientific and government attention massed around these events has helped to focus global attention on our survival as a planet.

The pressing need for action to stop or reverse environmental degradation is strengthened by recent reflections⁷ on the record of First Nations’ protection of the environment. Krech argues that concept of the “Noble Indian” is a construct of western literature, supported by the works of Rousseau, William Woodsworth, Samuel Taylor

⁶ The copyright for Naturalized Knowledge Systems and the NKS methodology is held by the Mohawk Council of Akwesasne and its author, F. Henry Lickers. I am grateful for Henry Licker’s permission to use the NKS methodology in this work. While the legal ownership is retained by the Mohawk Council of Akwesasne, with recognition of their authorship, the dissemination and use of the NKS methodology is encouraged. The intellectual property regarding NKS can then be used by the Council to generate equity for their own community development. See <http://www.peace4turtleisland.org/pages/grandpolicy.htm>.

Coleridge and others (Krech, p. 18). He demonstrates that although the image of the “ecological indian”, recently resurfacing in the environmental campaigns of *Greenpeace* and *Keep America Beautiful Inc.*, is not accurate, that the blame for ecological degradation in pre-contact times is not truly understood solely by examining the actions of “indians”. Instead, it is more reasonable to suggest that ecological disasters in the pre-contact and post-contact eras⁸ are the result a great number of issues, including low population densities, trading and economic pressures.

This theory is supported by First Nation’s own oral accounts of environmental degradation in pre-contact times. In fact, the history of the highlights an awareness of the “over-exploitation” of the environment (for example, see Fenton’s discussion of the need to regularly relocate communities). This over-exploitation is enhanced by the environmental knowledge of First Nations, making them potentially the most “efficient” exploiters of their environment⁹. The very reason, then, for the articulation of the Naturalized Knowledge System methodology is to provide First Nations and non-First Nations communities with the tools to avoid the mistakes made by peoples who have lived on this land for thousands of years (Lickers, 1999).

More and more community workers, academics, First Nations and even federal governments are applauding the potential of the Naturalized Knowledge System methodology to bring about solutions to these global problems. The lessons of using

⁷ For example, see Shepard Krech. (1999). *The Ecological Indian: Myth and History*, W.W. Norton and Company, New York.

⁸ Krech cites the destructive use of fire, and the over-exploitation of deer and beaver populations as case studies to prove his theory.

the Naturalized Knowledge System methodology at Akwesasne and in other indigenous communities has lead critics and supporters alike, to acknowledge it as a clear articulation of a positive world view that values local knowledge/traditional knowledge and demonstrates the “usefulness” of knowledge in bringing about change. More than information about the way the world works, the Naturalized Knowledge System methodology is contributing to bringing about change in the way communities think about their problems and their futures.

While the success of the Naturalized Knowledge System methodology has been broadly established at Akwesasne (as we will discuss later), the challenge (and interest) for researchers is to establish whether the concepts and tools with which it is associated, when stripped of their original cultural articulation (ie: Haudenosaunee) are still successful in motivating change in thinking and restoring community. Of further interest is to establish whether the Naturalized Knowledge System methodology can be applied by researchers that embrace its principles without immersion in the culture from which it originated. Specifically, then, the question to be answered in this paper is how transferable the “bare bones” tools of the Naturalized Knowledge System methodology are both to understanding the role of knowledge systems in community development and sense of “place” and in application to the development of Malecu communities in Costa Rica.

⁹ The ability of a natural system to absorb energy passing through its “conduit” is discussed, as a reflection of system productivity, in Jane Jacobs. (2000). *The Nature of Economics*, Random House, Toronto.

The broader purpose of this paper is to provide the reader with an opportunity to learn, evaluate and embrace the Naturalized Knowledge System (NKS) methodology, applied to the field of community development. Although this methodology has previously been applied specifically to the protection and preservation of the environment (thus, the restoration of "place"), I will also demonstrate that it can be applied to the protection, preservation and promotion of new ways of thinking; of shifting human response to changing environmental conditions in a manner that keeps lifestyle and environment "in phase" together. By demonstrating the interdependence of environment (place) and identity (knowledge of place/way of thinking about place) I will also open the potential of the Naturalized Knowledge System methodology as a way to build and strengthen identity at all levels of community, nation and confederacy. As I will discuss below, this potential is particularly evident in the case of a society which is based in or relates directly with their environment, as is the case with the Haudenosaunee. I will also propose that the Naturalized Knowledge System methodology offers a positive, proactive process which can be readily adapted by any community or nation to re-establish the linkages between environment, politics, spirituality and identity.

Why community development? Why not measure Naturalized Knowledge Systems in terms of the success of biological communities, lack of pollutants etc? As discussed below, this is a result of the essential connection between environment and identity¹⁰ in indigenous (and arguably some non-indigenous) peoples. As this paper will show, the

¹⁰ Here, I will define the concept of identity as the "sum of all conditions that constitutes the expression of a given individual". This definition may be expanded to enclose larger concepts such as group, community, nation or confederacy. For example, "community identity" may be defined as the "sum of all conditions that constitutes the expression of a given community".

Naturalized Knowledge System and the Naturalized Knowledge System methodology can both be measures of the identity of a people, or peoples and their development/development potential as a community. Based as it is on the sum of all socio-economic, environmental, spiritual and historical relationships that exist or have existed in the past, a Naturalized Knowledge System encapsulates the current and potential identities present within the development of a community. Since this sum and its individual parts are all expressions of identity, then identity becomes the essential concept to explain and evaluate both Naturalized Knowledge System concepts and the potential survivability of a nation, community or group.

This critical linkage between “place” and “knowledge of place/thinking about place” contributes to the “political essence” of this paper. Whether viewed as a measure of “social contracts”, the “politics of knowledge”, community development or a form of indigenous nationalism, the Naturalized Knowledge System is an essentially political concept. It is for this reason that advancing the study of the Naturalized Knowledge System is critical to augmenting our knowledge about the way community development works, specifically within indigenous communities. Furthermore, the Naturalized Knowledge System is a potentially useful tool in understanding the political dis/functions of any “community” - corporate, religious or social.

The use of knowledge provided by the Naturalized Knowledge System methodology may allow us to correct inaccurate perceptions and “where [these] valuations rest in inaccurate beliefs” we may be able to “orient [our] advice to the valuations that the people would espouse, were they fully informed” (Rule, p.176).

Beyond the contribution that this paper makes to the knowledge about community development, there lies a strong personal commitment to promote and follow the further

development of the Naturalized Knowledge System. With my introduction to “NKS” by F. Henry Lickers of the Mohawk Council in 1995, I began a personal journey of learning and application of the Naturalized Knowledge System methodology. With Henry’s dedication and commitment, I have been able to apply the Naturalized Knowledge System methodology in Costa Rica, working with the Malecu while learning about Akwesasne’s and Tobique’s experience with the same. The work with the Malecu set the context for this research work, and prompted the expansion of “NKS” research into the field of political science.

Following this Chapter, a description of the methodology used to analyze and apply the Naturalized Knowledge System methodology in this research will be discussed in Chapter 2. In Chapter 3, I will discuss the key elements and specific aspects of the Naturalized Knowledge Systems, differentiating it from Traditional Ecological Knowledge (TEK) and Indigenous Knowledge (IK). I will also illustrate the emergence of the Naturalized Knowledge System methodology from the concepts and practice of Naturalized Knowledge Systems, as it was applied with the Mohawk Nation at Akwesasne.

In Chapter 4, I will consider the broader role of knowledge systems and their value in the development of community and “sense of place”. In particular, I will focus on the role of knowledge in creating communities that are safe for and reflective of their constituent members. The “use” of knowledge, whether in the context of women’s discussion groups, safe urban environments or the urban cultural landscape all parallel

the “use” of the Naturalized Knowledge System methodology in community development. By highlighting the difference between the Naturalized Knowledge System methodology and these other knowledge-based community development approaches, I will open the door to a closer examination of the mechanisms of the Naturalized Knowledge System methodology in Chapter 5.

Chapter 5 will describe the application of the Naturalized Knowledge System methodology in the context of the Malecu First Nation in Costa Rica. Based on a three year ongoing research process, the first phase of this work was funded by the International Development Research Centre and the Mohawk Council of Akwesasne¹¹. I will illustrate how the Naturalized Knowledge System methodology can be used as a substantive tool in the development process and as an evaluative tool in assessing the current development and development potential of a community.

I will conclude, in Chapter 6, with a discussion of the results of my research in Costa Rica. The Naturalized Knowledge System methodology will be assessed from the perspective of the community, the researcher and the funding agency. From this assessment, I will suggest possible avenues for further research about the applicability of the Naturalized Knowledge System methodology.

¹¹ This work was carried out with the aid of a grant from the International Development Research Centre in Ottawa, Canada. My thanks are extended to Bertha Mo, Andres Sanchez and Gilles Forget for their support and patience during this project. The Mohawk Council of Akwesasne (Department of Environment) was pivotal in securing the grant for this work and providing ongoing support. The St. Lawrence River Institute of Environmental Sciences (Cornwall, Ontario) is also thanked (in particular Dr. Jeff Ridal) for their ongoing support and assistance with this project.

Each chapter in this paper will begin with a traditional story from the Haudenosaunee¹². This is done not only out of respect to the traditional stories and teachings of the Haudenosaunee, but also to illustrate the values passed from generation to generation within the oral traditions of the six nations. As with any of the traditional stories in western literature¹³, these stories remain a valuable source of insight into community expectations and a source of teaching for younger generations¹⁴. They also contain the sense of joy that comes from telling stories or listening to them. Here, they are used to illustrate the values learned in doing community work, the importance of following the code of “respect, equity and empowerment” and the enjoyment of telling and listening to the stories of our elders and storytellers.

I have designed this paper to be accessible to community workers, academics and the general reader. While there are, therefore, the requisite references to the literature, given in order to support and confirm my assertions, I seek to make this as much a useful tool as it is a “thought paper”. I trust this will make what follows more enduring, interesting and practical for those that commit themselves to improving the future for communities around the world.

¹² Haudenosaunee is the name of the Six Nations or Iroquois Confederacy and translates as “people of the longhouse”.

¹³ I am referring in particular to the bodies of work produced by the Greek and Roman traditions.

¹⁴ See, for example, *The Importance of Narratives in Understanding: The Passions and Law* at <http://www.tuscaroras.com/graydeer/pages/lawstory.htm>.

Chapter 2

Chapter 2 – Methodology and Definitions

Our Parent's Story: "Why Indians Must Speak Their Native Language"

This is a story about a man and a woman who were married and how they learned of a message from the Creator on how we are to raise our children.

This man and woman wanted very much to be blessed with a child. They were poor, but they knew that a child would bring them much happiness. Finally, after eight long years, the woman happily announced to her husband that she was going to have a child. This brought them much joy. When the great day arrived, a baby girl was born.

The mother and the father both agreed that their child would not be raised the way they were. They remembered that their Indian ways were slowly dying out, and the old people still attended ceremonies, however, they still knew the sacred songs and dances. They knew that people were beginning to change and were slowly losing respect for the language that was given to them.

Because they had only one child they began to spoil her. They loved their daughter so much that everything else was put aside, and all the attention and love went to her. The father bought and gave his daughter many toys and gifts that they really could not afford.

They promised themselves that they would still carry on their Indian ways, but their girl would learn ways of the white man, for it seemed to them that this is the only way that the Indian people would survive.

When the little girl was old enough to attend school, she was sent to a boarding school in the city. They bought her clothes that they really could not afford and they also continued to buy gifts and toys that they could not afford.

They thought they were doing the right thing, but when their little girl was eight years old, she became very sick. She stayed in bed for a long time. Her health did not improve any and one day the Creator took her life back. Her parents were deeply saddened by the death of their only child. They wept and asked the Creator why he took their only possession.

Ten days after they had buried their daughter, she reappeared and delivered a message from the Creator. She told her parents that she met a man on her long journey who asked her what her Indian name was. "What is your Indian song?" he asked. He asked her if she knew how to speak her Indian language, and if she knew her sacred laws. She told him that her parents had never taught her any of her Indian culture.

She told her parents that this is why the Creator had sent her back to remind them and all the other people of the Indian race: that he made us who we are for a purpose; he gave us many gifts which we are to enjoy during our life-cycle. He gave our Indian nations a language which we are to use to communicate with him. He gave us ceremonies which by which we express our thanks. We were given our own native names. This is the name our Creator will recognize. He gave us songs to pay tribute with to all of the life-cycle. He gave us a way of dance to express our joy of living. He gave all this to our people. He also gave us sacred laws which we are to use during our life cycle.

The little girl brought the following message which tells us not to stray from the original teachings. She said, "I will leave you now, for the Creator has taken me home. He has accepted me because it is not the fault of the young ones if the parents do not teach them of the Creator's laws. Tell our people if we are to live as a people, then it is our Creator's sacred laws that we must carry on in order for our nation to survive."

This story I have heard many times from my grandparents and other elders. When this story is told, our elders cry because many of our young people are lost and they have no one left to guide them back to their original teachings.

Like the child in this story, I too, stand at the door of the longhouse. Beyond the deerskin that separates me from those inside, I hear the laughter of children, and the earnest discussions of their parents. The language of the longhouse speaks to me – a sharpened taste of smoke and timelessness, the dampness of earthen floors and the gentle rhythms of food being prepared over a fire. The sounds inside are foreign to my traditions, the language finding my ears untrained to the rhythm and sounds ... and yet, here I stand. I am listening, learning and beginning to understand.

So it is the same with this paper. My value as a researcher is to stand outside community and listen, learn and understand. As Marjorie Green has astutely observed, "[s]cience is a family of practices And practices are by their nature, rooted in community, and permit communication only on that ground. Each science requires from its initiates a long and arduous apprenticeship ..." (Marjorie Grene in R. Trigg, p. 23). I

am prepared to wait outside the longhouse and await the time when respect, equity and empowerment gain my entrance.

The purpose of this chapter is to establish the basis/assumptions upon which the Naturalized Knowledge System methodology has been researched for the purposes of this paper. It is also to define the key concepts used within this discussion, and provide background on the communities of Akwesasne, Tobique and the Malecu.

The Nature of this Research

As with any study in the social sciences, this research was designed to increase our understanding of particular social phenomena – in this case, Naturalized Knowledge Systems and the Naturalized Knowledge System methodology. The goal of this research is to advance the Naturalized Knowledge System methodology as a practical tool which can better our world, and encourage progress towards a brighter future for all peoples. The particular focus in this paper will be the “usefulness” of the Naturalized Knowledge System methodology at the community level, as a tool of community development. As Rule aptly points out, “[s]ocial science can help move us in the direction of such a world by pointing out the possibilities which it offers, and by demonstrating effective means for realizing such possibilities” (Rule 1978: 173). Indeed, that is the goal of this research¹.

¹ For further examples of notions of progress in the social sciences, see also Wagar, Chapter 7, Birnbaum - see pps. 212- 213 in Chapter 3.2 and Pollard chapter 5 “The Challenges of Progress Today” – pp. 185.

As a relatively “new”² expression of knowledge resident in the Haudenosaunee peoples, the Naturalized Knowledge System methodology eludes traditional quantitative studies. This is, in fact, the first “political science” articulation of the Naturalized Knowledge System methodology as applied to community development. It follows, then, that this research project could largely be defined as “laying the groundwork” for future “political” studies of the Naturalized Knowledge System and the Naturalized Knowledge System methodology. While this may raise the ire of those whom classify themselves as from the “western scientific tradition”, it is nonetheless a logical approach to advancing our knowledge of the Naturalized Knowledge System methodology.

Extensive tables, graphs and statistical revelations will, therefore, not be found in this research paper. It is Richard Rorty who captures the danger of this “expert-ised” approach to working with people, warning that “something happens” to those that are “exposed to endless tabulations of income levels, rates of recidivism, cost-effectiveness of artillery fire, and the like – something like what happens to concentration camp guards ... The rulers of the liberal democracies come to think that nothing matters but what shows up in the experts predictions. They cease to think of their fellow citizens as fellow citizens” (Richard Rorty in R. Trigg, p.116).

I do not, therefore, pretend to be an expert in the Naturalized Knowledge System or the Naturalized Knowledge System methodology. However, my first hand experience with

² Indeed, the first “complete” articulation of the Naturalized Knowledge System methodology can be found in Lickers, F. Henry. (1997). “Can’t See the Forest for the Trees: A Native American’s Perspective” in *Biodiversity: Toward Operational Definitions* (The 1995 Plum Creek Lectures). School of Forestry, The University of Montana-Missoula.

the Naturalized Knowledge System methodology, applied with the Malecu First Nation in Costa Rica, allows me to make qualitative observations about the Naturalized Knowledge System methodology from a political science perspective. It also allows me to make suggestions about further qualitative and quantitative political science research in this field. The attempt is made, then, to ensure a balance between expertise and politics. Again, it is Rule who warns us about “expertise”, observing that it is “misleading and dangerous” to accept the “notion that essentially political issues can be resolved by expertise alone, without introducing politics”. (Rule 1978 :14)

Based on these qualitative observations, I will establish “baseline” information about how further research can be carried out in the field of political science about the Naturalized Knowledge System methodology. Before doing so, however, it is prudent to identify some of the assumptions about the Naturalized Knowledge System methodology which informed this research.

1. That the Naturalized Knowledge System methodology is a system of community development based on using locally developed knowledge to improve the “health” of the community;
2. That the role of the researcher in the Naturalized Knowledge System methodology is not as an expert – that is to say that the researcher is present as an observer to “draw out” the knowledge present in the community and to integrate “western” science into this knowledge;

On the context of research, David Rubenstein states that “[t]he family is constituted by the rules that obtain in a given society. The biological uncle may be the social father if societal rules establish him to be. The social scientific definition of the father must therefore be tied to the rules of the society under study ... As there is no game of chess apart from its rules, there is no family, in the social sense, apart from the rules that constitute it” in R. Trigg, p. 55.

3. The researcher is also expected to be or become an active community participant, contributing knowledge, expertise, networks etc; to resolve issues that communities identify as being important – in this sense, the researcher must also step outside their role as “passive observer” and become an “active ingredient” in the research outcomes. These roles are not mutually exclusive and do not imply that the researcher must relinquish credibility as a researcher in order to be an effective community participant. Instead, they must use their own “sweat equity” within the community to establish their credibility based on tangible contributions to community development. Balancing the demands of “objective” observation and “engaged” actor is possible within the Naturalized Knowledge System methodology;

4. That the “use” of knowledge by the Naturalized Knowledge System methodology is comparable to other “ways of knowing” present in the urban planning process, particularly within the processes used to create safe, representative “places” for women (and all others);

5. That the Naturalized Knowledge System methodology has been successfully tested with First Nations in Canada³ - in communities that are relatively stable, both culturally and politically – and that the Naturalized Knowledge System had not been applied with First Nations outside Canada on a nation to nation basis⁴;

It is also important to reiterate the fact that this research is not a report about similar research work that was carried out by myself with the Malecu. That project, while instructive in my understanding of how the Naturalized Knowledge System methodology works, remains a separate research process. I will, therefore, exclude the “blow by blow” recount of that research project and focus on the observable trends in the Naturalized Knowledge System methodology.

In order to perform this research, I decided to begin with a thorough review of the literature on the Naturalized Knowledge System methodology and Naturalized Knowledge Systems in general. Based on the desire to compare and contrast the Naturalized Knowledge System methodology to other knowledge-based development systems, I also conducted a review of the literature in the urban planning and sustainable cities fields. This was done with a particular focus on creating safe “places” in which women can discuss their experiences and issues, on performing safety audits for women in cities and on the representation of cultural history in the urban landscape. Since I had come to the early conclusion that the literature on the Naturalized

³ This research was carried out jointly by the Institute of the Environment at the University of Ottawa, the Mohawk Council of Akwesasne and First Nations communities across Canada.

⁴ The Mohawk Council of Akwesasne has been applying the Naturalized Knowledge System methodology through the International Model Forest program in Mexico since 1991.

Knowledge System methodology was not widespread, I further expanded my review into Traditional Environmental Knowledge (TEK) and Indigenous Knowledge (IK) literature. This was also done in order to differentiate the Naturalized Knowledge System methodology from TEK and IK.

Interviews with F. Henry Lickers about the Naturalized Knowledge System and the Naturalized Knowledge System methodology were conducted by myself between August 1996 and January 2000. These interviews were supplemented by conversations with community members at Akwesasne⁵ and George Haas of the Institute of the Environment at the University of Ottawa⁶. These interviews were followed up by my own visits to Akwesasne, Costa Rica and Tobique⁷.

Definitions

For the reader unfamiliar with the concepts and language used to share knowledge about First Nations, there are some ideas discussed in this research which require elaboration and definition at the outset. For example, while there does seem to be a common understanding of the concept and role of the "environment" within Western thinking, this understanding is foreign to Native scholars. Instead of viewing the environment as a source of resources to be used (even responsibly) by humans, Native peoples view the environment from within, as an integral part of the *source of all life*.

⁵ In particular, Lloyd Benedict of ECOHAWK and Mary Henderson of the Integrated Math and Sciences Curriculum Pilot Project.

⁶ George Haas has worked with the Mohawk Council of Akwesasne for 5 years and was instrumental in the Naturalized Knowledge System pilot project, including the work done with the Maliseet of Tobique. He has kindly provided constant support and information about Naturalized Knowledge Systems.

⁷ My visits to Akwesasne have been constant since 1996; the visits to Costa Rica (the 3 communities of the Malecu) were conducted in September 1997, June and September 1998, October 1999 and January 2000.

The integration of all life and living within “environment” is characterized in the Thanksgiving Address, used to open council and community meetings (see, for example, the first page of this paper). As a form of communal agreement, the Thanksgiving Address⁸ re-affirms the mutual responsibilities that all life forms have to each other, from the water which forms the first environment to the moon which governs the cycle of life (for another example, see also Lickers, 1997). This meaning of environment incorporates economics, religion, and politics into the natural functioning of the world. Again, while the European understanding of “environment” might only illustrate a resource-based relationship with the natural world, First Nations communities bind the corporal, spiritual, intellectual and emotional aspects of life into a wholistic understanding of their world. Cognizance of the interrelationship of all things is key to the philosophy that will be discussed in this paper.

Although one of the goals of this paper is to establish an appropriate definition of community development, created through the experience of the Naturalized Knowledge System methodology, it is necessary at the outset to grasp its basic concepts. These basic concepts are well encapsulated in a United Nations definition: “Community development can be tentatively defined as a process to create economic and social progress for the whole community with its active participation and the fullest reliance on the community’s initiative ... ” (UN, 1955)⁹. While further reflection is not provided for this term here, it is useful to note that the authors of this definition capture what I believe

⁸ The Thanksgiving Address, or “words that come before all else” is typically structured around thanks and greetings for The People, The Earth, The Waters, The Fish, The Plants, The 3 Sisters, The Medicinal Plants, The Animals, The Trees, The Birds, The Four Winds, The Thunderers, The Sun, The Grandmother Moon, The Stars, The Four Sacred Beings, The Enlightened Teachers, The Creator of All Things.

to be the essence of community development. As such, I would define community development as “a dynamic of integrated progress in which ecosystem-based projects, motivated by local initiative, drive responsible practices aimed at strengthening ecological and cultural integrity on community, national and international levels”.

The concepts of “place”, “identity” and “self” are also pivotal to understanding the arguments presented in this paper. Debate about these terms is highly charged because their meanings are often as personal as they are political. In order to satisfy the need for a consistent understanding of these terms throughout this paper, however, I shall define them here.

“The mind springs from a machinery of neurons created according to the genetic blueprint, but it grows in an environment created by the pre-existing culture, which is a particular history embedded in the memories and archives of those who transmit it.” (Lumsden and Wilson in R. Trigg, p. 174).

Delores Hayden suggests that “[i]f place does provide an overload of possible meanings for the researcher, it is place's very same assault on all ways of knowing (sight, sound, smell, touch, and taste) that makes it a powerful source of memory, as a weave where one strand ties in another” (Hayden 1995, 18). “Place”, then, is the collection of memories about a specific area/location which are triggered by these ways of knowing, that are combined into a interwoven sense, feeling or knowledge about that area. “Place” can also be a state of mind, triggered by these ways of knowing, or by thoughts

⁹ This definition is referred to in Lotz, Jim. “Community Development: A Short History” in the *Journal of Community Development*, May/June 1987, p. 42.

or dreams. It is from the experience of “place” that the individual defines the “self”.

“Self” and “identity” are the expression of these experiences through thought and action.

The background and components of the Naturalized Knowledge System are defined in Chapter 3. They are, therefore, omitted here. We now turn to some basic information about the three communities which participated in projects based on the Naturalized Knowledge System methodology and from which I have been able to draw information and analysis about the workings of the Naturalized Knowledge System methodology.

The Three Communities

The Mohawk community of Akwesasne sits on the St. Lawrence River near Cornwall, Ontario. Composed mainly of islands, Akwesasne is a community divided politically by other Nations' frontiers, namely those of Canada (Ontario and Quebec) and the United States (New York State). With a population of about 8,000 people, Akwesasne has a surface area of almost 90 km². The word “Akwesasne” means “land where the partridge drums”. Akwesasne was originally established in 1750 by Mohawks from Kahnawake. Two years later, the canonized Jesuit Saint Jean-François Régis established a mission at this location, leading the Quebec portion of Akwesasne to become known as St. Régis. The residents of Akwesasne have access to their own education, health care, environmental, and recreation services and produce their own print and radio media.

Akwesasne is one community in the Mohawk Nation which is itself but one of six Nations in the Haudenosaunee Confederacy. The member nations of the Haudenosaunee, or the Six Nations Iroquois Confederacy, have existed in what is now known as southern Ontario, southern Quebec and northern New York State for many thousands of years. The name "Haudenosaunee" means "People of the Longhouse". The Confederacy is made up of the Mohawk, Oneida, Onondaga, Cayuga, Seneca and Tuscarora Nations. It is nationally governed by the Grand Council of Chiefs which meets at Onondaga, the central council fire, or capital of the Confederacy. The Confederacy is governed in accordance with the Great Law of Peace¹⁰, or Gayanerakowa.

The Malecu Indians, also referred to as the Guatuso-Malecu, are the smallest indigenous group in Costa Rica in terms of population. The Malecu originally lived in the area near the rivers Frio and De La Muerte, south of and flowing into Lake Nicaragua. Today, they live south-east of that area, in four communities of the river Tonjibe region, six kilometers south-east of San Rafael de Guatuso in the Llanura de San Carlos, Alajuela province. The Malecu have a population of about 590 persons, representing 87 families¹¹. Prior to the 1860s, when non-indigenous people moving south from Nicaragua and north and west from other regions of Costa Rica encroached on their lands, there were at least 12 communities within the Malecu territory. Their

¹⁰ The Great Law of Peace or Gayanerekiowa is the "founding constitution" of the Six Nations Iroquois Confederacy (Haudenosaunee). It is the Peace Maker that brought these oral traditions, codified in wampum belts, to the people of these nations. The Great Law is both the expression of the functions of the Grand Council and a mechanism for the resolution of disputes between the nations. See, for example, Newhouse, Seth. "The Constitution of the Confederacy by the Peacemaker", 1897 with revisions done by Chief Jacob E Thomas (1989), Sandpiper Press, Jake Thomas Learning Centre, Wilsonville, Ontario.

¹¹ This information is from the Iria Tsochok Foundation in San Jose, Costa Rica (1996).

current land base is approximately 600 hectares, representing roughly 22% of the land contained within the Guatuso Indigenous Reserve¹². The schools and health clinics in these communities are operated by the Costa Rican government. The Malecu built and operated a community radio station, which has recently become a commercial radio station, Radio-Malecu. The Malecu are the only surviving indigenous nation in the north of Costa Rica, and represent less than 2% of the indigenous population of Costa Rica.

Part of the Maliseet Nation live at Tobique, New Brunswick. The official name of Tobique, used by the Tobique Nation council, is Wolastokwik Negoot-Gook, or the Maliseet Nation at Tobique. The nation is located near the confluence of the Saint John and Tobique rivers in New Brunswick, downstream from the town of Perth-Andover. The land area of Tobique was 2200 hectares in 1993, hosting a population of 1700 people. The total population of all 7 Maliseet bands in Canada is 3,000 persons. The Maliseet have occupied the area now considered northern New England (specifically Maine) since pre-contact times. Their populations have overlapped with those of the Passamaquoddy and Penobscot nations, often traversing the border between Canada and the United States. Maliseet populations now extend northward into New Brunswick. The community of Tobique has its own school (named MAH-SOS) and its own nation government.

¹² A recent constitutional court decision in Costa Rica has enabled the Malecu to seek the return of the remainder of this land, misappropriated by the government in the late 1970s – early 1980s.

Although these nations are separated by great distances, they share many similarities in terms of their history of oppression by colonizing peoples, their current place within national systems and their desire to seek a better future. Nowhere is this vision of the future better and brighter than at Akwesasne. While the community is not without its difficulties and tensions, its history with the Naturalized Knowledge System and the Naturalized Knowledge System methodology is fundamental to the dramatic turnaround in community development. It is to the history of Akwesasne with the Naturalized Knowledge System and the Naturalized Knowledge System methodology that we now turn, forming the background and theory upon which we will build our discussion of application later.

Chapter 3

Chapter 3 – The Origins and Definition of Naturalized Knowledge Systems – in Reference to TEK and IK

The Prophecy of the Great White Serpent

The Prophecy of the Great White Serpent is known by many Indian nations. This happened a long time ago. Two young warriors who were recognized by their village as being great hunters, decided to go east towards the rising sun in search of bigger game. They hunted until they came across a great body of water. They noticed that the water was different – it was salty. They also noticed something lying on a log, drifting towards them. Something strange, never seen by these hunters before. They began to approach this strange creature, it glowed with a bright silver colour. The warriors thought of this as some being at the same time, in a language that they did not understand. It had a forked tongue. It seemed helpless, hungry and sick, lying there on the log. So they decided to take it home with them, feed it, and give it strength.

They gathered all the dry meat from the game they had killed before, and with their strange creature, headed home. They brought this creature back to the village and showed them what they had found. An old woman came to the people and told them that the young warriors would have to take the serpent back where it came from. The hunters did not listen, instead they built a home for this serpent, away from the village, agreeing they would be the only two to know of the serpent; that it would be their pet. Their serpent was small and weak, so they fed it and gave it medicine to heal. Soon the serpent became strong. The hunters continued to hunt for their people. They soon began to notice the enormous appetite of their pet. They had to stop and give half of what they hunted to the serpent. The people in the village began to wonder why the two hunters were not bringing in as much game as they used to. This was because they were giving most of the game to the serpent. Its appetite was getting enormous and there was nothing they could do but feed it.

The next day, the young warriors called their people together and told them what they had done; that they had never taken the serpent back to where they had found it. They had only taken the serpent over the hill and built a small cage for it. At first the young warriors were giving the serpent insects, birds and rats, then small game like rabbits, raccoon, but now they had to feed it half of the game they had hunted. All the people in the village became alarmed and very frightened of the size of the animal. So the people got together and built a new stockade for the serpent. They all hunted to feed the serpent. Many children went hungry for there was not enough food for everyone. Finally, one night the serpent broke out of the stockade where he was hidden and headed for the village and devoured most of the people, including the two hunters that kept the serpent for a pet.

It went westward to other nations killing many people. The elders couniled together and said that there was only one way to stop this creature. This prophecy is passed on to this day from elder to elder, from grandfather to grandfather. There is a great meaning to what our grandfathers told us, we interpret that prophecy as those belonging

to the white race who first came to our shore, they were weak, sick and it was our people that helped them, cured them, and showed them how to live on Mother Earth. It was the white race (the white serpent) that kept demanding more. At first, our people gave them a piece of land to live on and then later they wanted more. It was the white serpent that began to grow just like the white race that began to grow and more people kept coming, their appetite getting bigger. Today, we look around us, we see that the white serpent has destroyed everything that it has come across. The rivers, lakes, and streams including the air we breath are polluted.

Our elders tell us today, "there is the great white serpent." As the prophecy says, it is our obligation and duty to tell this to the next generation. The great white serpent is here now. It has caused too much destruction. The signs that we were told to watch are here. We must ask our elders now what all this means and what we must do.

The white serpent has certainly caused destruction, leaving the natural world that indigenous peoples have known for many millennia starving for hope, gasping for a future. As the first peoples in this story learned, the white snake devours all. The serpent has stolen the power of knowledge from the first peoples, and literally consumed the people in its race to feed its own needs. The white serpent is now victim to its own destruction. Once again, the serpent is turning to the first peoples, looking for their assistance for survival. The strength of those that have survived, with the knowledge that they have built over the past thousands of years, have become the only way the serpent can survive. The first nations that have been friends since our arrival here still offer their help – but on their own terms. We will not consume their identity with ours, nor take their lands as we have in the past. If we are humble and “wise” enough, we may be brought to listen this time. If we do listen, we may all survive.

As alluded to in chapter one, the Naturalized Knowledge System methodology teaches us to have the humility and intelligence to listen ... and listen carefully. As researchers, we must be mindful that we listen for the benefit of all peoples. We must not (as some

academics and private researchers have) become the “ivory tower” serpent that consumes knowledge for our benefit alone. We must adopt a way of listening that is respectful, equitable and empowering to all people; first nations and immigrants alike. The Naturalized Knowledge System methodology arises out of a 850 year search for such a code – a continuing refinement of community law and practice emanating from the Haudenosaunee.

The need for the Naturalized Knowledge System methodology arises from more than a quest for improved self-knowledge. At Akwesasne, the Mohawk struggle for recognition as a nation, severe environmental degradation, and loss of culture prompted the urgency for a community development methodology that would move beyond crisis management and articulate a vision of the future. More than a system of knowledge, the Naturalized Knowledge System also held the keys to unlocking the potential of community, changing ways of thinking about self and the greater identity of the Mohawk nation.

The potential of the Naturalized Knowledge System lay in the way in which it was applied to solving community problems, building capacity in local peoples, valuing local knowledge and changing thinking and power structures. This application, the Naturalized Knowledge System methodology, arose within the context of a dying community, and brought new life and hope to Akwesasne. The Naturalized Knowledge System methodology is more than simply Traditional Environmental Knowledge (TEK) or Indigenous Knowledge (IK). It is a knowledge-based community development

methodology that has brought great change to Akwesasne and offers great potential for other communities around the world.

The purpose of this chapter is to examine the context in which Naturalized Knowledge Systems was harnessed into a community development methodology. I will discuss how the tension between environmental degradation at Akwesasne and the search for recognition abroad created the urgency for the Naturalized Knowledge System methodology. Once this backdrop has been established, I will review the fundamentals of the Naturalized Knowledge System, comparing it to Traditional Ecological Knowledge and Indigenous Knowledge. I will then describe the principles and tools of the Naturalized Knowledge System methodology, and show how they were applied to different levels of community development at Akwesasne. In conclusion, I will discuss potential for the "bare bones" Naturalized Knowledge System methodology to contribute to community development initiatives in other communities.

An identity loss faced by all

The confines of this paper do not allow for a generalized discussion of the threats to all First Nations' identities in the broadest sense. It is important, however, to note that the concerns and threats to the "place" or identity of the Mohawks at Akwesasne, and the Malecu of Costa Rica are not atypical or unusual. There is, in fact, consensus on the issue of identity erosion amongst all Native peoples as expressed in the literature.

Detribalization, assimilation and annihilation (Delisle 1984, Lyons 1984, Marule 1984, Ryser 1984) are expressions applied to a process that Rudolph Ryser refers to as "The

Great Lie". This great lie is simply that "[i]f indigenous peoples will only reject their own history, intellectual development, language, and culture and replace these things with European values and ideals, then indigenous people will survive" (Ryser 1984, 28).

While this approach to "survival" is flatly rejected by most Native authors and leaders, it has lead some First Nations down the path of integration into European societies. The *successful* assimilation of these nations into *whitestream* America has been accompanied by a collective amnesia regarding the traditions, spiritualities and cultures of peoples that have existed since millennia before first contact (Delisle 1984, Lyons 1984, Marule 1984, Ryser 1984). Even those Nations that have fought the progress of assimilation now face high rates of alcohol abuse, violence and suicide (Adams 1989, 42). As an ethnic "group", Natives have the highest per capita suicide rate in Canada according to research done in 1975 and 1989 (Adams 1989, 42).

Where any vestige of traditional culture is kept by Europeans, it is exploited by tourism and museum promoters as an artifact of real "Indian" life¹. It is not unusual in these displays to see indigenous peoples painted as primitive cultures with barbaric rites (like scalping) and violent, cruel tendencies. Teepees, tomahawks and tobacco peace pipes are a part of the elaborate ossification of First Nations' cultures (Adams 1989). The success of this campaign has been the portrayal of Native culture as backwards and primitive; a culture unable to progress and develop. Again, First Nations have rejected

¹ Recent initiatives by institutions like the Glenbow Museum in Calgary, Alberta, and the Canadian Museum of Civilization in Ottawa, Ontario, have shown a desire to reverse this trend.

the “freezing” of their culture in the past. Caught in the paradoxical balancing of tradition and flexibility, they base their culture on adaptability and change.

Where policies of assimilation have failed to subvert First Nations' systems of consensual politics, kinship and communal ownership (Marule 1984) from the inside out, the effects of materialism, industrialization and commercialism have *de facto* accomplished the same ends. At Akwesasne, the effects of pollution, territorial encroachment and political interference from the outside have had significant social, health, environmental, political and spiritual effects. For the Malecu, loss of land and access to traditional food sources, overcrowding and poor sanitary conditions have had the same effects. The most serious of the many threats to Akwesasne and the Malecu is the deterioration of their “resource-based economics” (Lickers 1998).

“Resource-based Economics”

The practices surrounding resource-based economics are critical to the survival of Akwesasne and many other First Nations (Corsiglia et al. 1997, Lickers 1998, Wismer 1996). Also referred to as *subsistence*² *activities*, these primal industries at Akwesasne (as an example) serve to establish the basis for a healthy national economy. For the Mohawks, these primal industries are fishing, agriculture, hunting and gathering (for example: berry picking). These activities are crucial because they provide a link between person and land - keeping the environment whole. It is impossible to practice

² By subsistence, I mean the procurement of enough for the use of one's own family and community – not enough for sale to others.

these primal industries without knowledge, respect, contact and responsibility between the land and the individual.

Participation by the community in fishing, agriculture, hunting and gathering not only assures the physical survival of the people at Akwesasne. It also teaches critical skills and language that would disappear in the absence of their practice. Fishing, for example, might invoke certain rites and rituals of thanks, preparation and net laying. As they are repeated on each fishing expedition, the communities' or Nations' rituals become a part of the individuals' experience of the activity. Participation in spirituality and identity become one with the activity of fishing.

The preservation of language, too, is a *bi-product* of participation in the primal economy. The best of example of this from Akwesasne might be beaver trapping. Due to the virtual elimination of the beaver from the rivers and streams around Akwesasne, the practice of trapping was discontinued³. As a result, the language used in relation to the rites, rituals and practices of beaver trapping was lost by the community. In order to resume beaver trapping, the community has been forced to re-acquire the skills and language from other First Nations. This example illustrates the fundamental link between subsistence activities, spirituality and language - all fundamentals of community identity.

Anything that challenges these activities threatens to rupture the relationship between a community and its environment. Over time, these threats force the separation of

environment and lifestyle (Lickers 1998). This disrupts the practices, rituals and language which are the basis of and support for the identity of the Mohawks of Akwesasne. As alluded to above, these challenges are many. In order to fully appreciate the extent of environmental degradation at Akwesasne, it is useful to review examples that are related directly to the primal industries described above.

Environmental Degradation at Akwesasne

In the 17th and 18th centuries, deforestation and land-clearing around Akwesasne eliminated habitat for animals (such as the moose), medicine plants and berries. Many of the migration pathways for deer and moose were eliminated as a result of this deforestation. The ensuing overuse of land for large-scale agriculture operations outside Akwesasne has threatened the diversity of plant material in the area and has exposed many of the streams and rivers to excessive organic and pesticide runoff. While the immediate impact of deforestation and land clearing on hunting and gathering is evident, the long-term effects of contaminant transfer through the food chain and overuse of land will not be known for many generations.

In the 1960s, the construction of the St. Lawrence Seaway had wide ranging impacts on the ecosystem around Akwesasne. The habitat for many of the fish traditionally found in this area (particularly Yellow Perch) was dramatically altered to the point of destruction. This was a result of the dredging and filling required for the seaway and

³ In reference to this disappearance, see Krech's *Ecological Indian*.

the resulting changes in the hydrological dynamics of the river at Akwesasne (Buttner 1996, Deschamps and Chapleau 1996, Harper 1996). The same changes in water flow, annual flooding and the elimination of wetlands have greatly affected the trapping practices of the Mohawks at Akwesasne. Furthermore, the exclusion of fish from the Mohawk diet has resulted in high levels of diabetes among all ages in the community (perhaps as high as 60 percent).

In the 1970s, the construction of factories along the river in New York State added to the pollution of the river and the animals that live in it and depend on it for food and shelter. High levels of PCBs (poly-chlorinated biphenyls) and PAHs (poly-aromatic hydrocarbons) in macrophytes, macroinvertebrates and fish point to a very unhealthy river. An even more dramatic impact has been seen in agriculture and cattle farming. The fallout of inorganic fluorides from the Reynolds aluminum factory onto plant material at Akwesasne has caused high levels of fluorosis in both deer and cattle populations (Kent et al. 1996, McLaughlin and Roy 1996). This has resulted in excessive tooth wear and tooth loss for cows. As a result, the cows are unable to eat and face certain starvation. At best, agriculture is impractical at Akwesasne as a result of airborne and waterborne contaminants such as fluoride.

Clearly, then, there have been significant impacts by outside forces on the activities that are critical to the definition of Mohawk identity at Akwesasne. If many of these activities are in decline or neglect due to pollution, degradation or inaccessibility, the challenge is to determine how can the community maintain or evolve their identity in relation to the

changing world within and around them. Meeting this challenge will define Akwesasne in the future and its ability to survive and grow as a part of the Mohawk Nation and Haudenosaunee Confederacy. This internal struggle for identity has been in tension with the external struggles of the Haudenosaunee for recognition. It is to this struggle, played out on the world scene, to which we now turn our attention.

Honouring past commitments

On July 18, 1995 a restoration strategy was presented to the United Nations by the Haudenosaunee (Lickers 1997). For the Haudenosaunee, this presentation was one in a long series of attempts to remind the Nations of the world that they had a responsibility to honour the past recognition of the Confederacy. Indeed, as early as 1923 the Confederacy approached the League of Nations (Sanders 1985, 299) to re-affirm international recognition of the independent status previously accorded to the Haudenosaunee. These actions were repeated in 1954 and 1956 at the United Nations (Lickers 1998). In 1963 the Basic Call to Consciousness was brought to the United Nations. Presentations were made again during the Decade of Indigenous Peoples in 1974.

At each of these opportunities, the Haudenosaunee were ***not*** seeking ***recognition***. Instead, they sought re-affirmation that the nations of the world would honour their past commitments. As this implies, legal and political recognition had been given to the Haudenosaunee by European settlers and their governments. Initially, this recognition

was a reflection of the military and political influence of the Confederacy (Lickers 1998, Scott 1993). "Except where modified by treaty or legislation ... Native peoples presumptively hold full rights to lands in their possession, and retain their accustomed laws and political institution, including a measure of internal autonomy" (Slatterly in Scott 1993, 312). This type of relationship was characterized by treaties like the Royal Proclamation of 1763. In the Proclamation, the King (of England) sets out that First Nations in North America were sovereign and independent even though they were "under" His protection:

... whereas, it is just and reasonable, and essential to our Interest, and the security of our Colonies, that the several Nations or Tribes of Indians with whom we are connected, or who live under our Protection, should not be molested or disturbed in the Possession of such Parts of our Dominions and Territories as, not having been ceded or purchased by us, are reserved to them, or any of them, as their Hunting Grounds (Williams 1993, 78).

This recognition was in place until Nations and Confederacies like the Haudenosaunee ceased being significant regional (military) powers in the early nineteenth century (Scott 1993). Since that time, the governments of Canada and the United States have shifted to policies of assimilation or *integration*. This shift was particularly evident in the United States which decided as early as 1831 to adjudicate disputes with indigenous Nations using its own courts and legal system. In 1871, the United States further declared that it would no longer sign treaties with indigenous peoples but that it would, instead, exercise *plenary power* over all indigenous peoples within its borders (Ryser 1984).

To reinforce the substance of their presentations to the United Nations, the Haudenosaunee have been pursuing the establishment of Nation to Nation relations with First Nations around the world. Most recently, the Mohawk Council of Akwesasne signed a Memorandum of Understanding with the Maya Q'eqchi Nation of Guatemala. This agreement establishes cooperation on trade, cultural affairs, infrastructure and environmental research (Lickers 1998). The Council is also currently working with the Malecu in Costa Rica, indigenous nations in Mexico and other First Nations across Canada (like the Maliseet of Tobique) to reassert their nation-alism⁴.

In essence, by working with others and signing agreements and treaties, the Haudenosaunee are *acting* like a Nation. In this context, other First Nations accord the Mohawk Council responsibilities commensurate with their status as an autonomous, independent Nation. Along with enacting their own laws, maintaining their own policing and conservation enforcement, cooperation with other Nations allows the Mohawk Nation to assert the rights and responsibilities it has for its own people and other First Nations.

The urgency for action

It is within this context of degraded environment, threatened culture and the internal and external struggle for identity that the Naturalized Knowledge System methodology came into existence. The paradoxical balancing of tradition and flexibility was gone –

⁴ In the same way that the Nisga'a are working with the Confederation of Amazon Nationalities.

replaced, instead, with constant crisis management and low morale. In the past, gradual environmental change would have allowed traditions to adapt to species migrations, changing land use patterns etc; Now, however, with an environment that changed radically over the span of only a few years, tradition seemed far from relevant, particularly for younger people who wanted to survive in the modern world. The tradition of responsibility and the struggle for the recognition of tradition were at odds with each other.

"Innate behaviour mechanisms can be thrown completely out of balance by small, apparently insignificant changes of environmental conditions. Inability to adapt quickly to such changes may bring about the destruction of a species and the changes which man has wrought in his environment are by no means insignificant ..." (Konrad Lorenz, 1996).

It was then, in the mid 1970s, that a small group of people, including F. Henry Lickers and Lloyd Benedict decided that their community was faced by either survival or extinction. There was a clear need to construct a community development model that could harness the knowledge of the community and western science to bring the community's lifestyle and environment back into alignment. Discussions, meetings and much reflection lead those like Lickers to the conclusion that the way of peace, the Great Law itself⁵, was more than sufficient direction for the development of this model.

Indeed, this choice of healing path was not incidental or insignificant. The Great Law of Peace⁶ had guided the thoughts and actions of the Haudenosaunee for hundreds of

⁵ It is important to recognize that these discussions are carried on today through research, such as this, that allows the Naturalized Knowledge System methodology to be continually reviewed and refined.

⁶ In essence, the Great Law is a body of knowledge incorporated into the Haudenosaunee way of living since its inception. In its condensed written English form, it resembles a series of treaties, traditions and rituals that constitute the fabric of life for the Haudenosaunee (Williams 1993). In its true offering, the Law is an oral recitation

years. Some of its principles had governed its constituent nations since time immemorial. What was required was a “set of tools”, taken from the Great Law of Peace, that would allow a community to accelerate the adaptation of tradition and reverse the degradation of environment so that their re-alignment could happen over a period of decades, instead of centuries or millennia. Also, a set of “tools” was required that would enable the community to use its natural resources wisely, to avoid repeating costly environmental mistakes seen in the past.

It is to the Naturalized Knowledge System itself that we now turn our attention, and to the description of the Naturalized Knowledge System methodology.

The Naturalized Knowledge System methodology Defined - Theory

The Naturalized Knowledge System methodology represents the distillation of principles and concepts out of the teachings of the Great Law⁷. As its name indicates, the Naturalized Knowledge System methodology is a theory/practice of learning/action which is based on the experientially and experimentally acquired knowledge of a people (Lickers 1997, 1998). By living in one area for an extended period of time, a people such as the Mohawks at Akwesasne acquire an intimate knowledge of the working of their environment. Knowledge of the seasons, water fluctuations in the river, animal migration patterns and the uses of certain native plants are absorbed into the thoughts and actions of the people as they practice the subsistence activities discussed earlier in

lasting one full week (Johansen 1993, Lickers 1998).

this paper. This kind of community that has adapted to its locality is said to be naturalized to its area⁸.

There have been attempts made by researchers to distinguish the Naturalized Knowledge System methodology from other systems of knowledge, like TEK (Traditional Ecological Knowledge) or IK (Indigenous Knowledge). For example, Berkes suggests that TEK 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 resource practices; by and large, these are non-industrial or less technologically advanced societies, many of them indigenous or tribal” (Berkes, p.3). While this is a very ethnocentric and static definition of TEK, it does nonetheless highlight concepts of transmission, relationships and continuity.

Johnson adds to this, arguing that TEK is “a body of knowledge built up by a group of people through generations of living in close contact with nature. It includes a system of classification, a set of empirical observations about the local environment, and a system of self management that governs resource use” (Berkes, p.4). Again, this definition does not adequately explain the Naturalized Knowledge System methodology, but does draw out the possible relationship between traditional knowledge and science, and the importance of self governance.

⁷ See, for example, William Fenton’s recent book entitled *The Great Law and the Longhouse*, University of Oklahoma Press, 1998.

⁸ This basic concept of “place” as the essence of identity is a critical idea, and will be explored in Chapter 4 as part of the comparison between the Naturalized Knowledge System and other knowledge systems.

Mailliot further suggests that TEK is simply “the sum of facts and ideas possessed by a human group about the environment as a consequence of having occupied a particular region over many generations” (Mailhot, p. vi). Like the above definitions, this isolates humans from their environment, does not recognize the dynamism present in Naturalized Knowledge Systems, and only addresses the knowledge as is if it were a two-dimensional map of natural resources.

What then, is a Naturalized Knowledge System? Mailhot (1993) suggests that there are 5 principal elements of Naturalized Knowledge Systems which have been studied in the literature⁹. She classifies these as:

1. The **categories** recognized by a group for classifying the various components of the environment (living or not) and the recognizable organization of these categories into systems of representation;
2. The **empirical data** on the environment; in this case, the location and behaviour of plants and animals, their anatomy, relationships and interpretations of natural phenomena;
3. The **use** made of these plants and animals for any purposes (spiritual, health, commercial etc.);
4. The **system of managing** natural resources – environmental ethics, conservation practices, environmental impact measurement and management; and

5. The **cosmology** of a group – the place of all things in the universe and their relationships to each other.

As a methodology, then, NKS seems very much like a “scientificized” model of traditional knowledge. Indeed, there are many similarities between “science” and Naturalized Knowledge Systems, such as:

- the fact they both result from the same intellectual process – imposing order on what appears to be disorder (Mailhot, p.15)
- the fact they present the idea of an organized body of knowledge – a body of data systematized according to an internal logic (Mailhot, p. 15)
- the fact they both depend on a system of deliberate accumulation of empirical data (Mailhot, p. 16)
- the fact that the search for objective knowledge underlies both systems (Mailhot, p.16)

Notwithstanding these similarities, there are also many differences. Some of these are that:

- Naturalized Knowledge Systems data is generated by resource users and not specialized researchers (Berkes, p.4, Johnson, p.4, Mailhot, p. 16)
- The process of accumulating knowledge through Naturalized Knowledge Systems is much longer than that associated with scientific experimentation (Berkes, p. 4, Mailhot, p.17)

⁹ I am indebted to Winslow’s work for some direction in this comparison.

- Naturalized Knowledge Systems are wholistic, in that they deal with their subject matter as a whole while science breaks it up into small discrete elements – therefore, the Naturalized Knowledge System introduces the concept of integration (Berkes, p.4, Doubleday, p.49, Johnson, p.7, Mailhot, p.17)
- Naturalized knowledge systems have a spiritual component, including the idea that all parts of the world are suffused and influenced by the works of a vital force or power (Black, Doubleday, p.49, Feit).

Theories about Naturalized Knowledge Systems in the literature, then, do little more than delimit the extent of its basic concepts. In a sense they “stake out” the territory into which the Naturalized Knowledge System might fall. Again, however, these definitions are limiting, and insufficient. The following are my suggestions as to what the Naturalized Knowledge System is, based on my own research and observations:

1. Naturalized Knowledge Systems are the sum knowledge of a group of people, based on their long-term residency in a given area – this knowledge is dynamic; changing over time and space. Even with the addition of scientific knowledge, the Naturalized Knowledge System is still intact – it evolves to incorporate new knowledge, regardless of whether it is generated from tradition or modern science;
2. Naturalized Knowledge Systems may also be the knowledge that a place/ the world offers about the way it works – for example, although we may have

forgotten the functioning of certain aspects of our environment, or the environment has been altered drastically, it is possible to reconstitute this knowledge through research, experience and experimentation. Science can play a fundamental role in this reconstitution;

3. The Naturalized Knowledge System is a system of knowledge that integrates environment, culture, language, economics, science, cosmology across all aspects of creation, at all levels and through seven generations;
4. The components of Naturalized Knowledge System existent within a people/place reside at their natural levels – that is to say that, Naturalized Knowledge System components pertaining to the community reside within that community, to the nation, within the nation etc; (see appendix I for the different levels of Naturalized Knowledge System components – when these components “slip” to other places within the equation, the Naturalized Knowledge System is “out of balance”; and
5. As such the Naturalized Knowledge System is an expression of both the environment and identity of a people/ place since the two are indivisible.

From these observations it is possible to distinguish the principal differences between TEK/IK and the Naturalized Knowledge System methodology from a research perspective. TEK and IK are both systems of knowledge, built on the collection and preservation of information. “Good” TEK and IK systems are no more than complete collections of evidence about traditions, rites, language groupings, social structures etc; Often, this collection of knowledge is done by external “experts” and is produced in

academic journals and research papers and accredited to the researcher. In these cases, the researcher is simply “mining” knowledge for their own use, and rarely shares it with the community. In a sense, “good” TEK and IK systems contribute to the ossification of culture – presenting a “snapshot” of a community in the present and projecting it forward.

The Naturalized Knowledge System methodology, build around the concept of responsibility and action, rejects the simple collection of data by external researchers. Instead, it is based on the active use of the knowledge collected by the knowledge producers for the purpose of identifying possible avenues of community development. In other words, the knowledge produced by the continuous occupation of one “place” is continuously collected and analyzed by community members to improve their situation – to ensure that the practice of their traditions are sustainable in the current environment and to ensure that their environment is a reflection of their cultural needs. In this case, external researchers are facilitators, applying their knowledge and networks to assist the community resolve the issues it identifies. Instead of ossifying culture, the Naturalized Knowledge System methodology increases its flexibility and brings it forward into “the modern world”.

The use of “western science” in the Naturalized Knowledge System methodology ensures that information about the environment is understood in the terms of modern scientific language. The ability to express concerns about the state of the environment in these terms provides key elements in the empowerment of the community – the

ability to have their knowledge validated through science and the ability to argue for remediation in the language of the government and scientists. This is also critical to drawing resources to the community from researchers, governments and private industry in order to solve environmental problems and restore the functioning of the ecosystem. Unlike TEK or IK, where the cumulative knowledge of the community rests with the researcher, the Naturalized Knowledge System insists that knowledge reside within the people. A significant amount of energy is dedicated within the Naturalized Knowledge System methodology to ensuring that all community members have the benefit of this knowledge. Indeed, sharing¹⁰ this knowledge among all community members creates the conditions in which individuals or groups can coalesce around a particular issue in order to motivate change, and mobilize resources. Sharing knowledge also ensures that the power to make change is shared within the community.

Although I feel that the above is a fairly complete description of Naturalized Knowledge Systems, in order to truly understand the Naturalized Knowledge System, it must be observed in action, as a methodology of community development. It is to this idea that we now turn our attention.

¹⁰ This sharing can take place through community meetings, conferences, workshops, informal networks, council meetings, schools etc.

Towards an Operational Definition -

The Naturalized Knowledge System Methodology

As discussed above, Naturalized Knowledge Systems result from living on and learning from the place in which we live. In the past, as the environment changed, the knowledge needed to live within that environment also changed. New knowledge would be acquired with patience and long term trial and error experiments. In this way, knowledge of how to live within the environment (lifestyle) remained aligned with the state of the environment.

The Naturalized Knowledge System methodology was designed to incorporate this traditional approach to knowledge with experimentation and inductive reasoning. In this sense, traditional living and western science could be combined to create localized knowledge. As the process of accumulating, using and sharing this information has been applied to environmental restoration and bio-diversity preservation at Akwesasne, it has proven effective in understanding environmental change and reversing environmental degradation. It has also proven to be effective in providing information for the community on how lifestyle, cultural practices, and hunting (as examples) need to be approached in order to maintain (or improve) community health.

From their successes, Lickers and Haas (1997) conclude that the Naturalized Knowledge System methodology is:

1. a way of making existing knowledge more accessible;
2. a critical way to build "in house" scientific expertise, thus reducing the potential of a community to be at the 'whim' of external "experts" – the communication of this expertise and knowledge is critical to ensuring that the power of knowledge is equitably distributed within the community;
3. a valuable source of hypotheses about how nature works, most of which are implicit. Western sciences can formalize these hypotheses and bring their methods to bear in testing them;
4. a valuable source of information related to experimental design; personal experiences of people living on the land can be of invaluable assistance in deciding where, when and how to sample and whom to speak to during research;
5. a valuable source of research personnel; in many instances, the best people in the field will be those with long experience working in the field, albeit not within the standard scientific framework; and
6. a valuable source of information for scientific validation; the key to scientific and social progress is uncovering inconsistencies between what are observations and predictions; Naturalized Knowledge System provides an additional source of data for the testing of scientific and social hypotheses.

To which I would add two further points:

7. a “tool” consistent with all Naturalized Knowledge Systems to restore the knowledge of a people/place, document it for future generations, and benefit from it for the restoration of the ecology, economics and essence of a people/place in a sustainable and responsible manner; and
8. a form of “development” in which issues find their solutions at their natural levels – that is to say that community development issues will be resolved at a community level, whereas national development issues will be resolved at a national level (ie: the scale of the solution respects the scale of the issue).

It is clear from this list that the Naturalized Knowledge System methodology is a valuable tool in scientific work and environmental measurement and management. However, drawing on the strong links between environment, participation in the primal economy and Native identity, it is also apparent that the Naturalized Knowledge Systems methodology is also critical to the restoration of First Nations' identity.

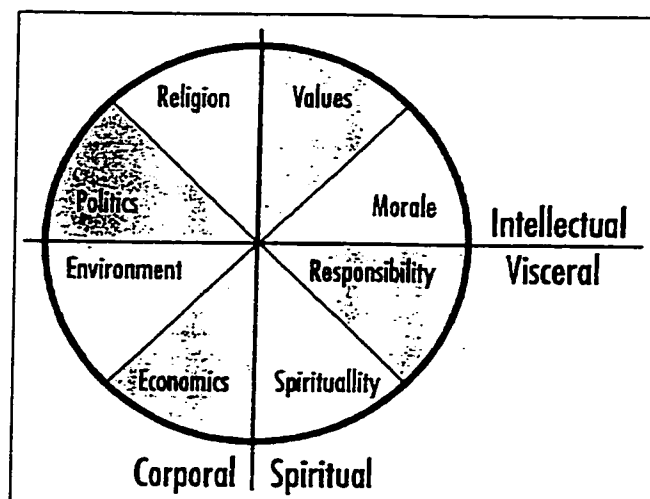
The Naturalized Knowledge System Methodology - The Tools for Community Development

To establish a baseline from which we can draw conclusions about the health and growth of identity in a community like Akwesasne, it is important to determine the level at which the greatest value is assigned to knowledge and activity focused on identity construction and preservation. In the case of an indigenous community, the onion provides an excellent analogy. If the onion represents the community, then the simple

act of peeling back its layers will reveal the role of the individual in this community. If you were to attempt this exercise, it would become apparent that once the layers of the community are stripped back, that there is nothing of the onion remaining. In a First Nation, then, the individual is simply the small 'I' in "community". The community itself is of the first order of importance. All actions taken by families, clans, groups, individuals and the community itself, must be for the betterment of the whole community¹¹.

Based on this analogy, and the principles of the Great Law of Peace, three *indicators* or key areas for evaluating the health and growth of identity in the community might be *heritage*, *ethics* and *place* (Wismer 1996). In the broadest sense, *heritage* is about knowing history and practicing culture (modern and traditional). *Ethics* is about what is important and why it is important to the people. *Place* is about knowing home - its geography, biology, chemistry and spirituality. Within the Naturalized Knowledge System process, there are three fundamental elements which each relate directly to one of the three indicators listed above.

¹¹ I am grateful to F. Henry Lickers for sharing this analogy with me.



The first of these community indicators is the *Life Indicators* wheel (Lickers 1997). As illustrated by the image above, the corporal and spiritual are divided on either side of the wheel while the intellectual and visceral divide the wheel top and bottom. To use this Life Indicator wheel, we choose any function of the community we wish to evaluate and use the opposed concept as an indicator. In terms of the community indicators outline above, the Life Indicator wheel allows us to evaluate the health of the community's *heritage*. For example, if we wanted to evaluate the political health of the community, we would use *responsibility* as its indicator. The simplest example of this relationship is the level of participation in community decision making. If we chose percentage voter participation in the elections as an example of this participation, we would be able to judge that a community where 50% of the voters cast ballots exercises more political responsibility than a community where only 30% cast their vote¹².

¹² For other examples, see Lickers, "Community Health Indicators, An Aboriginal perspective on community health indicators" (report prepared for Environment Canada, April 2000).

In terms of identity, this provides us with an idea of how well the community is participating in the values and activities that inform its identity. With regards to a sense of *ethics*, the Naturalized Knowledge System process offers six basic principles upon which the community can base its values. These are:

**Basic Principles of the Naturalized
Knowledge System Methodology**

The Earth is our mother.

Cooperation is the only way to survive.

Knowledge is powerful only if it is shared.

The spiritual world is not distant.

Responsibility is the best practice.

Everything is connected to everything.

These values relate strongly to the assertion and recognition of the community's identity. While it is possible to relate each one of these principles to the measurement and development of identity, it is not feasible to do so within the confines of this chapter. It is useful, however, to stress the importance of principles (1) and (6). Again, the relationship between humans and the source of all life - the Earth, is fundamental to the definition of Mohawk identity, as is the interrelation of all aspects of life.

While living by these principles enables the Mohawks of Akwesasne¹³ to understand and experience a strong Haudenosaunee identity, the final element of the Naturalized Knowledge System which establishes a sense of *place* may be most useful for an understanding of how identity is built in a community like Akwesasne. As the table in Appendix I indicates, the complexity and comprehensiveness of activities centered around environmental restoration (as an activity that builds identity) increases as we progress from individual to the group, community and nation levels. As we move from left to right on the table, it is possible to see an increase in variables (more factors affecting identity), spiritual certainty, time (measured to seven generations), possible impacts of human intervention (where we can influence the process) and the role of nurturing. At the bottom of the table, listed *in italics* are concrete examples of actions or effects of identity building at each level in the *hierarchy*.

If we were to examine the role of the Naturalized Knowledge System within the context of a particular project, we would need to understand the roles of *respect*, *equity* and *empowerment*. These three tools of the Naturalized Knowledge System methodology dictate the way in which a community responds to ideas and activities it wishes to accomplish. The zeal, or enthusiasm to form a deal or project within a community must develop from the principle of *respect*. The tools of respect are understanding and communication. These tools are used to understand the point of view of the knowledge

¹³ While not all Mohawks at Akwesasne would know about the specific workings of the Naturalized Knowledge System methodology, they would *all* know about the Great Law of Peace, the source of the NKS methodology. It is therefore possible to say that while a growing number of Mohawks are embracing the tenets of the NKS methodology, that indeed *all* Mohawks at Akwesasne are knowledgeable and understand the "Great Way", which informs the NKS methodology.

system and the project proponent. Communication is used to keep the enthusiasm alive. Consensus and mediation processes are used in the decision making process so that as the community and the proponent work together, they begin to honour each others' ways and means of doing things.

The second tool of the Naturalized Knowledge System Methodology is *equity*. In the Western world, this is almost always viewed as money. In a community, however, knowledge, networks, personnel and social/political power are the tools of equity. Equity in the project must be transparent, meaning that all project partners must believe that they are contributing equity of equal value. The community's contribution must have as high a value as the proponent's money.

The third tool of the Naturalized Knowledge System methodology is *empowerment*. Empowerment is the ability to do or accomplish. The tools of empowerment are the tools of application and partnership. In each case, the partners are expected to do what they commit to. Responsibility and credibility are built as the task is accomplished. Early kinds of empowerment work are usually small tasks such as meeting and respect building activities. As empowerment grows, the other tools of respect and equity also increase in value and the enthusiasm to deal or form a long-term partnership grows. A more comprehensive listing of the tools in the Naturalized Knowledge Systems methodology are found in the table below.

Naturalized Knowledge Systems

The Zeal to Deal

Using these Tools	Respect	Equity	Empowerment
	Understanding Communication Consensus Mediation Honour	Finances Knowledge Networks Personnel Social Power	Application Authorship Credibility Partnership Responsibility

Consider the construction of a highway. Two cities located on either side of Akwesasne decide to construct a major highway between themselves to facilitate transportation of industrial goods. They plan to run the highway through Akwesasne without consulting the community. In this case, the community is voiceless - its desires, needs and priorities are not considered in planning the road. In all likelihood, the road will bring unwanted traffic and interference into the lives of Akwesasne residents and seriously jeopardize a valuable hunting ground.

To reverse this process, the community says "yes, we still want the project, but we think it should go around the community and have a small off-ramp into the side of town". The community may also insist on the installation of thruways under the highway to prevent animals from injuring themselves and damaging vehicles on the road. In this case, the community seizes the opportunity to assert its role in the planning and decision making process. Within the community, a particular group may decide that they are interested in the benefits that the project can bring to the community. They decide to act as leaders for the project on behalf of the community. This responsibility

may break down further within the group to a particular family or individual acting on behalf of the community.

With this approach, the individuals and groups within the community build their own confidence and sense of accomplishment. This sense of self-improvement is transferred to the community as the project is completed in a fashion which respects the integrity and identity of the community. Though further research during the planning process, the community may also acquire information regarding animal migration patterns, regional bio-diversity and environmental impact assessment. This enables the community to rebuild its links with and knowledge about their area, re-developing relationships with the environment that may have been ruptured through previous intrusions by pollution, flooding and land appropriation.

The Naturalized Knowledge Systems Methodology – Applied to identity building at Akwesasne

To understand the concrete links between the Naturalized Knowledge System methodology and identity building at Akwesasne, it is valuable to review four areas in which projects are being conducted: education, health, politics and *outreach*. Beginning at the level of the individual, an excellent example of the Naturalized Knowledge System methodology in action is the Akwesasne Math and Science Pilot Project. The goals of this project are to create a curriculum that will (1) help children know intimately the place that they come from and all the life that share that space; (2) teach children about their relationship with themselves, with the land and creation and with others; (3) teach

children the responsibility that accompanies these relationships; and (4) teach that diversity and difference are positive (Henderson 1996). The philosophy and practice of this curriculum are diametrically opposed to Western pedagogical practices.

The history of Canadian educational development illustrates the changing demands placed on the education system. In the 1950s, faced by a growing economy and the need for workers, the school system resembled a *brain factory*. The emphasis in teaching was not creating innovative thinkers but capable workers (Lickers 1998). The 1970s introduced the need for innovation in education, but the mentality of factory-like production prevailed. In the 1990s, we were faced with an environment which favoured innovation with an emphasis on learning technology. The challenge of the current context has forced the Haudenosaunee to ask how they could *create* a person who is capable of living within this knowledge system while respecting Haudenosaunee values. The answer to this challenge has been adaptability and that “if presented with the best facts, the best spiritual grounding and practical applications then people will make the jump and understand that this is the right way to learn and live” (Lickers 1998).

In order to accomplish this, the math and science curriculum integrates Western teaching areas (such as math) into the spirituality and practical experiences that are true to the Haudenosaunee way of living. For example, math might be taught through resource inventories. In this learning activity, students must apply their plant knowledge (learned from their family) with math (concentrations of plant material in a given area) in an outdoors setting. Unlike Western teaching approached which largely adopts the “this

is the right way to do this" approach while teaching facts and then examining memory retention, the Naturalized Knowledge System approach stresses "learning through doing". It is hoped that once the spiritual grounding has been established, the facts learned and the applications practiced that the student will arrive at a moment of "satori"¹⁴. It is at this moment of "great awakening" when the student becomes aware of the value and validity of the principles of the Naturalized Knowledge System. Even beyond this moment, it is incumbent upon the Haudenosaunee citizen to continue laying the foundations of their beliefs throughout their lives. Repeating stories, participating in the primal economy and performing rituals allow the Haudenosaunee the time to reflect on their learning and make their own contributions to their community (Lickers 1998).

While learning to respect and value their identity at an individual level through education, the Mohawks at Akwesasne have also tackled the challenge of restoring and rebuilding identity at the community level. Faced by a diminishing quality and quantity of fish stocks at Akwesasne, the community used the Naturalized Knowledge System methodology to attempt restoration of Yellow Perch populations. Using the Naturalized Knowledge System methodology¹⁵ the community decided to work at all levels to ensure that the integrity of fish populations could be protected and restored. Since this was a community problem, they were able to look "downscale" to the work of one group - ECOHAWK.

¹⁴ Sudden enlightenment.

¹⁵ As defined in the *sense of place* table found in Appendix I.

ECOHAWK decided to take leadership by establishing an aquaculture project¹⁶. This project mixes the breeding and life habits of yellow perch (learned from traditional knowledge) with the Western science of fish husbandry and aquatic chemistry. Looking "upscale" to the level of the Nation, the Mohawk Council has worked with other Nations (Canada and the United States) to establish non-profit research and restoration research agencies such as the St. Lawrence River Institute of Environmental Sciences (Cornwall), the St. Lawrence Aquarium and Ecological Center (Massena, N.Y) and the Eastern Ontario Model Forest (Akwesasne). The goal of these agencies is to work towards river and ecosystem clean-up. At the Confederacy level, the Haudenosaunee have addressed the issues of river contamination and clean-up at the International Joint Commission and the United Nations.

As this example demonstrates, although the principal reaction of restoration was performed at the group level, the community was able to respond at a number of levels to the issue of fish depletion. It was able to assert and build its identity-forming traits at many levels through research, social and scientific action. In the short term, the goal of the ECOHAWK project is to establish a sufficient fish population so that the residents of Akwesasne can resume consumption of fish in a way that honours their traditional diets. The long term goal is to re-stock fish into the river so that fishing and the language, rites and practice that accompanies it can be re-established in the identity set of the Mohawks.

¹⁶ I am very grateful for the time Lloyd Benedict, Director of ECOHAWK, has taken over the past 4 years to discuss this project, and show myself, and others, the benefits of his work.

At a National level, the challenge facing Akwesasne is to re-establish government by traditional council. At this time, there are elected councils at Akwesasne (the Mohawk Council of Akwesasne, Canada) and St. Regis (the St. Regis Tribal Council, New York) and a traditional council called the Mohawk Nation Council of Chiefs. Only the two elected councils are recognized by the Canadian and American governments. This situation has caused unnecessary division within the community about issues like education, gambling and the *path* the community should choose to establishing autonomy. Striving to establish rule by the traditional councils of the Haudenosaunee and their recognition by the Canadian and American governments will allow for the re-establishment of respect, equity and empowerment building decisions within the community¹⁷. If the traditional government is fully restored to their traditional authority, according to the Naturalized Knowledge Systems methodology, responsibility and participation will be re-established at all levels - from the individual to the Confederacy. This system of government will re-construct consensus building at all levels, strengthening the links between politics and responsibility (see *life indicators* chart), participation and spirituality.

At a Confederacy level, the Mohawk Council has been promoting and establishing treaties with other First Nations around the world. As outlined above, this allows the Mohawk Nation to act as a Nation among others, sharing the ways and beliefs of the Haudenosaunee. It also allows the Haudenosaunee to “store” knowledge about their traditions with other First Nations. In this process, the Haudenosaunee teach cultural

¹⁷ Indeed, it is not my intention to say that the traditional council is no longer functional. While it has struggled with many issues over the past 50 years, the council still exists and is the sovereign government of Akwesasne.

activities (such as a dance) to other peoples during their exchange. If the Haudenosaunee lose part of their cultural identity, they know that it continues to exist within the greater conscience and ceremonies of First Nations and that they will have the opportunity to re-learn it in the future. As with environmental integrity, the Haudenosaunee are thinking and acting for the health and benefit of seven generations.

The Naturalized Knowledge System Methodology – Conclusions and Observations for Akwesasne

The Naturalized Knowledge System methodology is a comprehensive and complex process that meets the needs of the Mohawk community of Akwesasne and the Haudenosaunee for the assessment and construction of their identity. It is a process that respects the traditions of the people while offering significant possibilities to re-build or re-create their identity in a changing world. While many challenges face the community of Akwesasne and the Haudenosaunee people in general, the Naturalized Knowledge System methodology has had and will continue to have positive effects on the construction of their identity.

In the past twenty-five years, these effects have been evident. At the community level, Akwesasne now has three environmental divisions working in cooperation with the St. Lawrence River Institute and St. Lawrence Aquarium and Ecological Center to clean up the environment in and around Akwesasne. At the group level, twenty-five years ago, the smell of factory smoke stacks represented the “smell of money”. Now, these same

groups are demanding that factories like Domtar clean up their act. At the level of the individual, more action is being taken to clean up public parks, streams and private properties in the area.

As a whole, the opportunity for the Mohawks of Akwesasne to act within the spirit and practice of the Great Law of Peace as described in the Naturalized Knowledge System methodology is improving. In keeping with the methodology, it is possible to predict that the *full* restoration of identity at the National and Confederacy levels may take decades or longer. Most importantly, in the short-term the Naturalized Knowledge System methodology has restored a sense of Mohawk confidence, pride and self-worth. Being a Mohawk is no longer synonymous with laziness, backwardness and despair. Instead, being Mohawk and Haudenosaunee are proclamations of hope for the future, the declaration of distinct identity and a claim to political, spiritual and National autonomy. It is possible to conclude, then, that the Mohawk community of Akwesasne has moved beyond the "survival" phase and is on the road to regeneration.

It is acting within the same sense of responsibility, that the Mohawk nation decided to reach out to other First Nations in Canada, and around the world, to share their successes with the Naturalized Knowledge System methodology. As discussed above, this "outreach" program not only assists its recipients but also fulfills nationalist aspirations, and provides an opportunity to share and store their culture with others. It also allows for a constant review of the Naturalized Knowledge System methodology.

Since the Naturalized Knowledge System methodology arose specifically from the Great Law of Peace, and the traditions of the Haudenosaunee, the challenge remains to constantly improve its transferability to other peoples, and other communities. It was in this context that the research project developed with the Malecu was carried out. This work, and work with other non-Haudenosaunee peoples allows the “bare bones” of the Naturalized Knowledge System methodology to be tested, and improved upon.

The articulation of a positive vision for the use of knowledge systems, the respect for traditional knowledge, and a methodology built on action is not unique to the Naturalized Knowledge System methodology. Indeed, while the Naturalized Knowledge System offers the only clear articulation of a knowledge-based community development methodology that incorporates respect, action **and** vision, valuable parallels exist in feminist and cultural landscape models of knowledge systems and their use in community development.

In particular, the central concepts of “self” and “place” are shared between the Naturalized Knowledge System methodology, and the use of women’s knowledge systems in creating safe urban centres and safe places for discussion about issues that affect women. They are also present in discussions about creating cultural landscapes in an urban environment that reflect the constituent users of the city. We will now turn to an examination of these other knowledge systems and consider the lessons they offer for the application of the Naturalized Knowledge System methodology, stripped of its original cultural articulation.

Chapter 4

Chapter 4 – “Is America bigger than Howa?”¹

Comparing Naturalized Knowledge Systems as a system of knowledge

The Old Woman's Hair

Since anyone can remember, corn has served the Indians in place of wheat, for they did not know this kind of cereal and used corn flour to bake their bread and sweetmeats. There is a nice Indian legend about the way corn came into the world.

An old woman and her grandson once travelled through the Indian country. No one knew where they had come from nor where they were going, and no one asked the old woman to share their fire, although she asked and begged them to do so. That was a time when almost all the Indian tribes had taken up their tomahawks and warred with each other, so that every newcomer was suspected of being an enemy spy.

“Never mind,” the old woman said to her grandson. “I’m sure we’ll find some good people who will take care of us.”

And they continued on their way, over mountain and prairie, until they one day reached the camp of the alligator tribe. These were very poor, but good-hearted Indians, and they invited the old woman and her boy to their fire and shared the little they had to eat with their guests. Then the Chieftan, Alligator Tooth, spoke to the pilgrims, saying: “You can stay here with us, if you like it, but you should know that we often suffer from hunger. Our hunting grounds are not rich in game, and moreover we have to sacrifice the best prey to the alligators as we do not wish to lose their favour.”

“We shall gladly share your fortune, whatever it may be,” replied the old woman. “In return, I’ll look after all the children so that I should not be entirely useless.”

And so, as soon as the next day dawned, all the hunters left the camp followed shortly afterwards by all the women; only the youngest children were left behind.

True, the children were used to being happy by themselves all day long, and played together quite happily. What they could not do, though, was get their own food, and so they always had to go without until evening, when their parents might bring them something to eat.

Things were different now, with the children flocking round the old woman like chicks round an old hen, listening to her stories. She told them why it was that the earth was covered not only with the soft, low grass but also with tall trees.

“One day the Mighty Manitou wished to stroke the blossoms which fluttered in the light breeze on the slender stems of flowers. But, however much he leaned out of his

¹ During her field research, Katz ironically observes that one of the most precocious children in Sudan asked this question ... to which she responds “I’m no longer sure” (Katz 106).

heavens, he found he could not touch them. They were too far out of his reach. He therefore expressed the desire for the stems to grow until the blossoms touched the palms of his hands. Ever since then, slender pines and firs and maple trees have been growing out of the earth, their excellent crowns touching the skies. All Manitou has to do now is put his hand out and he can stroke them to his heart's content, while their crowns gently wave to and fro, murmuring softly."

The old woman was not merely a fine story-teller – she also knew exactly when the children were getting hungry, at which times she would disappear from sight, to return a little later with a huge cauldron from which there rose strange, appetizing smell.

"This is corn gruel," she explained. "As long as you behave yourselves and do as your told, you will get some every day."

The months went thus by, until the last month – that of the long night – had come and gone. The old woman still kept making her tasty corn gruel for the children, but lately she seemed to be getting more and more brittle, seeming to evaporate slowly like steam over the pot.

One morning she could no longer get up from her bed. She therefore called her grandson and told him:

"My dear, I know that I shall soon leave the world of men, for the corn grains I sowed outside the camp have taken root and will sprout in the spring. I have done my part – now it is up to you and the rest of the children to look after them, to water and hoe them. Otherwise they will not produce a harvest..."

These were the last words the old woman ever spoke. Every-day at noon she gave her grandson a kettle full of corn gruel, but the day when the first ear of corn ripened behind her wigwam she vanished, and no one ever saw her again, even though they looked for her everywhere.

"We shall never see her again," Alligator Tooth told them. "Yet she will always remain with us." "Look," and he pointed to the corn plants all around their camp. "She has changed herself into these plants which she brought to us so that we should never go hungry again."

Thus it was said that the kind old woman repaid the tribe for their hospitality. And since then the Indians tend their corn fields carefully, and when the white hairs sprout from the green ears of corn, they see in them the white hair of the old woman they will never forget.

The people from the alligator tribe learned to value knowledge that came from outside of their community. They learned to see knowledge as part of a dynamic in the natural

world that flowed both ways – from plant to human and back. As researchers, and community workers, we are continually reminded of this dynamic, as we learn from the plants and animals around us, and we see them adapting to our sciences and the uses we place on them². We are also reminded by this story that we need to look to all members of our communities for the knowledge of our world. While men may carry certain knowledge about hunting or rituals, the women hold equally valuable information about how we must live with our Mother Earth in order that we should both survive. The Naturalized Knowledge System methodology instructs us that we must listen to all voices in the community, if we wish to understand the knowledge that we have resident in our men, women, youth and elders.

As discussed in the previous chapter, indigenous peoples possess knowledge which is gained from the long-term residence of their communities within a specific area. Their direct connection to their “place” and their ability to follow the dynamic of environmental change with cultural change, allowed them to retain robust communities where the “self” and the “place” were in harmony. The naturalized knowledge systems methodology has allowed communities like Akwesasne to accelerate cultural adaptation to environmental change and restore the environment in order to rebalance the wholism of environment and lifestyle.

² For example, as we learn more about crop management with engineered crop sprays, and disease resistant crop varieties, we also see the plants becoming resistant to the sprays and engineering their own defense for survival. This is only one example of the dynamic of knowledge exchange between human and plant.

When we turn to non-indigenous communities, we find knowledge systems similar to those discussed in the previous chapter. Indeed, it is equally feasible that Naturalized Knowledge Systems exist within non-native populations – fishermen for example – that have lived in any one area for a significant time and have adjusted their way of living to reflect their relationship with their natural world – the seas, the fish and the seasons of their work (Lickers and Haas, 1998, 1999).

In an urban and suburban environment, where the relationship between environment and lifestyle has been completely ruptured, the Naturalized Knowledge Systems methodology offers a potentially powerful tool for those who desire greater safety for women and greater representation of all cultures within the urban landscape. The purpose of this chapter is to draw out the linkages between the concepts of “self”, “knowledge” and “place” and to discuss the centrality of “knowledge” in the construction of community. By examining the gendered nature of knowledge, I will also show how knowledge can be a critical source of power in the definition of urban places. In conclusion, I will discuss the possible contributions that Haudenosaunee communities and the Naturalized Knowledge System methodology can make to community development in an urban setting.

The Missing Link

Is it possible to live in an urban environment and be an environmentalist? In an environment where resident knowledge systems are unrelated to the functioning of the environment, it does seem difficult to believe that the ‘love of nature’ and ‘love of the

city' can exist in one person. Indeed, Thoreau has doubts that these two worlds should ever meet in one person. Writing in his journal, he proclaimed that

It is very rare that I hear one express a strong and imperishable attachment to a particular scenery, or to the whole of nature, - I mean such as will control their whole lives and characters. Such seem to have a true home in nature, a hearth in the fields and woods, whatever tenement may be burned. The soil and climate is warm to them. They alone are naturalized, but most are tender and callow creatures that wear a house as their outmost shell and must get their lives insured when they step abroad from it. They are lathed and plastered in from all natural influences, and their delicate lives are a long battle with the syspepsia How rarely a man's love for nature becomes a ruling principal with him, like a youth's affection for a maiden, but more enduring! All nature is my bride. That nature which to one is stark and ghastly solitude is a sweet, tender and genial society to another (Henry David Thoreau – April 23, 1857).

Through my own experience, I have witnessed this seemingly irreconcilable dichotomy between lifestyle and environment in urban residents. When asking young people where their vegetables come from, an overwhelming majority respond that their primary food source is the grocery store or supermarket³. Indeed, the lack of experience with the environment in urban settings remains a significant frustration in providing environmental education programs that effectuate change in behaviour among young urbanites.

While this frustration does hold true, there are nevertheless knowledge systems within urban settings that can be "used" in order to bring about positive change in our cities. Broadening the number of knowledge systems valued in the urban planning process will not only increase safety for women and increase the representativity of the cultural landscape, but it may also provide an avenue for the re-introduction of environment into

³ I often encountered this when delivering "hands-on" science education programs in Cornwall, Ontario. The responses from the same ages, living only 10 minutes away in an agricultural area, or at Akwesasne were, expectedly quite different.

the urban lifestyle. Before this can be attempted, we must first understand the interrelationship of knowledge, place and self. It is to this critical linkage that I now turn my attention.

The linkage between knowledge, place and self

As discussed in the previous chapter, the traditional link between the concepts of identity and place is strong in indigenous peoples. We also discussed, briefly, how the Naturalized Knowledge Systems methodology can be used to begin the restoration of this link, when an altered or degraded environment strains the relationship. What then of urban or suburban places? Does this same relationship between knowledge and place hold?

Any attempt to "define" place, self or knowledge should be troublesome. Indeed, the dynamic present in all of these concepts ensures that any definition will be fraught with cultural, religious, even discipline-oriented values (indeed, that is the point). It is Delores Hayden who immediately alerts us to this difficulty, describing "place" as one "of the trickiest words in the English language, a suitcase so overfilled one can never shut the lid. It carries the resonance of homestead, location, and open space in the city as well as a position in a social hierarchy." (Hayden, p.15) While this is true, there are nonetheless, observable "trends" in our references to place that include the concepts of the self and identity. Indeed, "[t]he authors of books on architecture, photography,

cultural geography, poetry and travel rely on “sense of place” as an aesthetic concept but often settle for “the personality of location” as a way of defining it.” (Hayden, p.15).

In the literature, we find these trends in academic and community research from all parts of the “global village”. These trends are echoed in the writing and artistic communities. William Kirk, for example, as the ‘father’ of ‘behavioural geography’ alerted us to the connection, in establishing rules about human geography. When studying the “behaviour of human groups in relation to the environment,” he argued, “it behooves us to reconstruct the environment not only as it was at various dates but as it was observed and thought to be, for it is in this behavioural environment that physical features acquire values and potentialities which attract or repel human action” (Kirk, 28).

The concept of “place” as the site of action is also critical. Hayden, for example, refers to place as an arena where social, material and ideological dimensions evolve in the individual and where this individual makes a choice to “participate in public life as resident of a particular community” (Hayden, p.16). Henri Lefebvre further observes the connection between place (he uses the term space) and the arena where social relations are produced. This relationship works both ways, since “[s]pace is permeated with social relations; it is not only supported by social relations but it is also producing and produced by social relations” (*The Production of Space* tr. Donald Nicholson-Smith (Hayden, p. 41).

The Naturalized Knowledge System tells us to look for definitions of “place” that include the concepts of location, action/time, resource and spirit. With this in mind, we also find the following definitions of “place”:

- a display of the “mass of social images and symbols that suggest the character of the people who will be likely to use a particular place” (Wekerle, Peterson and Morley, p. 4)
- Tuan points out that “places and objects define space, giving it a geometric personality” (Tuan, p. 17) and that “an object or place achieves concrete reality when our experience of it is total, through all the senses as well as with the active and reflective mind. Long residence enables us to know a place intimately, yet its image may lack sharpness unless we can also see it from the outside and reflect upon our experience” (Tuan, p.18)
- Tuan also notes that experience of a specific place affects even the physical attributes of individuals and communities – for example: sailors whose extensive sea voyages result in “sea legs” (Tuan, p. 195)
- “Landscape is personal and tribal history made visible” (Tuan, p.157)
- Wekerle, Peterson and Morley define “environment” (in this case, urban “place”) as being “used in a broad sense to refer to the total set of forces (sociocultural, psychological, and institutional) that define the behavior settings confronting women and reflect the habitual social roles that women are expected to perform in a given setting” and “the physical or “built” attributes of women’s behavior settings – their location, design, and management – and their direct effects on

the lives of women involved in them as residents, patients, students, employees, customers, managers, and so on." (Wekerle, Peterson and Morley, p. 4,5).

- With respect to postmodernist conceptions of space, we have seen a change in the basis upon which planning is now done ... "This reinforces the point that different views of the "ideal city" are not just conceptions of form, or even of social order. They embody distinctive *systems of meaning*, within which prioritizing certain relations makes sense, and socio-spatial relations are conceptualized, and consequently in the way issues are problematised and interventions designed, valued and implemented" (P. Healy, p. 256).

The connection between identity and place is present in novels too⁴. Marilyn Sibley Fries argues that "space and place function within the city novel as symbolic reflections of the author's development of his characters' definition of self." (Fries, p. 38) The function of "place" as definer of "self" is also present in literary works such as *I Know My Own Heart*, *Incidents in the Life of a Slave Girl*, and *Little Women*, in Walt Disney Classics such as *Mary Poppins* and in the writings of James Herriot or Lucy Maud Montgomery.

Fries further demonstrates that in the written "place" of the city novel, tension exists between subjective and objective space. "For, despite the subjectivity determined by the fact that the individual himself defines his own space, there is also an objective level which permits identification and comprehension of others' spaces. This objective level

is based on shared culture and tradition, on the behavior, transferred through the ages, with which a human being interacts with and relates to space" (Fries, p. 42). Here, Fries alludes to the possibility of finding "shared space" within the urban context. This shared place is the space in which community can be created. Community, in this sense, becomes the shared sense of meaning which individuals gain from their experience of the same place. It also implies overlapping knowledge systems, where the experience of the sameness of one place leads those experiencing it to find their knowledge of that place shared with others.

Unlike⁵ traditional communities existing within a 'natural state', the urban and suburban environments exist as "places" upon which the individual and community can clearly express their authorship in a direct manner. In *People, Prejudice and Place*, Wreford Watson demonstrates how planning differences in the New Town area of Edinburgh (post 1765) were a reflection of the change in beliefs from the people that had build the old city. Furthermore, he speaks about Robert Owen, "whose prejudice for a socialized revolution led to the rise in Scottish urban geography, of his planned mill-town, New Lanark. Here, protest had taken form in stone and lime. It was as real as that. People's aspirations for a new way of life had led to the creation of a new place. *Ideas* shaped the landscape ... " (Watson, p. 93). James Rojas also notes the irony that

⁴ Fries notes that "scientists" will not accept novels as a legitimate site for the study of "place", but that as a direct expression of human experience, all art forms express the true essence of place. While she does not state so herself, it is arguable that art represents the "purest" form of this expression.

⁵ This link does exist in a "natural state" but is much more evasive, and develops over a much longer term – 7 generations.

architects have misinterpreted the role of the people in creating “place”⁶ because they look at people as users of space. He insists that “[p]eople are both users and creators of a place ... People activate settings merely by their presence” (James Rojas in Hayden, p. 87).

Within all of these fields, we get a clear sense that the concepts of place, self and knowledge are in constant interaction. In some cases, knowledge creates landscape, while in others landscape forms the basis of knowledge. The self can either be the creator or result of knowledge as defined by the place in which the self exists. The relationship between these concepts is not haphazard or random. Based on the knowledge gained from the Naturalized Knowledge System, it is possible to trace the evolution of the dynamic that exists between place, self and knowledge.

The dynamic of place, self and knowledge

This relationship, as expressed above through the support of writers, academics and community members, is different for different “places” and “selves”. The ends of this spectrum lie in the “natural world” (as discussed with respect to indigenous peoples) and urban environments.

This dynamic can be roughly into the following five periods:

⁶ This concept of creating place has existed in indigenous peoples since creation. Through “dreaming”, individuals can “shift” the meaning of a given place, and exert spiritual (as an example) meaning on that place without physically altering it.

1. In the 'natural world' where people live within the *primal economy*, the "self" is indivisible from "place" – in this setting equilibrium exists between "self" and "place" (either individual place or community place – see onion analogy in previous chapter). In this state, knowledge flows between self and place freely.
2. The "place" of the individual "self" and community "self" is degrading, as a result of a shift in importance (or power) away from the place towards the self – this is expressed in the movement towards specialization within "individualist" systems – for example, the evolution of the United States.
3. The "self" moves away from environment as "place" (through commercialization and industrialization, for example) completely. Place becomes a resource to be used and manipulated for individual or community use. The environment becomes the "other" and the flow of knowledge is from "other" to self. This accompanies the "scientificization" of the world in which humans extract knowledge and resources from the planet. In this state, knowledge is appropriated from the "other" and a relationship between dominant and dominated knowledge system begins – as the "owner" of knowledge, the "self" becomes the definer of the "other" "place". The self builds the place in which its knowledge is expressed through architecture, landscape design etc; – this is clear in an urban environment.
4. A struggle begins as the non-dominant "selves" fight the image of "other" – "self" knowledge is re-valued and re-appropriated in order to be defined as **not** a part of the dominant system of knowledge. This state is exemplified by indigenous peoples, like the Haudenosaunee who have regarded their relationship to the

environment as a clear responsibility, not only for the health of the environment, but also for their own health (physical health and identity). The concept of responsibility is expressed through the re-appropriation of knowledge and responsibility for the natural world and the restoration of the environment as a part of the “self” – in this state the individual “self” and community “self” re-integrate. We are returning, in this case, towards a time when knowledge and place are both defined by a self that has equal responsibility for environment and lifestyle. Knowledge becomes the tool of balancing environment and lifestyle – moving towards restoring both to equilibrium.

5. As a result of the re-appropriation of “self” and the restoration of the linkage between “self” and “place” (through environmental restoration ⁷), the “self” is defined according to its own terms and its own knowledge – in the case of indigenous peoples, the relationship of ‘natural world’ knowledge and the knowledge of the community lifestyle is restored to equilibrium. However, because of external influences, pressure remains on the equilibrium between “self” of the individual and the community⁸. This demands constant vigilance to ensure that power is shared between the forces of self, place and knowledge through the concept of responsibility.

From the perspective of the Naturalized Knowledge System methodology, the above steps in this relationship between “self”, “place” and “knowledge” can be viewed in

⁷ It is worth noting that the concept, in this broad relational dynamic is problematized by the perceived needs of the restoring “self” – for example, the restoration needs of city women (ie: the search for “woman” “self”) is very different than indigenous peoples living on their traditional lands.

⁸ This constant pressure is nicely described and analyzed in Harvey Lemelin’s MA Thesis, University of Ottawa.

terms of increasing pressure (states 1-3) and decreasing pressure (4 and 5) on identity and environment. In states 1 through 3, the environment and the lifestyle of indigenous peoples is in decay. In states 4 and 5, lifestyle and environment are in recovery, albeit along different pathways. The potential energy of the system to generate positive community development is on the decline in states 1, 2 and 3. In states 4 and 5, this potential energy is restored. This is mirrored by a decrease in the spirit (and spirituality) of the community in states 1-3, and its restoration in states 4 and 5.

Through further analysis of this dynamic, it is possible to observe that both time and knowledge become the determinant variables. This means that it is possible that time or knowledge can determine the progression from the original wholistic state towards environmental decay and social deterioration. It is also clear that knowledge can be an effective means of restoring a state where self, place and knowledge are once again in equilibrium. What is not clear (here, or in my own experience and research) is that the passage of time will allow lifestyle and environment to re-align themselves. In other words, while the passage of time allowed for sufficient adaptation of the self and knowledge to a changing place (as discussed in the previous chapter) in the past, this no longer holds true. A methodology that actively restores place, self and knowledge together is needed in order to ensure this equilibrium is maintained.

We can also observe that knowledge and perception of self are lenses through which we experience place (and vice versa). Gendered knowledge systems, then, hold great significance in understanding how women can experience the same place differently. In

particular, understanding gendered knowledge systems and why they exist can help us to understand why women find some places unsafe, while the same places are not perceived to be dangerous for men. This same understanding can give us clues to how we can open urban planning to more knowledge systems, ensuring greater safety and accessibility to all city users.

The experience of place

What then of the different experience of “place”? As alluded to above (Tuan, Healy and Rojas as examples), different experiences of “place” results in different “selves”. In the case of the urban environment, for example, a woman that experiences violence against her “self” in a certain part of the city will necessarily associate that part of the city with the “other” – as an expression of foreignness to her own desired experience of that “place”. There is ample evidence in the literature that the same differentiation of “place” occurs in all environments (for example, see Hayden, Katz, Goldberger et al. and Tuan as examples). In this case, our interest is that experience of “place” based on gender.

It is evident in the literature that much of the difference in spatial experience is based on gender, as a result of different roles that women have traditionally held in societies. Indeed, “[t]here is much in the research that points out that indigenous knowledge systems are gendered, and that within women’s indigenous knowledge systems are understandings ... that are extensive and would be valuable to the rest of the world ...” (Malcom, p. 3-4).

While Daphne Spain's observations support Malcom's assertion, she adds a critical twist to the role of gendered knowledge in communities. She theorizes that "... to the extent that task differentiation is accompanied by spatial segregation that gives women and men differential access to knowledge, women should have lower status" (Spain, p. 83). Although her research demonstrates the spatial relationship between knowledge and gender in indigenous peoples, it does not focus only on place. In fact her work (with reference to the Haudenosaunee) demonstrates that some spatially integrated peoples share in the power of knowledge while others do not (Spain, p. 95).

While her research does not draw a conclusion about why spatial integration or separation is only partly determinant of social status, she does provide some valuable clues to this equation. Indeed, when her work is reviewed in light of our knowledge as a result of the Naturalized Knowledge System, statements such as: "[w]hen the transmission of socially valued knowledge is institutionalized in a separate place, the degree of gender stratification is greatest" (Spain, p. 78) become very revealing. In fact, what she is arguing is that the social power to define place is critical. Power, then, becomes the pivotal concept around which value is placed on specific kinds of knowledge that arise from specific places. Access to power defines what knowledge systems are valued in any community, and the valued knowledge systems determine how the place and the self are defined.

Cindi Katz demonstrates that the inverse holds true as well: that access to place can have an impact on the value and power of different knowledge systems. She explores the limits placed on girls and boys in different “spaces of knowing” in rural Sudan and American cities. She demonstrates that despite our beliefs about the limits placed on women in Sudan by Islam, that girls in American cities are actually more limited in their spatial movement and therefore access to knowledge. For Sudan, her “research indicated that boys and girls alike shared a rich geographical knowledge that included an understanding of local spatial relationships and an extensive knowledge of the local environment and its resources” (Katz, p.90). In comparison, girls in American cities had fewer opportunities for “grounded” learning ...”. Their access to the outdoor environment is limited largely by parental concerns for their safety – both physical and psychosocial” (Katz, p. 100). Ironically, boys have wider range, and exposure to risk, despite the fact that research and statistics show they are just as likely or more likely to be hurt “ (Katz, pps. 103-104).

Katz argues that the resulting difference in spatial experience leads to the fact that boys tend to exceed girls in spatial and mathematical ability, their cognitive and mapping skills are more developed and they are more advanced in related analytical functions⁹. These observations bring her to the conclusion that the girls limited access to spatial knowledge left them at a disadvantage compared to their male counterparts. In this case, then, access to place determines who has the power of knowledge, and

⁹ To support this assertion, Katz cites Nerlove, Munroe and Munroe 1971; Saegert and Hart 1978; Harris 1981; and Liben 1981.

consequently places those with “better” knowledge in the position to define place and self.

The lesson from these observations is that there is a need to take into consideration the specific knowledge of women, and their experience of place, when considering the planning of urban and suburban settings, and the development of research projects¹⁰. Providing womens’ knowledge systems and, indeed, all knowledge systems with the **power** to define place within the urban context will ensure planning and implementation processes that value all knowledge equally and strive to restore a common sense of self in the city place. It is to the specific knowledge of women that we now turn, and the possible application of their knowledge in planning “safer” urban places.

The Specific Knowledge of Women and its Application

As discussed above, the connection that we have to place, and the gendered nature of that experience of place necessarily leads to different knowledge resident in any population. It also leads to different abilities (based on power) to define place. Where these knowledge coincide with the domains of dominant and dominated populations within one place, one of these knowledge systems is under pressure – possibly even threatened with extinction. This is certainly the case with the knowledge of indigenous peoples – where their lifestyle (culture), place and knowledge become submerged in the dominant discourse of western/white culture, and their self becomes blurred with the

¹⁰ See, for example, *Assessing the gender impact of development projects* by Vera Gianotten, Verona, Groverman, Edith van Walsum and Lida Zuidberg – 1994.

other. Returning to the dynamic discussed above, these people pass through states one to three, but are not able to restore the balance with states four and five¹¹.

The same dynamic is present in populations of women in urban and suburban settings. As the authors of *Knowledge, Difference and Power* note, “[w]omen’s ways of knowing are very much situated in the lives of the women... (we) ... studied, and the contrasting dominant epistemologies are situated in the lives of men” (Goldberger et al., p. 434). Again, the reference to power in comparing the value assigned to different knowledge systems is key. The implication of this power differential is that a greater value is placed on the self of men – and that that self becomes the dominant image upon which place is defined and shaped in the landscape. Place is man. Man is power. Women are invisible, voiceless and un-represented.

Reversing this power differential is key to restoring a stronger sense of self, redefining the value of women’s knowledge and bringing power to their fight for access to safe urban places. In her essay entitled “Public Homeplaces”, Mary Field Belenky examines the knowledge systems present in mothers of young children, living in rural poverty and being served by social agencies. Referring to these social agencies as the “Invisible Colleges” of knowledge for these women, Belenky examined the effects on these women of creating “safe places” for them to discuss their issues and experiences.

¹¹ The forces that make this determination will be discussed in Chapter 5 in greater detail. It is worth noting, however, that the equation that is “broken” at this crucial moment is the lack of rights being accorded to the people by the system so that they can carry out their responsibility to the earth.

At the outset, Belenky and her colleagues note that these women tend to fall into the "Received Knowledge" and "Silenced" categories. "Women who held the Received Knowledge perspective, for instance, believed that they can *only* get knowledge from listening to authorities. ... Needless to say, this is very likely to be reinforced by authorities who believe people ought to take directions from others and remain in subordinated positions. ... The Silenced see words more as weapons than as a means of passing meanings back and forth between people. They do not believe themselves capable of understanding and remembering what the authorities or anyone else might say to them; they do not feel capable of articulating their own thoughts and feelings to others" (Goldberger et al., p. 394). Again, in reference to the dynamic discussed above, these women have become part of a dominated knowledge system, powerlessly accepting meaning, value and knowledge from the 'other' – most often men.

One of the projects operated at the social agencies studied by Belenky was the "Listening Partners" project. The focus of this project was to provide women with a "safe" place (both physically and psychologically) in which they could discuss and recognize their own knowledge. "By naming and celebrating the strong points, they helped the women become more aware of what was already in place to build on" (Goldberger et al., p. 395). Starting from these small successes, the program was able to document the knowledge resident in this community and seek uses for its knowledge. "Relationships (that) there were consistently characterized by dialogue, reciprocity and mutuality" (Goldberger et al., p. 395) allowed the women in these programs to seek

support from and offer support to their peers (Goldberger et al., p. 396), offering a valuable source of empowerment for the participants. Long term solutions were sought for the complex problems facing the women (Goldberger et al., p. 399), as were opportunities for the women to develop their powers of thinking.

The results of this approach were clear. "The invisible colleges seemed to be enabling women to claim their powers of mind, and this could be documented by tracing changes in their ways of knowing. Women who had a better sense of the power of their own minds seemed more likely to think of their children as active, thinking people who struggle to make better meaning of their experience in the world and better life choices" (Goldberger et al., p. 396). Furthermore, there was evidence that the participants left the program with stronger listening, thinking, and communicating skills, providing them both the impetus and tools to further their own development (Goldberger et al., p. 403).

Rachel, one of the participants in this program observed "I have changed. I have a better outlook on life. Knowing what I want out of life. What I want to do. I've made a lot of decisions and I'm going to go through with them. I had to figure out how I wanted to live my life" (Rachel in Goldberger et al., p. 403). Not only did she discover that she was smart and that she had as much right as anyone else to use her mind but she also learned that "listening to the words of authorities was only one way of gathering knowledge" (Goldberger et al., p. 402). Rachel, like the other women in this program had re-appropriated her own knowledge, and was committed to re-asserting her "self"

by finding value in her own experiences of her “place” in the world. In this place, her power had been restored to define her self and her own place.

The programs in “Invisible Colleges” enable women to find a “safe” place in which their true “self” may emerge above the pressures of the dominant male “self” present in their world experiences. Sara Evans and Harry Boyte (1986), both political scientists, refer to these “Invisible Colleges” as “free spaces”. “Free spaces, they argue, enable people to learn a new self-respect, a deeper and more assertive group identity, public skills, and values of cooperation and civic virtue ...” (Goldberger et al., p. 407). Clearly, then, these safe places/free spaces offer more than a benefit to the individual participant, but serve to increase the democratic participation of women in society at large.

The momentum created by these programs, is where women learn to empower others, “cultivated through continuous reflection on highly valued work and the creation of a subculture where the ideas can be discussed, solidified, and taught to the next generation” (Goldberger et al., p. 416). Not only do these women become “co-constructors” of knowledge¹², they also become the co-constructors of their communities’ past, present and future. “The neighborhood women began to ‘do history’. In a long series of conversations they articulated how things really *did* work in their neighborhood, how they *had* worked in other times and places, and how they *should* work To bring the community more in line with the common visions they had

¹² The educator Paulo Freire (1970) argues that the emancipation of the oppressed is a two-step process: the poor must become co-constructors of knowledge and “take a critical stance toward those who would deny them the right to name the world as they see it” (Goldberger et al., p. 427).

articulated to each other, the women began developing one action project after another" (Goldberger et al., p. 421).

These women, as others in urban cities, no doubt discovered that a safe place for thought and communication was valuable to the re-construction of their own knowledge systems, but did little to allow them the freedom of access to the greater range of knowledge systems across their urban "homelands"¹³. Their desire to participate in the broader place of the city was still out of their reach, frustrated by the power of others – men. Although they had re-taken the power to define their own immediate place, the remainder of the urban landscape was foreign, unsafe and beyond the access of their knowledge systems.

To reinforce this pivotal relationship between place and power, Cindi Katz argues that "safe access to the outdoor environment in (urban) United States is becoming a class privilege, available to children whose parents can afford childcare, safer living environments and/or special programs" (Katz, p. 100). She argues that the decrease in children's autonomy in Western urban centres has resulted in a drop in the quality of their lives, and the creation of "an arena of deskilling with long-term implications for both the children and for the society as a whole"¹⁴ (Katz, p. 100). Wekerle, Peterson and Morley concur with Katz, observing that "... formally segregated environments are, in fact, a less common cause of the concentration of users of one gender than instances

¹³ It is also important to note that the creation of "free space" or "safe place" necessarily begins with children in the school and home setting. Waiting for adulthood to value the knowledge systems of women in the community is somewhat akin to putting the horse behind the cart ... (I deliberately change this saying).

¹⁴ She refers to Hart 1979, 1986; Carbonara-Moscatti 1985; Torell and Biel 1985; Katz 1991b to support her claim.

of “segregation” created by social pressure or accepted practice in environments that are supposedly ‘mixed’. Such constraints include the traditional limitations on women’s mobility in remote areas or at night – their withdrawal from “environments of risk” – like inner-city streets, parks, some bars and sporting events ...” (Wekerle, Peterson and Morley, p. 6).

Class, social pressures and gender are some of the characteristics that define the power structures which deny the access of some knowledge systems to the defining of self and place. Power and place become central to the need of women, cultural communities and ethnic and national “groupings” to ensure that urban places are accessible, recognizable and safe.

The Urban Planning Process

Arguably, then, the problem with urban areas originates with a planning process¹⁵ that does not reflect the experience, knowledge and “selves” of the cities users: “From the traditional planning perspective, women’s needs or changing roles are secondary, even though women are often the majority of clients” (Leavitt, p. 229). Furthermore, “Safety from violence, whether it be in the home, in the workplace, or on the street, has not generally been a consideration in post-war urban planning” (Whitzman, p. 89). These traditional planning processes assumed that a *single* public interest existed for all of the cities users, and that experts and public officials could resolve this interest into a common vision or political set of goals (P. Healy, p. 252). As a result, women and men

¹⁵ Here, I have made the “leap in logic” which presumes that the urban setting is one in which the “place” is more created by one knowledge system, reflecting the “self” of the dominant knowledge system.

are “planned” into their respective spheres; women the private sphere of the domestic home, as child-bearers and shoppers, and men in the public sphere of the market, as creators, political figures and breadwinners (Wekerle, Peterson and Morley, p.8).

Spatial segregation in the urban (and arguably all) “places” engenders a great social cost for women (Wekerle et al., p.12), and clearly illustrates how the urban planning process to date has excluded women's experience, limited their access to all parts of the city and barred them from the public sphere. Robyn Dowling points to the same trends in suburban planning – demonstrating that “place” is a socially constructed concept in a suburban setting. Again, as man becomes “place” and environment is forgotten, “place” become less natural, more socially constructed and anthropocentric. Recognizing that the planning process should “involve ... developing ideas, explicitly and implicitly about what places should and could be like, and about appropriate processes for debating such questions” (P. Healy, p. 252), women's organizations have mobilized around using women's knowledge of the city to make “safer places” a reality.

These Urban women's movements are “movements for control and management, emphasizing a more participatory process; they are defensive movements created to maintain a quality of life with a focus, increasingly, on violence against women and urban safety” (Wekerle 1996, p. 137). Seeking more sustainable cities, where absence of poverty and violence figure as key elements (Wekerle 1996, p. 138), these groups demand greater access to resources, decision-making, and city planning processes. They use their community, ethnic and family networks to organize, expanding beyond

the local area to bring regional, national and global resources to bear on their effort (Wekerle, pps.139-141).

In Europe, a "gender aware approach" to urban planning has been advocated based on "respect for differences between people" and "the participation of the inhabitants (women and men) in decision-making concerning their living environment" as a basic conditions in the planning process. Further more, this approach argues that women should be involved as professionals in the creation of the built environment (Kerlingh et al., p. xv). The bottom line for these approaches is a need to "see to it that women also have the means to access knowledge necessary to be actors in development not just the objects of development" (Malcolm, p.5).

A Canadian example of one such movement is Women Plan Toronto. Their projects have "included participatory action research on women's fear of violence and proposals to make the city safer to women ... The goal has been to make women more knowledgeable about planning processes and to involve women in decision making about planning in Metropolitan Toronto" (Wekerle, p.141). Mobilizing resources to resolve issues of access to safe urban "places", adequate public transportation and housing and clean resources, have made women "agents of change".

The Toronto Safe City Committee lists these principals as part of their guiding philosophy:

1. "Safer for women, safer for everyone." – crime and fear of crime are gendered, so if crime and violence against women are eradicated, the city will be a safer place for all people; **this is the concept of respect**
2. "The process shapes the result" - participatory planning and an active evaluation process form foundations for the planning process; **this is the concept of equity**
3. "There are no simple answers" – integrate design improvement and community development for long term success; **this is the concept of empowerment** (Malcolm, p. 89)

Since it holds that whether "working for government or private concerns, planners help create public and private urban spaces" (Whitzman, p. 93), planners must take gender into account if they wish "to be effective in their measures to reduce insecurity and promote safety" (Whitzman, p. 93). By doing this, planners can make violence in an urban setting the exception rather than the norm (Whitzman, p. 105-106). Even while we live in an age of cost reductions and rationalization, it can be argued that making cities safer for women makes them more attractive to investment, rewarding municipalities and cities with greater resources (from taxation and development fees) for necessary social programs (Whitzman, p. 96).

One danger exists. In the current era of "downloading" between national, regional and local governments, voluntary organizations and community organizations must be vigilant against a government that is willing to "pass the buck" without "passing the bucks" (Whitzman, p. 96). Clearly, the process of actively involving women in the planning process and incorporating their knowledge of the city, its dangers and "risk

environments" must be accorded the resourcing required to meet this challenge with success. Only then can the planning process incorporate the knowledge system of all communities of women city users, and ensure their safety and access in the city.

If suggestions such as those offered by the Toronto Safe City Committee are followed and resources are applied to these processes, the knowledge of women will be valued by the city designers. The incorporation of women's knowledge will ensure that the city becomes a "place" of safety for all women in which each of them as individuals, or as members of a particular community can "find themselves" at home. It will also ensure that knowledge systems other than those of "white male middle-class" planners will have the power to define city places. Indeed, these urban areas will be safer and more welcoming to a greater diversity of peoples.

Since urban areas tend to be the sites of great cultural, racial, linguistic, sexual and religious diversity, there are clearly other "knowledge systems" that overlap those of women and men. Adding the issues, ideas and "other" "selves" to the knowledge used in planning urban and suburban environments will undoubtedly increase the complexity of the planning process¹⁶, but will also provide greater access to the urban environment for all peoples. An excellent example of another knowledge system which is necessary

¹⁶ Indeed, the complexity of any policy process is increased when multiple voices are added to the chorus of demands placed on local, regional or national policy systems. The danger of the over-complexification of this process is that it creates a risk that all groups or individuals could establish uniqueness, arguing that they are not "knowable" by others. In this case, it is conceivable that a proliferation of un-know-ability will result in the inability to seek common knowledge and policy (Goldberger et al., p. 163).

for a urban planning process with integrity is discussed in Delores Hayden's *The Power of Place*. Hayden addresses the need for access to race, ethnic and cultural knowledge systems to ensure that urban centres reflect the experiences of the "other" "selves" using the city. It is now to this that we will briefly turn our minds.

The Power of Place

Hayden underscores the necessity of recognizing and using the knowledge of all historical segments of the urban environment to create cities that reflect their inhabitants. This is perhaps best captured in her declaration that "[t]he traces of time embedded in the urban landscape of every city offer opportunities for reconnecting fragments of the ... urban story" (Hayden, p. 13). In this longer citation, she neatly sums up the connections between "place", "memory" or "experience" of that "place" and the sense of "self" or "identity" created by this "place":

"Public spaces can help to nurture this more profound, subtle, and inclusive sense of what it means to be an American. Identity is intimately tied to memory; both our personal memories ... and the collective or social memories interconnected with histories of our families, neighbors, fellow workers, and ethnic communities. Urban landscapes are storehouses for these memories, because natural features such as hills or harbors, as well as streets, buildings, and patterns of settlement, frame the lives of many people and often outlast many lifetimes. Decades of "urban renewal" and "redevelopment" of a savage kind have taught many communities that when the urban landscape is battered, important collective memories are obliterated." (Hayden, p. 9)

Hayden returns to the notion of memory and experience lived by different parts of the urban community as a fundamental part of restoring the "health" of our cities. As discussed above and in the previous chapter, the linkage between the experience of "place" and the connection of "self" to that place, is critical in creating the planning environment needed to value all knowledge systems and to pursue responsible

planning processes. In this sense, Hayden is also advocating the creation of culturally, ethnically and racially “safe” urban places in which the “self” and “other” find each other in “place”.

Hayden is also supportive of the need to actively embrace local history and engaging in “community-based ways of working with the physical traces of the past beyond its preservation as museums or adaptive use as real estate.” (Hayden, p. 61). Taking care of our history by establishing community priorities, working with all community members, and binding discussion of place with defense of the natural environment¹⁷, she argues, is a building block in the restoration of “whole” urban environments.

Patience, long term commitment and “exploring what it means to remember” will allow us to determine what to “do with memories to make them alive and active, as opposed to mere objects of collection” (Michael Frisch in Hayden, p. 246) “and learn to build with memory rather than against it” (Hayden, p. 99).

This approach to planning the urban environment is the pathway to “peace” in the city. Hayden suggests that finding a common “self” in the urban “place” will allow us to focus on commonalities and our differences, allowing us to map out a new city in which we all find reason to work together with our neighbours and our neighbourhoods (Hayden, p. 247).

Conclusion

Knowledge systems exist, then, in all populations. These knowledge systems tie our experiences of place to our definition of our own identity. When there is a disconnect between “place” and “self” it is often as a result of de-valued or de-graded knowledge systems existing within a dominant/dominated relationship. In other words, place **and** the power to define place, both serve to delimit concepts of identity within different urban populations.

As noted above, it is possible to have different knowledge experience, and therefore a different sense of identity, without acquiring different values attached to these “knowledges”. This is the case with the Haudenosaunee, where a strong matriarchal, matrilineal and matrilineal society keeps the knowledge systems at levels of equal value. Arguably, this is also the case because the defining sense of “place” is acquired from a balanced relationship with the environment, in which respect, equity and empowerment determine a shared experience of “place”. Although their knowledge of that “place” is different, men and women still share the same “place” and find their “selves” within it.

In an urban setting, where the natural world is no longer the binding factor, human society creates “places” which are fragmenting sense of identity and “self”. As knowledge systems resident in populations become increasingly divergent, based on divergent experiences, “under valued” knowledge systems give way to dominant thinking as the “standard” by which all other knowledge is judged. In this case, the

¹⁷ As exemplified by Common Ground, a British environmental group (Hayden, p.63).

dominant system of knowledge has the power to determine the sense of “place”, defines the “place” as they see it, and occupies the “place” as they see fit. In the case of suburban and urban women, the domination of city planning by men and men’s ideas has resulted in cities that are both unsafe to the knowledge and physical presence of women. The same vision of any city’s “founding fathers” has also excluded much of the ethnic, religious and cultural knowledge systems present in urban settings.

Although the examples of indigenous peoples, women in suburban and urban settings and ethnic communities all take their knowledge systems from different “points of departure”, they nonetheless share common threads that bear exploration. The first and foremost of these common threads is the desire to “convert” knowledge systems into proactive community development methodologies. As Belenky describes it so well, we need to “do history” or “do environmental restoration”¹⁸.

These systems argue, as well, that knowledge is a product of a collective/community experience, research and action. “... [T]he picture of knowers as solitary absorbers of evidence is untenable, its collapse fundamentally related to the collapse of the view that evidence is self-announcing and wholly independent of our efforts to explain our experience ... many (feminists) insist that knowers are situated – historically, culturally and in relation to community-specific standards, practices, relations and practices – and we insist that experience is made possible and shaped by such standards, relations and knowledge” (Lynn Hankinson Nelson, p. 293). While independent individual research

can be used to contribute to the specialized knowledge of a community (using science to validate traditional knowledge, for example), this research must be a product of and contribute to knowledge of community experience (see also Goldberger et al., p. 170). In other words, community research and action projects must coincide with the respect for, equity in and empowerment to the identity of community in which the research takes place.

If we turn back to the Naturalized Knowledge Systems methodology, reviewing the "Basic Principles", we can find several differences between the urban/suburban knowledge systems discussed above, and those of people living within the *primal economy* of their natural world. Notable among these differences is the lack of grounding in the environment. Knowledge systems of urban populations are centred around social norms, contracts and expectations. It might be argued that these "non-natural" systems are tenuous, constructed as they are on anthropocentric concepts of gender, race or culture. While I would not argue that these "non-natural" knowledge systems are not to be respected and restored, I do think that the long term goal of these programs must be a return to a restored natural environment. The restored natural environment becomes, to turn to an allusion, the hub and rim of a multi-spoked wheel, in which the multiplicity of identities present in our world begin and end at the environment.

¹⁸ It is interesting that the Mohawk language is an active language. For example, "peace" which we would consider a passive term (ie: being at peace with someone), the Mohawk language considers a verb. The need to "do peace" means a constant action is required to ensure that peace continues.

Another fundamental discrepancy that exists between Naturalized Knowledge Systems and the knowledge systems discussed here is in their balancing of the concepts of rights and responsibilities. Naturalized Knowledge Systems pivot around the concept of responsibility for the natural world. All decisions regarding action within community, nation and confederacy are taken with responsibility as the "ultimate yardstick". In other words, all decisions return to the responsibilities we have to the Thanksgiving Address, and all of the elements therein. "Are we fulfilling our responsibilities to the birds?" might become the determining value in a particular decision about soil remediation¹⁹. The other knowledge systems discussed above tend to be framed in terms of 'rights'. For example, it is the 'right' of women to have access to all parts of the urban environment. Our failing in this circumstance was the lack of consideration of 'responsibility' on behalf of planners and urban communities to reflect the knowledge of city users other than the 'standard' white, middle class male.

It is possible to find in all of the knowledge systems discussed above the other four basic principles of Naturalized Knowledge Systems. Cooperation, shared knowledge, a shared sense of the spiritual value of others, and the interconnected nature of the world buttress these knowledge systems. Furthermore, all of these knowledge systems seek the tools of self-valuing, self-resourcing and self empowerment. These three keys of

¹⁹ For example, consideration for the effects of DDT found in soil samples might be based on the negative effects that DDT can have on the thickness of bird egg shells. If we are to take responsible action, we choose the action that has the least impact on the bird (and other) populations, because the responsibility to the birds outweighs the cost to the company/community of remediation. This kind of decision has recently arisen at Point Pelee National Park. Perhaps for the wrong reasons, the right decision was made. An examination of using the Thanksgiving Prayer as a positive health indicator "series" is discussed in Chapter 5.

respect, equity and empowerment, generating the will to move forward (“The Zeal to Deal”) and the tools to get there.

The promoters of the Naturalized Knowledge Systems methodology and the knowledge systems discussed in this chapter correctly perceive different levels within interconnected systems at which different knowledge resides, and that different levels of responsibility (or as noted above ‘rights’) reside at these different levels. In so doing, all of these systems acknowledge that there are appropriate levels at which action must be taken to achieve resolution of particular issues. The advantage of the Naturalized Knowledge System methodology is that Lickers (see for example Lickers 1997) has graphically depicted where decisions about issues should take place, and has provided a “blueprint” for making these decisions.

Indeed, there are many lessons which the Naturalized Knowledge System methodology can bring to community development processes, such as urban planning. For example, the Haudenosaunee delimit the spheres of most womens’ and mens’ actions by the concept of the “forest edge”. Inside the boundary set by the forest’s edge, women would be prevalent, focusing on the narrow, practical tasks of keeping a community functioning smoothly. The men, moving out beyond the forest’s edge, would work on broader, more theoretical tasks – like establishing relations with other communities. The significant difference between this gendered division of knowledge and sphere and the others discussed above, is in the balance of power. **Both** the knowledge of women and men were equally valued in Haudenosaunee society, because without the practical

mindfulness of women, the communities would starve and die. Without the theoretical tasks of men, no new ideas would come into the community, and it would not be able to adapt to the changing environment. **Both** of the knowledges were valued and had equal power, because the power was shared between men and women. The critical message to retain from this is that the knowledge of all peoples within a community must be valued, and empowered, in order to develop a true model for community development.

Within the concepts of the forest's edge, Haudenosaunee women would have access to places of their own. Sweat Lodges and "women's societies" would provide women with "safe" places where they could discuss issues and share their experiences²⁰. Because of the matriarchal nature of Haudenosaunee society, women were also party to many discussions that men were excluded from. Furthermore, the functioning of the clan system, and the overlaying of clan and function within the community, nation and confederacy allowed for harmony to be maintained between all elements of the Haudenosaunee. The key to this harmony was the recognition that complex social relations entailed complex responsibilities, not the need for more rights. Recognizing that the harmony in Haudenosaunee society arose from the functioning of groups provides us with a valuable lesson: working together on small projects can create harmony between different groups. These small projects can allow us to fulfill our responsibilities to our own group members, while still contributing to the larger community – creating a more complex web of responsibility. Through these projects,

²⁰ Within the Haudenosaunee, the categories of "received" or "silenced" knowers would not have existed among women. Instead, the concept of "empowered" knower would prevail.

we learn about each other, we value each others' contributions, and we create the climate for bigger and more complex projects. Once this process is initiated, the focus of community projects becomes "ask not what the project can do for you, but what the project can do for your community".

Finally, the Haudenosaunee looked at the inherent tension between commonality and difference within their society as positive²¹. The search for commonality between peoples was critical to survival, as cooperation was often the only way for communities to prevail during long winters, conflicts and illness. However, the Haudenosaunee looked to difference as a source of innovation, creating a drive for progress and change within community. The tension between survival and progress provided the impetus for community development, acting like a spring – as tension increased, the energy available in the system for action also increased and propelled the community forward²². The Naturalized Knowledge System methodology actively "exploits" the tensions between commonality/difference, survival/innovation, and practical/theoretical in order to create the conditions for progress.

In the final analysis, this is the greatest advantage of the Naturalized Knowledge System methodology: its ability to move beyond the theoretical to provide practical notions and tools with which communities, researchers, industries, etc; can *do* community development. It provides us with the "tool box" to seek solutions for all

²¹ "... harmony consists of opposing tension, like that of the bar and lyre ..." Heraclitus, Fragment 51.

²² In a community where only the survival instinct exists, the desire for a better, healthier community does not exist. In Davis Inlet, for example, the need to survive based on the search for commonality ultimately led to strife and community degradation.

problems, move beyond the circle of crisis management present in many indigenous and non-indigenous communities, and provide a peace-oriented pathway to environmental restoration – and all that that entails. It also offers a way in which the power dynamics within a community can be altered to balance respect for tradition and access to knowledge, allowing a greater role for all parts of the community in the community development process. So, we now turn to Naturalized Knowledge Systems as a methodology of community development, to examine its capacity and explore its possibilities for all communities.

Chapter 5

Chapter 5 – An Application of the Naturalized Knowledge Systems – Community Development

Ojibway Legend: The Spirit of the Corn

A long time ago, there lived a group of Ojibway people who had a bountiful harvest of corn. So plentiful was this crop that the people became boastful. Their pride and arrogance made them wasteful. So wasteful were they, that they ate more than necessary. They threw good corn to rot in the fields. They allowed their children to use the corn as play things.

After eating all they could, the people would bury the left-overs and then go hunting. Even though they saw plenty of game they were unable to kill anything. It seemed the game had twice its normal speed and their arrows went every other direction except at its aim. Soon their supplies dwindled and without the fresh meat the people would starve.

Recalling the hidden corn at home, they sent someone after it. Unfortunately mice had eaten all the corn.

Grief came among the people as they saw the men return empty-handed. Many of the people started to ask themselves, "Why are we being punished?" The question stayed with them as they danced and sang.

Among them was one man, who watched how they misused the corn and was very saddened by their deeds. Brooding about their attitudes of greed, selfishness he listened to the sound of the drum and his people singing as they attempted to seek forgiveness from the spirits whom they had angered.

As he came to a clearing in the forest, he noticed that in the center stood a lodge made of birch bark. Approaching the lodge, he could hear someone moaning as though he was in much pain. Upon entering the lodge, he saw a little man laying on dirty, worn out hides. The little man appeared to be very sick, pale and in much pain.

The little man, with a soft voice said, "I thought I was their best friend, but they continue to insult me by letting their children drag me through mud and dirt, letting the dogs tear me apart and leaving me in fields to rot. This is why they are now in great trouble."

The old man was feeling quite troubled for he knew now who he was listening to. The sick man continued to talk.

"I am glad that you have come, for you can tell your people how they have mistreated me. There is no longer water in my jug; not one leaf do I wear to protect me."

"Many weeds grow around me and insects are eating off me. Now go back and tell your people what you have heard. For I am the Spirit of the Corn."

The old man went home to his people and related what he had heard. He told them of the sickly appearance and the living conditions of the Spirit of the Corn. "The spirit of the corn said you have brought him to live in this dreadful condition. Your wastefulness is the cause of the misfortune we are going through."

Upon hearing the story, the people became aware of their wrong-doing. Immediately they returned home to their unplanted fields. The people sacrificed a dog to the Spirit of the Corn and prepared their fields for planting. The amount of corn which had not been eaten by the mice was placed in the soil. The people sang and danced.

Until harvest time the men went out hunting. From that time the people learned not to be so greedy and wasteful.

So, we must learn to care for our communities, and the knowledge that resides within our peoples. If we abuse, or misuse the resources that we have responsibility for, then we risk consequences for which there are no remediative solutions. Examples abound of this disregard for our responsibility towards the natural world, and the consequences that follow. Environmental pollution/degradation and the resulting social, economical, spiritual and cultural degradation touch all peoples around the world. There has been no time in the history of this planet when the urgency for action with regards to restoring the environment has been greater.

As discussed in Chapters 3 and 4, the key component of the knowledge systems discussed in this paper are a strong linkage between place and self, and the power to define the place itself. It holds, then, that the desire to restore a community's language, culture, or identity, rests in the restoration of the "place" in which that community is situated. As observed in urban settings, this restoration process is largely centred around valuing the knowledge systems present in the "place" so that they might be expressed in the broader vocabulary used to plan urban and sub urban places. For

women in these settings, place becomes understood as safety, access to process and action – the power to effect change.

As discussed in the previous chapter, restoration of the environment is the most direct way to the complete restoration of “self”. Although a complete documentation of the success of the Naturalized Knowledge Systems as a development methodology is beyond the means of this paper, the examples of environmental restoration and power re-distribution at Akwesasne discussed in Chapter 2 provide a wide example of how environmental restoration can positively impact a community and its identity. The further example of the Malecu, discussed below, will highlight the possibilities of environmental restoration using the Naturalized Knowledge System methodology, stripped of its original cultural articulation. Again, while safety for women in an urban setting is necessary, and “safe” knowledge places for women in suburban setting is a fundamental responsibility that we have to our communities, they are only “stepping stones” to true restoration – that of the environment¹. Only in the re-establishment of our natural ties to the earth and each other will we find true, whole restoration².

“Every member of a healthy community acquires a sense of understanding, and of participating in, the community’s natural environment, in order to live in symbiosis with it. This is impossible for those in today’s great cities. Natural parklands and urban ponds, although desire-able, are ultimately an inadequate substitute for whole forests, grasslands, marshes, lakes or oceans ... The high levels of stress and stress-related illnesses, physical and psychological, which literally plaque most modern city-dwellers ... are in part products of their chronic separation from natural environments” (Luttrell, p.5)

¹ Haas and Lickers point out that their extensive research and experience indicates that environmental restoration necessarily results in the restoration of all other community aspects – this is a good example of how everything is connected to everything.

The Naturalized Knowledge Systems methodology is a formidable tool in this process of restoration. Within its principles, tools and values lies the tools and resources to motivate environmental restoration – and the concomitant restoration of community identity and potentials. The purpose of this chapter is to examine the Naturalized Knowledge Systems Methodology as an evaluation and planning tool for community development based on environmental restoration. While outlining the “uses” of the different elements of naturalized knowledge systems discussed in Chapter 3, I will illustrate how these elements can be used to record, evaluate and use knowledge present within community to identify and mitigate environmental (and as a result social, economic, spiritual etc) pressures which are eroding both the knowledge and identity of a community. In order to illustrate the uses of this information (since the Naturalized Knowledge System methodology is best understood as an applied tool), I will apply it to the communities of the Malecu First Nation in Costa Rica (as a case study).

Before initiating this analysis, it is important to reinforce the importance of strong ethic in this work. This Chapter, while intended to be instructive for those participating in community development, should not be viewed as a “template” for community development which can be appropriated by a researcher, without understanding and embracing all of the elements of the naturalized knowledge systems methodology³. Indeed, this approach rests on an embracing of the responsibility of the researcher.

² It is worth noting that I would not argue that the environment should be restored to some “artificial” date in history – pre-contact, for example – but rather that by understanding the dynamics of the environment and the pressures placed upon it that we can re-habilitate or restore it to the balance it requires so that we can survive with it.

³ As noted in Chapter 1, the Naturalized Knowledge Systems methodology is the property of the Mohawk Council of Akwesasne and cannot be used without the express consent of the council and its ‘author’, F. Henry Lickers.

The researcher is neither observer or steward; “despite the traditional Christian association of stewardship with proper moral behaviour. It is not the ecology which we are responsible for managing well, **it is only ourselves**. We need to understand that we can succeed in future as participants in our environment, but not as owners or managers” (Luttrell, p. 35). Responsibility, then, is the key to success.

Responsibility to what? Ultimately, our responsibility is to the “place” in which we find our “self” – the natural, social, economic, spiritual and cultural region in which our lives and identities are defined. Are there not rights associated with this “place” – the right to hunt, use the forest for medicine plants, burn wood for heat, change culture to accommodate change in belief systems or learn other languages? There are, but these must be in constant balance with our responsibilities. In other words, our rights must be an expression of our responsibilities.

Below, a discussion of this question will reveal its importance to the success of our work. For the purposes of the Naturalized Knowledge System, we will discuss the role of the Thanksgiving Address. The Thanksgiving Address, combined with the considerations for different levels of action (individual, community, nation etc) and seven generations provides a comprehensive definition of our responsibility to “place”. In his book *Transforming Communities*, William Luttrell provides a broader definition of this responsibility. He alludes to the role of bio-region as the ultimate locus of responsibility for our “place”, our “community”.

For this community, Luttrell (pps. 188-189) lists broad categories of rights by which he argues we can define our responsibilities. These are:

- 1) self-propagation – the rights of the animals and plants to the land;
- 2) self-nourishment – the right of the land to sustainable agriculture – providing nourishment to itself;
- 3) self-education – the right to continue to evolve – Luttrell argues that nature has been conducting experiments on its own for millions of years, completing billions of successful improvements;
- 4) self-governance – this is the right to not be dominated by others, but to govern itself according to natural forces;
- 5) self-healing;
- 6) self-fulfilling activities – these are the rights for the flowers to bloom, wheat to grow – again this provides nourishment to the community.

The rights (and roles) are integrated and inter-related and are subject to influence from within and outside the community.

Any community, then, has these rights. Our purpose is to continually re-define our responsibilities with regards to these rights. It is also to seek balance in this equation, actively researching the knowledge of the community and seeking to restore harmony between rights and responsibilities. Like the dynamic present in the natural community that is our “place”, our own actions are continually evolving and changing. In this sense, community does not just exist, it continues to exist. Further, our responsibility to community does not just exist, it continues to provide us with “response-ability”. Community, then, is always community development.

Community Development

Community development is a dynamic, constantly in motion. As mentioned in Chapter 2 of this paper, the notion of community development “can be tentatively defined as a process to create economic and social progress for the whole community with its active participation and the fullest reliance on the community's initiative ... ” (UN, 1955).

While this is an acceptable definition, the government of the Yukon goes further, arguing that community development emanates from the people of the community, who both create and draw benefit from this development. The government is not the source of community development, but is a source of support for decisions made at a community level where issues and needs are the clearest. “Communities must be helped to develop themselves, to plan and control the improvement of local economic and social conditions” (Yukon Government, 1998, p. iii).

Community development begins and ends at the community. The knowledge of the community is used to identify and pursue the development needs of the community, in harmony with traditions, modern science and sustainable responsibility⁴. Traditions and research enable the community to fill the gaps in the knowledge system and identify evolutionary trends and areas where degradation has occurred. Kirk refers to this process of research as the “creation of landscape”, postulating the need to identify patterns, rather than focussing on individual ideas or events. “Of greater value is the search for regions of process, regions in time, to demonstrate the changing pattern of

⁴ I use the term “sustainable responsibility” to avoid the term “sustainable development”. Sustainable development is fraught with a complex “baggage” of political and historical meanings which are not helpful for this discussion.

forces operative in the creation of landscape, at times approaching a balanced equilibrium, at other in a state of flux when the introduction of some new element disturbs old harmonies" (Kirk, p. 24). He is arguing that we need to be able to measure and understand the pressures that exist on the landscape which forms our place, our community.

The measurement of "development" and "development potential" must be done both on and in the terms that are relevant and requested by the community⁵. For this measurement to be complete, it must assess both the rights and responsibilities present in a community, and identify the challenges and opportunities to each. As argued in the previous chapters, this measurement of avenues of development must not only respond to the needs identified by the community, and the knowledge within that community, it must also build on the knowledge of the community and identify long term trends and possibilities. It must also be directly linked to environmental reconstruction, from which other re-constructions will follow, based on knowledge documentation, research and accidental discovery. Again, the environment is critical, because "[f]or humans to assume rights to occupy land by excluding other life forms from their needed habitat is to offend the community in its deepest structure" (Berry in Walker, p. 188).

"However, in order for these communities to survive they must be recognized as part of vibrant local and regional ecologies – part of the land, with all that that implies – which cannot be legally seized or, without permission, impinged upon by non-native communities; and this must be recognized in perpetuity. This is what the peoples of the First Nations have been telling us for generations, insisting that such is their right. In a special sense, as they have been crying out, they belong to the land in Canada. We non-natives have separated them from it and assaulted both. Immigrants and indigenous peoples alike cannot sustain a future in which this continues" (Luttrell, p. 56).

⁵ This resonates with the discussion regarding "safe places" in Chapter 4.

Where, then, can we turn for a model of community development that responds to the above demands, while continually seeking its own self-improvement⁶? Certainly, the models of urban development discussed in Chapter 4 offer some possibilities.

However, as discussed above, these knowledge systems (and the development models that flow from them) do not necessarily tie back to environmental restoration. Here, the Naturalized Knowledge Systems methodology contains a distinct advantage over other models. There are, in fact, many good reasons to look to indigenous peoples for productive and sustainably responsible community development models.

"But while at an early period we were aware of our dependence on the integral functioning of these surrounding communities, this awareness faded as we learned, through our scientific and technological skills, to manipulate the community functioning to our advantage" (Berry in Walker, p. 186).

Among the proponents of indigenous community development methodologies is Luttrell who argues that our (western) scientific approach, in search of knowledge and understanding, has led us to misunderstanding and misinterpreting the information we have gathered. We have, he argues, "forgotten more than we have learned" (Luttrell, 39-40). "The first peoples ... have not altogether forgotten, and are working to recover what even they have lost, about our intimate interdependence, indeed our essential unity, with the biosphere around us" (Luttrell, p 39-40).

As a community development methodology which responds to the concepts of "bioregion" (as used by Luttrell) or "ecological integrity", the Naturalized Knowledge

⁶ The development model sought here must also be driven by a dynamic – it must change in accordance with the "place" and the pressures on that "place". Part of the motivation for the research work I carried out with the Malecu First Nation in Costa Rica was to identify the potentials of the Naturalized Knowledge System methodology and to identify needed changes to the Naturalized Knowledge Systems methodology.

Systems methodology is a powerful tool for building consensus within community about what issues require attention, and how they are to be addressed. Furthermore, the Naturalized Knowledge Systems methodology is as much about the substantive content of the consensus as it is about the principles which are used to determine that content. As such, it has the “potential to act as a powerful integrating force in the social relations of the local management of environmental change” (P. Healy 256). In other words, the ability to shift the locus of power within a community, and the resulting change in thinking within the community is as important as the final outcome of any one project.

The Naturalized Knowledge System methodology as an evaluative tool

“... Community is never to be gained or regained ... in areas where human beings, by virtue of their surroundings, are isolated not only from their neighbours, but even from themselves” (MS Fries – p. 49)

As suggested above, the substantive and motivating principles of community development must flow from the community in which the development is to take place. This means that the tools of community development are necessarily derived from the experience of community development (Lickers, 1997; Luttrell p. 70). But what of a community that can not or has not broken the inertia of degradation, loss and depression? How do we determine what local knowledge exists when the communities feel they have lost their “way” or when they feel their knowledge is devalued to the extent that it is useless to anyone, including their own peoples⁷? Naturalized

⁷ Lori Ann Thrupp examines this phenomena in rural Costa Rica in a number of her papers. Her paper entitled “Legitimizing Local Knowledge: “Scientizd Packages” or Empowerment for Third World People” is an excellent synopsis of the challenges to use of local knowledge in the development context.

Knowledge Systems responds to this challenge by offering a “incomplete”⁸ set of principles and tools to assist any community in their own development initiatives.

“We need to see that tools and the development of tools are not mysteries accessible to only the chosen few. We need to understand that to find locally that which can be used, is a valid discovery, indeed more valid than nuclear fission or and artificial and expensive vaccine against AIDS. We need to find ways of liberating the capacity of our local people to do research and development. We need to stop being overwhelmed by ... science or scientists” (Luttrell, p. 70-71)

We will now examine the use of these tools in identifying community development indicators, pressures and actions⁹. Based on the discussion of Akwesasne in Chapter 3, it is possible to see that societal recovery begins with the recovery of the environment (also see Lickers and Haas 1997). As such, the ultimate goal of the Naturalized Knowledge System methodology is *to empower First Nations communities through practical projects in the environmental area* (Lickers and Haas 1997)¹⁰. Within the context of these practical projects, respect, equity and empowerment are gradually established, *one project at a time*. Success will not come from tackling all of the communities’ challenges at once, but by building on one success at a time (Lickers 1998). Notwithstanding this rational approach, it is clear that a researcher may encounter the following challenges in First Nations communities across the globe (Lickers and Haas 1997):

⁸ Here I mean “incomplete” to refer to the fact that the Naturalized Knowledge System methodology is very flexible to the needs of any community dynamic – the tools can be adjusted to meet the needs of the community.

⁹ This discussion will be presented from the point of view of a researcher from another community.

¹⁰ It is important to note that this process is based on the development of empowerment for communities. It is for the empowerment and capacity of both communities that the research is conducted. In the case of the Malecu, the ensuing research was of benefit both for the Malecu communities and the Mohawk communities.

1. First Nations people are not an equal part of the society in which their nations reside.
2. Too few structures exist for true economic and political viability.
3. The loss of traditional ways of life goes beyond what is necessary for adaptation.
4. Social and economic may occur without any vision for the future.
5. Disintegrated communities may never recover or simply continue to do crisis management with few or no resources dedicated to escaping that struggle.
6. The structures controlling communities have neither clear existing concepts of First Nations' ideals nor any idea on how to prevent further loss of cultural identity.
7. These structures reflect crisis management "mode" and effectively choke of the creativity required to escape the current situation and therefore it seems like little is being done to change the present dilemmas.

While these issues are almost universal, so too is the presence of hope for the future (Lickers 1998). Sharing the success of the Naturalized Knowledge System methodology at Akwesasne with other communities so that they too may share in the success, is therefore critical to this process. It is for this reason that the Mohawk Council of Akwesasne sees the Naturalized Knowledge System methodology as a **responsibility** to others and themselves. It follows that this is the reason that the Mohawk Council sees the importance of working with others like the Malecu in Costa Rica (Lickers 1998).

Responsibility of the Naturalized Knowledge System methodology researcher

While work in the community is complex and difficult, the responsibilities of the Naturalized Knowledge System methodology researcher working in and with community are very direct and clear in that the researcher must:

1. respect the communities' protocols;
2. discover and grasp the Naturalized Knowledge Systems specific to the communities with and /or for which the research is undertaken; and
3. share all results with the community.

Furthermore, the researcher has a responsibility to remain objective within this framework. While the researcher may be an active agent in the changing the community, they can establish credibility through their participation in "equity building" activities – participating in community practices and projects. Based on these clear "rules" and the Naturalized Knowledge System methodology concepts discussed in Chapter 3 (ie: respect, equity and empowerment), the Naturalized Knowledge System methodology can begin. The first step in this process is "lighting the smoky fire". This process is illustrated below with reference to my work with the Malecu Indians.

Case Study - Lighting the Smoky Fire with the Malecu

Traditionally the concept of lighting the smoky fire related to the approach of unknown visitors to a community. These visitors, in order to gain welcome to the community would gather away from the community (literally at the "forest edge") and light a fire. The community members, seeing the smoky fire, would approach the visitors and ask

their purpose. It is here that the visitor would have the opportunity to introduce themselves, explain the purpose of their visit and allow the community to familiarize themselves with the visitors (Lickers 1998). It is also an opportunity for the visitors to demonstrate the goodwill of their visit by offering gifts from their people to the people they are visiting. Arguably, then, the first years of any relationship between two nations might be deemed "lighting the smoky fire".

This process was repeated at the outset of ties between the Mohawk and Malecu peoples. F. Henry Lickers and David Leech were brought to the Malecu communities at their invitation. For the first meetings between these visitors and the welcoming communities, Lickers wore traditional dress (ribbon shirt and sash) to show the ceremonial nature of the visit. Lickers also brought gifts of sweet grass, sage and maple, each with specific meaning and importance to the Haudenosaunee.

After the Thanksgiving Address, Lickers presented to the community his "bundle of words"¹¹ – greetings from the Mohawk Council and his desire to work together. He summed up why he had been sent by his Clan Mother on behalf of the Council, what work he desired to accomplish with the Malecu and his desire to understand whether the Naturalized Knowledge System methodology worked in their communities. At that time, leaders from the Palenques had an opportunity to greet Lickers and Leech and present their gratitude for their visit and the opportunity to work together. They invited the Mohawk Council to come and work with them on their community concerns, listing the issues which they felt they required some assistance with. These desires and concerns became the "bundle of words" for Lickers to return to his council with, in order that the Mohawk Council might suggest how they could help the communities. With these bundled words, Lickers and Leech returned to Akwesasne and Canada.

After some reflection, it was decided that the Council would offer assistance to the communities in the specific area of sanitation. Coupled with the desire to move this project ahead, the Council also respectfully submitted to the communities the need for basic education materials on water quality, health and sanitation. It is then that Leech, on behalf of the Mohawks, returned to the communities with a field researcher to discuss the possibility of working on these projects together.

After greetings and a welcome were exchanged, Leech introduced the ideas of the Mohawk Council. Principally, this agreement allowed the field researcher to live in the community collecting basic historical, linguistic, ethnographical and traditional information with the Malecu in order to prepare health and hygiene education materials. In exchange, the field researcher was to work on behalf of the Mohawks and Malecu to advance the needs and concerns of the communities (in particular with respect to water and sanitation) with the appropriate agencies in Costa Rica and identify potential areas of future collaboration.

¹¹ Lickers explained that he arrived "bundled" with the words given to him by his Clan Mother on behalf of the Council.

Because the respect between peoples was established, the equity was clear and the potential for empowerment was present, the “zeal to deal” allowed the Mohawk and Malecu Nations to agree on this first project, in order to “get to know each other” and build and sense of kinship. In a sense, the smoky fire was lit, the communities greeted the strangers and agreed to welcome them into their communities. The building of a relationship had begun.

This process of lighting the smoky fire is critical to bringing about the conditions required for the building of a relationship. It is also critical to introducing the new communities to the Naturalized Knowledge System methodology. Both the philosophy of the Naturalized Knowledge System methodology, and the need to establish concrete projects on which work can be done in partnership are articulated at this critical stage. This establishes sufficient energy¹² in the system to create movement in the community and provokes the desire to work with the Naturalized Knowledge System methodology. In other words, lighting the smoky fire initiates a process which both changes the way in which the community thinks (moving from crisis management to a “I think I can” mentality) and the way in which the community addresses environmental remediation. Once the smoky fire has been “lit” between the people and the researcher¹³, the process of designing a methodology for working together on research can be developed.

Designing the Methodology

Haas and Lickers (1994) identify several potential pitfalls to successfully establishing a successful research/development methodology that is specific to the community.

Among these problems are:

¹² The concept of creating this energy through “tension” was discussed in chapter 5.

¹³ The “smoky fire” part of this process may last several years – depending on the “level of community development” present in the specific community. This is discussed below.

1. lack of respect, equity or empowerment (see Chapter 3);
2. researcher versus research subject approach;
3. outside society versus Indigenous community;
4. importation of research methodology in community;
5. suppression of local indigenous knowledge and the methods by which it is transferred;
6. ignoring problem of scale – each problem must be solved “where” it is caused (see below).

In listing these potential pitfalls, the community and researcher can immediately identify the need to have the community define the research project goals based on their own perceived needs and goals. A constant awareness and review of the above pitfalls will improve the chances of success in this process. Here, it is useful to use Offe's notion of “the “restless search” by political communities for appropriate governance forms for the management of relations which are both dynamic and contradictory” (Offe 1977 in P. Healy p. 270).

Through independent research and consultation with all elements of the community (elders, youth, women, men, educators, health technicians etc;), a review of the communities situation must be conducted. This might include a review of the socio-economic development and their relationship to the “environment”. Current development approaches must also be assessed to identify their weaknesses and

strengths – these include local, regional, national and international approaches to environmental “development” within the communities. The need for and relevance of existing environmental indicators (see box below) must be determined, including what information is required for practical community databases and statistics (Lickers and Haas 1994).

From this information, a general methodology can be developed for the research and development to be carried out in the community. This general methodology can contain information about how the research is to be carried out, what kind of consultations are necessary¹⁴ to validate the researchers information and how this information is to be communicated. In a sense, this agreement might be called a “terms of reference” for establishing future research. These “terms of reference” remain open to discussion and alteration.

With the Malecu, it was decided that a long-term approach was required, based on community meetings, interviews, and the presence of a researcher in the community. A long-term approach was decided upon because of the long standing divisions in the communities, the competition between the communities (meaning that tuning the methodology was critical to creating a climate of cooperation) and the pervasive degradation of the traditional knowledge and environment of the Malecu.

Environmental Indicators

It is critical to remember that since this process begins and ends with the natural world, environmental indicators play a significant role in evaluating and understanding the status and potential of community development. Lickers and Haas (1994) argue that environmental indicators in indigenous communities are useful for:

1. illustrating a transfer of knowledge within and between communities;
2. describing the level of change within communities;
3. measuring the ratio of dependency on the environment;
4. measuring the dependency on the environment (environmental indicators represent socio-economic and cultural indicators as well); and
5. helping in identification of the measures needed for community stabilization.

Once the relevant methodology has been decided on by the community and the researcher, it is possible to begin the process of assessing environmental pressures on the community and its "place" in the natural community.

Identifying Issues

"How will the community seek to transform itself into a symbiotic element of the larger local environment and at the same time meet other community needs? What environmental options can be defined and chosen among? At the very least, how will environmental destruction be reduced? What steps can be taken locally to increase renewable forms of energy production and to enhance reuse and recycling of products?" (Luttrell, p. 78)

As Luttrell demonstrates, the "question phase" of the Naturalized Knowledge Systems methodology is complex, often confusing broad longer-term issues with those of local and immediate concern. This step can be ongoing, intense or gradual, and is often a revealing gauge of problems to come in the implementation phase. There are a number of approaches to identifying issues, from community meetings, interviews or the research carried out during the methodology development. The questions or issues

¹⁴ This is critical in societies where specific roles are assigned according to clan, gender or upbringing. Where knowledge is "gendered", for example, the methodology will remain flexible to accommodate parallel knowledge systems.

identified during this phase are critical, as they will form the basis of the environmental indicators for the community.

While exploratory discussions and illustrations¹⁵ assist the researcher and community to identify these indicators, a structure is required in order to organize these thoughts. The Naturalized Knowledge System uses the Life Indicators wheel and Thanksgiving Address to provide this structure.

Using the Life Indicators wheel will allow the community to approximate the health of the community. For example, a measurement of the morale of the Malecu will provide an indication of the health of the environment in which they find their "place" (this is based on the Life Indicators wheel discussed in Chapter 3). Since discussions with the Malecu communities led to the conclusion that morale was low¹⁶ (with some exceptions), this indicated that the environmental conditions of the community were not good.

This conclusion can be borne out by examining each element of the Thanksgiving Address¹⁷. In so doing, it will possible to identify past, current and desired relationships

¹⁵ Both Delores Hayden and the United Nations suggest drawing relationships as a means of drawing out these indicators. Individuals are asked to map their community on a piece of paper, indicating the significant features to their own histories and lives. From an analysis of these drawings, a list of significant relationships can be drawn between the community and the environment. Based on historical research and an examination of the environment, it will also be possible to identify "missing" relationships – those that have faded from memory because of loss of access, environmental degradation or loss of knowledge.

¹⁶ It is important to use relevant indicators for this "test". For example, number of picnics per sunny days would be a relevant indicator for Akwesasne, whereas number of fishing hours per sunny days would be a more relevant measure for the Malecu.

¹⁷ The Haudenosaunee Environmental Task Force has prepared an excellent publication entitled "Words That Come Before All Else" which is a very detailed look at the environmental implications of the Thanksgiving Address. This book was published by the Native North American Traveling College in 1999. Thank you to F. Henry Lickers for the copy which he gave to me to remind me of my responsibility.

with and quality of all aspects of the natural world in the communities "place". Briefly, the community and the researcher can consider the responsibility of the community to

the people;
the Earth;
the plants;
the animals;
the water;
the air;
the thunderers;
the sun/moon/stars; and
the Creator.

Documenting the knowledge (or lack thereof) of the community about each of these areas will provide an initial list of the environmental (and therefore socio-economic and political) issues which the community wishes to address. The Malecu, for example, identified water as a particular concern to their communities. From that, the following issues and indicators were identified¹⁸:

Issue	Indicator
Need for clean and sufficient water supply to their houses	Capacity of water system and aquifer, quality of water in system, % of houses/buildings hooked to water supply, presence of knowledge about household hygiene etc;
Need for access to clean water courses for fishing etc;	Location and quality of water courses, accessibility of these water courses, etc;
Need for clean, cost-effective means of treating black and grey-water effluent from houses and buildings in the community	Number of functional septic systems, number, location and timing of presence of black or grey water rising to surface, presence of knowledge about maintenance and care of septic systems, presence of knowledge about health effects of untreated grey and black water etc;

¹⁸ This is a representative list of issues and indicators, not a complete listing.

Again, based on these indicators, it was possible to assess the issues raised regarding water in the Malecu communities¹⁹. At this stage, it is important to recognize where the knowledge regarding specific issues resides within a community. If, for example, women are responsible for most tasks involving water in the community, women are the appropriate source of knowledge and information about water. This allows parallel knowledge systems (as discussed in Chapter 4) to be valued and incorporated into the research planning.

Indicator	Status
Capacity of water system and aquifer	Unknown
Quality of water in system	Unknown
% of houses/buildings hooked to water supply	Tonjibe: 95%, Margarita 95%, El Sol: <50%
presence of knowledge about household hygiene	Mixed
Location and quality of water courses	Only reliable sources are 3 hours walk
Accessibility of these water courses	Most accessible are most distant
Number of functional septic systems	None – all are broken
Number, location and timing of presence of black or grey water rising to surface	Constant – particularly during rainy season in low areas which tend to be where people play
Presence of knowledge about maintenance and care of septic systems	None provided by government during installation of septic systems
Presence of knowledge about health effects of untreated grey and black water	Mixed

¹⁹ Again, research and documentation is key to establishing and preserving the knowledge of the community with respect to each of these issues.

Using the table in Appendix I, it is now possible to identify the time and scale aspects of these issues. For example, lack of access to clean water effects all levels²⁰ of the scale (in this case, Confederacy does not exist) and implies that actors must participate at all levels to address this issue. The question of appropriate level for action in this case was largely determined by resourcing and practicality. Limited resources, and the need to generate greater knowledge of how the community worked determined that the location of initial action on this issue was best conducted at the community, or sub-community level. It was also felt that this small, concrete project would have its greatest impact on the thinking (empowerment) of the Malecu at the community level.

From a time perspective, an analysis must be done of the impacts of the current situation over seven generations. It is possible to conclude that the current pressures on water quality in the community will cause migration from the area to clean water sources. Since these sources are almost all within non-indigenous communities (San Rafael de Guatuso is the nearest), it is possible to see that within one to two generations, that these people will have completely lost their traditions, language and relationship to their original "place". For those that remain behind, it is possible that overcrowding (another issue identified by the Malecu) will lead to increased use of water, resulting in rising disease rates from water-borne illnesses, and increased black water effluent problems within this or the next generation. In a sense, this list can be viewed as an enumeration of the costs of inaction.

²⁰ For example, the community is responsible for ensuring clean water for all community members while the national government (of Costa Rica) holds technical responsibility to ensure clean water supplies for all of its citizens (including indigenous peoples).

By further examining the status of each indicator, it will be possible to determine the impact of each indicator at different scales and over seven generations. It is possible to create a list of priorities based on this process. Attached to each of these priorities will be a list of opportunities and challenges offered to the resolution of this issue. The opportunities list provides a list of actions possible to address the issue, and the challenges provide a list of costs associated with each action. An example of this listing might be:

Indicator	Status	Cost of inaction	Opportunity	Costs
Presence of knowledge about household hygiene	Mixed – part based on mythology, part on information from clinic	Increased illness, possible linkage of illness to incorrect source, etc;	Research and develop education materials	Sweat equity ²¹ , finances from Canada (confirmed), etc;

Based on these discussions, the community decided that education materials about the importance of water quality and the links between hygiene, black water treatment and health were required. These materials, it was decided, would be useful in educating community members about the importance of water quality and motivate the communities to seek funding and technical expertise to resolve the issue. Since the costs of inaction were immediate, and the costs of the opportunity were low, this was decided to be the most effective project to complete. In other words, education materials were deemed to be an effective method of “moving the community towards clean water” (ie: changing from its current state) since the pressure on the community and environment as a result of dirty drinking water was great, the remediative actions were cost-effective and the scale of the action was appropriate.

Following this decision, it is necessary to review the action in light of the principles of the Naturalized Knowledge System methodology and the concepts of Respect, Equity and Empowerment as discussed in Chapter 3. Again, the work conducted with the Malecu is used as an example.

Action	Principles	How Met
Research and develop education materials	The Earth is our Mother	Materials will address keeping domestic animals in clean areas to avoid disease spreading to humans – animals are our family
	Cooperation is way to survive	Cooperation is needed to produce materials – Canada, Costa Rica and Malecu communities
	Knowledge is power if shared	Materials are way of sharing knowledge
	Spiritual world not distant	Spiritual aspects of water in materials show that the spiritual world is here in our communities
	Responsibility is best practice	Materials based on concept of responsibility to world around us
	Everything connected to everything	Materials will show connection between clean water, garbage, environmental cleanliness and health etc;

This assessment can demonstrate the effectiveness of the proposed action/opportunity for resolving the issue in a manner which is consistent with the core values of the community. The final assessment of this proposed project is to ensure that the concepts of respect, equity and empowerment are in balance between the researcher's community and the community in which the work is to be done – to ensure that the “zeal

²¹ Sweat equity is the unpaid effort of individuals, groups etc; to produce the information required for the materials.

to deal” is in place. As with many of the other aspects of the Naturalized Knowledge System methodology, this assessment is ongoing as the dynamic of the relationship changes throughout the project’s duration.

Because the “Zeal to Deal” is a balancing of conditions between two (or more) communities, respect, equity and empowerment must flow between all parties. The “good” combination of these three is where respect is good, equity is very good and the long term goal of empowerment is excellent. While respect is necessary, the role of equity and empowerment provide substance to the relationship over time and are therefore the most critical to establishing the “zeal to deal” for the long term. In any situation where respect is great but equity is less and empowerment less still, communities will be skeptical of the value of the work and the intentions of the researchers. Again, we turn to the Malecu as a case study:

Respect, Equity and Empowerment – the Malecu Experience

Respect – respect is generated between communities through knowledge and understanding. Each community must respect the knowledge and expertise of the other, and communicate equally and openly to each other. Decision-making on research objectives and mediation in the cases where disputes arise are also critical to generate respect. Finally, honour is key to maintaining respect in this relationship.

Since the initial meetings of the Malecu and Mohawks, considerable knowledge has been built of the Malecu through research and direct community participation by a field researcher. Ongoing meetings between the Malecu and myself and the presence of the field researcher in their communities has allowed the Malecu to get an understanding and knowledge of the Mohawks and the Haudenosaunee. Examples of generation of respect between the communities are:

- F Henry Lickers delivers thanksgiving address in community meetings and explains Haudenosaunee traditions of “lighting the smoky fire” – he brings gifts of sweet grass, maple and sage for the communities

- D. Leech meets with community leaders on three subsequent visits to explain NKS philosophy and re-iterate Mohawk commitment to the NKS process and working with the Malecu – brings greetings and news of Mohawks to the Malecu
- NKS Field Researcher lives in community to learn from them and works with community on their projects
- Communities agree to work with project team and accept NKS field researcher into their communities
- Communities respect needs of Mohawk Council to work on project goals – namely those of generating water, health and hygiene education materials
- Mohawk Council has made a commitment to bring a Malecu leader to Akwesasne to learn about the ways of the Mohawks and Haudenosaunee and to find out more about the Mohawk communities

Equity – once initial respect has been generated, equity may become an issue. It is important that the concepts of equity valued by both communities be recognized and valued. Equity may include funds, knowledge, networks, personnel and social power brought to bear on project work by either party. It is here that the concept of partnership is truly realized.

- Communities agree to share their knowledge of water, and its importance with the field researcher
- Communities provide housing and food for field researcher during his research term
- Communities share their knowledge of their history and traditions with the field researcher
- Communities facilitate the building of knowledge about Malecu by hosting researcher and introducing him to different people and groups in the community
- Project pays for field researcher to live in community and carry out research and actions for the community for 3 months
- Project pays community for translation of health education materials into Malecu and agrees to provide supplies to school in exchange for illustrations
- Project field researcher builds networks of people in Costa Rica that can assist in advancing Malecu needs – for example, in performing work for the Ministry of Health on behalf of the Malecu to advance the requirements for new sanitary systems in the communities
- Malecu agree to support Mohawk Council projects in future

Empowerment – if respect and equity have been established, the final tool to establishing the “zeal to deal” is empowerment. Essentially this allows the “recipient” community or communities the right to determine how tasks will be carried out, and how to measure their success. Through this application to project goals and the recognition of being project “authors” (and through co-authorship of any papers generated by the process), the concepts of credibility for the project work and the sense of responsibility is established for this work. Through this tool, the successes of the community are “owned” by the community, pride is built, and hope replaces desperation.

While this is the hardest of the three tools to measure, this project did contribute to the generation of empowerment in the communities. Examples of this empowerment might be:

- Communities agree that health education materials will be a positive contribution to the health of their communities. The successful completion of these materials will be a modest success where all three communities are collaborating and benefiting. Recognition by the communities of this success will allow them to have a success “under their belts” before tackling the next challenge.
- Communities have attracted sufficient attention to their sanitation needs that the Ministry of Health is moving forward with plans to design a “black water” treatment system for the communities – the housing needs of the communities are also being pursued by the government, in part as a result of the success of this project
- The three Palenques of Tonjibe, El Sol and Margarita agree that it is critical to cooperate on the land claim process underway in the national courts – this is crucial given the issues of mistrust between the communities
- The Mohawk Council is building their credibility in international research and development projects through the successful completion of projects such as this
- The Mohawk Council and the Malecu Palenques have shown an interest in a second project, this time focusing on the fauna restoration project of the community and other environmental restoration projects (such as having the BriBri re-teach the Malecu about the sacred medicines and uses for plants in their area)

While the above assessment is a reflection of the project very near to its end, it is possible to see how the concepts of respect, equity and empowerment develop and are balanced between the communities for the project's duration.

As discussed above, all of these tools respond to an evolving dynamic within the community. Changing social relations, environmental conditions, economic conditions, and other pressures on the community (from both the inside and outside) will continue to alter the “fine tuning” of all aspects of the project work/research. It is important to be mindful of not only the balance of respect, equity and empowerment, but also the adherence to the principles and indicators accepted by the community and the need to

address issues at the appropriate level of scale²². It is only through this constant evaluation that the project work, and the relationship between communities will “stay on track” towards success.

Finally, it is important to ensure that the experience, knowledge and benefit of all project work is “fed back” into the community. The benefits of accomplishing small research projects and subsequent actions will enhance the validity of the environmental indicators established above, the methodology of the research work and knowledge of the people in the communities. As future projects are contemplated, the strength of the community is enhanced, and the desire to participate in research and expand the scope of research work is increased. As knowledge about the environment and the community are built through successive projects, the sharing of knowledge increases the power of individuals, groups and the nation to make changes at their respective levels. The case of the Malecu provides an example of how this building occurs.

Making the successes work to the communities' advantage

From the observations above, it is possible to conclude that the Malecu are still establishing a road to recovery, while managing the “survival” of their communities, culture and nation. While this project has initiated the documentation of knowledge about the Malecu (based on health and hygiene education materials), much more needs to be completed, so that a “map” of the Malecu knowledge about their ecology, culture, economics etc; is preserved for future generations.

Projects like the “Zoocriaderos Ecoturísticos” (eco-tourism ranch) initiated by the Malecu will assist in this mapping (of tradition) while providing a complimentary outlet for economic development needs within the larger economy of Costa Rica and beyond. These kinds of projects are ideal for rationalizing the need for a return to closer ties with the natural world (thus assisting in regaining traditional language, culture and spirituality) with the need for economic “growth” that is sustainable.

²² The table in Appendix I is useful in considering the question of scale. It is also useful when considering the time needed to address issues depending where they lie on the scale of responsibility.

With this in mind, the efforts of the project within a second phase can include bringing the “zoocriaderos ecoturísticos” to fruition – attracting the resources and expertise needed by the Malecu to make this project a reality. Once into the “regeneration” phase, the community will begin to look at their Naturalized Knowledge System as the matured sense of what they are (the sum of the “rationalization” discussed above). The Naturalized Knowledge System becomes the form for the substance (or knowledge) retained by the community. While respect, equity and empowerment remain critical to the Naturalized Knowledge System sum, the equation is more complex and refined, based on years of documentation and community development.

Analyzing the Data

Throughout the steps in this process, it will be possible to determine the “level” of community development potential present within a community. The stronger that the community adheres to their “primal economy”, the easier it will be for that community to embrace the Naturalized Knowledge System methodology²³. Communities will generally pass through five phases:

1. life before contact with European/colonial civilizations;
2. decline of the Naturalized Knowledge Systems present in community;
3. 1st phase of recovery – recognition of the importance and usefulness of the Naturalized Knowledge System;
4. 2nd phase of recovery – development of institutional structures to support the Naturalized Knowledge System; and
5. 3rd phase of recovery – development of a Naturalized Knowledge System-based sustainable economy²⁴.

²³ This is based on my own field notes and observations with regards to the progress of Naturalized Knowledge Systems methodology within the three Malecu communities, the BriBri in southern Panama, the Maliseet of New Brunswick and the Kuna Indians of Panama.

²⁴ These five stages are taken from a unpublished document prepared by George Haas regarding the implementation of the Naturalized Knowledge System with the Maliseet of Tobique, New Brunswick.

The Naturalized Knowledge Systems methodology allows the researcher and community to list the pressures that are preventing recovery, and identify opportunities and challenges to “moving the community” towards recovery²⁵. As those pressures are identified and remediated over the long-term, the community will increase their potential to generate respect, equity and empowerment for their own projects, and may begin to reach out to others to share their successes. As their ability to fulfill their responsibilities increases, the community will also begin to seek the rights that serve as a broader social and political expression of the communities responsibilities. Securing these rights will also ensure that the broader regional, national or international community accepts the responsibilities of the community, and embraces them in their own policies and institutions.

Identifying the stage at which a community is in terms of the Naturalized Knowledge System will allow the researcher and community to develop realistic expectations regarding the full restoration of the Naturalized Knowledge System of the community. Indeed, establishing realistic expectations will be critical to the long-term relationship between the two or more communities involved in the project. So, too, will the recognition of the value of the Naturalized Knowledge System methodology both within and outside the community.

²⁵ During a meeting in Palenque Margarita in October 1999, I witnessed a moment when “sudden understanding” (sartori) overcame one individual. As he cursed, and ripped up a list of projects he had thought of the night before, and revised during the meeting, he exclaimed “now I understand what kind of projects are needed for us”. Arguably, this community is beginning to pass from stage 2 to stage 3.

Akwesasne serves as a dramatic example of the different stages of Naturalized Knowledge System methodology development. If we compare the situation at the initiation of the use of the Naturalized Knowledge System methodology in 1976 and the situation now, we can see a marked difference in the determination of the community to make positive environmental change at Akwesasne.

1976	2000
3 people working on environment	Over 50 people working on environment
One group working on environment	Many groups working together – including non-natives in other communities
No hope existed in community	"We can do it" mentality prevails
Pollution is the smell of money	"Get this stench out of our community"

It is clear that in 1976, the community was making a shift from stage 2 to stage 3. In the year 2000, the community has reached stage 5, where a Naturalized Knowledge System-based sustainable economy is in place and growing.

For the Malecu, the project work carried out to date indicates that they are still in stage 2, but that there are certain individuals beginning to enter stage 3. As discussed in the previous chapter, this creates tension in the community and creates the energy for progress. For example, some individuals will begin to do work on projects (like the education materials) which attract the interest (and jealousy) of others in the community. They will begin to think "why can I not do the same kind of project?". This will create the conditions where other individuals will spontaneously search for interesting projects that

have positive outcomes for the community. In this way, the entire community is “pulled” towards stage 3.

Conclusion – Where to apply the Naturalized Knowledge System methodology

“What is required are major and deep changes in our society’s political and economic structures. Until that occurs, citizen efforts, whether they seem successful or not, are severely limited in scope. That is not to diminish the need for the effort, but merely to remind political ecologists that their ultimate goals must be ones of major political and economic change.” (Warnock, 1982, p.39)

While lighting the smoky fire begins within community, it is important to recognize that we have a greater responsibility as global citizens to spread the smoky fire to all corners of the globe. “The solution is simply for us humans to join the earth community as participating members, to further the progress and prosperity of the bioregional communities to which we belong” (Berry in Walker, 188). As the Mohawk Council of Akwesasne has done, we must begin to spread the Naturalized Knowledge System methodology to corporations, local, national and international organizations and governments and universities. As the success of the Naturalized Knowledge System methodology grows, the benefits of its approach will mean a healthier environment, stronger cultural diversity based on respect, equity and empowerment and a brighter future for all of Earth’s citizens. Again, embracing the Naturalized Knowledge System methodology will allow us to understand and fulfill our responsibilities to each other and our “place” within the natural world.

Over time, it will be possible to incorporate the Naturalized Knowledge System methodology of community development into urban and suburban planning processes, both for the benefit of women’s safety in urban settings and the representativity of urban

“places” with regards to the cultural diversity of our cities. As the above has illustrated, the Naturalized Knowledge System methodology is complex and comprehensive. The experience of using the Naturalized Knowledge System methodology with the Malecu First Nation in Costa Rica²⁶ has proven that this methodology does work (with certain adjustments) with indigenous peoples in other parts of the world. The philosophy, the tools and experiences of the Naturalized Knowledge System methodology are transferable to others no matter their geographical location, their cultural background, their environmental degradation or their sense of desperation. The Naturalized Knowledge System offers hope and possibilities for all people, all communities, and all nations. It is effective at promoting a change in thinking and in prompting a desire to remediate the environment, even when it is used outside of its original cultural articulation at Akwesasne.

While the Mohawk Council of Akwesasne and other institutions (such as the Institute of the Environment at the University of Ottawa) continue to develop the Naturalized Knowledge System methodology for use with communities around the world, it is important to identify the opportunities and challenges the Naturalized Knowledge System methodology offers to communities, researchers and funding agencies. It is to these conclusions, and suggestions for further research that we now turn our minds to.

²⁶ As noted in Chapter 1, the Mohawk Council has used the Naturalized Knowledge System methodology with over 20 communities in 5 countries.

Chapter 6

Chapter 6 – Conclusion

The Gift From the Great Spirit

One day, an old man came to an Iroquois Village. He appeared very tired and hungry. As he walked through the village, he looked above the doors of each house for the clan symbol.

He came upon a house in which a turtle shell hung. The old man pulled the door open and asked for food and a place to rest for the night. The young woman took one look at the old man and immediately sent him away. As he continued walking, he came to a house of the snipe clan. At this house, he was called a beggar and the woman closed the door on him.

The old man tried the houses belonging to the Wolf, Beaver, and Eel Clans, among others, but was again refused and told to go away.

Finally, very tired and weak, he came to a house with a bear's head above the door. Another young woman answered his knock and the old man thought he would be again turned away. After looking at him and seeing how tired and hungry he looked, she invited him in. She gave him something to eat and then spread hides on the floor, and told him to rest until he was well enough to travel again.

The next day, the old man became very ill and had a high fever. The woman was very concerned and, as the old man became worse, her concern turned to worry. The young woman tried all of the medicines she had been taught to administer but nothing seemed to work. The old man then told her of a certain plant in the forest which he carefully described as where it was located. The woman had never heard of it or seen any plants such as the one the old man talked about, but as she had been taught to respect her elders, she did as he asked. As soon as she returned with the plant, he told her how to prepare it for medicine. The old man quickly recovered from the sickness after taking the medicine.

On many different days, the man became ill with different ailments. Each time, he would ask the woman to go into the forest for different kinds of plants and herbs; he would then instruct her how to make and prepare the medicines. After each time he took the medicines, he would become well.

One day, as the young woman was about to enter the house, she noticed a great shining light inside. At the entrance of her house stood a handsome man whose face shone like the sun. She was very frightened and her heart was full of great fear.

Finally, the young man spoke, "Fear not, for I am the Creator. I came here as an old man, going house to house for food and shelter. It was only you of the Bear Clan that fed me and cared for me while I was sick. The many times I was ill, you went into the forest for plants and herbs as I asked. For that reason, I have taught you the cures for

all of the sicknesses. From this day on, the knowledge of medicine will always belong to the Bear Clan, and it will be forever that the Bear Clan will raise the medicine men and women."

As a community builds knowledge about itself, its traditions and values, it can be said that it grows closer to its responsibility to the natural world that forms its "place". In so doing, it acquires knowledge which closes the distance between itself and the spiritual values which infuse it with meaning, purpose and identity. Knowledge may not always appear in the way in which we want it to, but with patience and responsibility, we learn ways of teasing the power of the knowledge from the world around us. Respect, peace and power will spread from our communities into the other nations of the world, bringing us closer together, and closer to a time when our place of responsibility will be restored.

Like the young woman of the Bear Clan in the story above, we have seen throughout this paper that the Naturalized Knowledge Systems can offer a powerful source of knowledge about our identities. These knowledge systems, when motivated by an appropriate methodology like the Naturalized Knowledge System methodology will assist any community to seek their own development, on their own terms and in their own right. Simply put, we must turn our minds to the world of knowledge which surrounds our place with the Earth, and build on the power of that knowledge by sharing with and learning from others.

The Naturalized Knowledge Systems methodology offers a critical building block in the process of restoration. Both as a measurement of and a tool in the development of community (nation etc;), the Naturalized Knowledge Systems methodology is the

foundation upon which a better global community can be built – one stone at a time.

We now turn our minds to the conclusions which can be drawn from this paper and the research carried out with the Malecu Indians of Costa Rica.

General Conclusions

As the urgency for active community development increases in many communities, like those of the Malecu, so too does the urgency to reform urban planning processes to include the voices and knowledge of women and other segments of the cities' populations. The Naturalized Knowledge System methodology has proven itself to be an effective tool in promoting both environmental restoration and changing thinking in the communities where it has been applied. Like the Malecu, other communities that have used the Naturalized Knowledge System methodology experience a resurgence in hope for the future, self-valuation and a desire to make positive change for the future of 7 generations.

In much the same way as a community continues to build on the success of small concrete projects, the Mohawk Council of Akwesasne continues to reach out to others to expand the community of Naturalized Knowledge System methodology researchers. Predictably, the change in thinking resulting from this broadened network will take place over the long term. Nonetheless, the immediate positive benefits of the Naturalized Knowledge System methodology are being felt in many communities in Canada, the United States, Mexico, Guatemala and Costa Rica.

Building on the change in thinking that results from use of the Naturalized Knowledge System methodology will continue to be the first priority in its application. As work with the Malecu and other nations progresses, the ability of researchers within and on the outside of communities involved in the Naturalized Knowledge System methodology will develop. This remains critical in order to further refine a “standardized” methodology which works regardless of location, viability of traditional lifestyles, or cultural difference. As the work with the Malecu demonstrates, the Naturalized Knowledge System methodology is effective outside of its original cultural articulation, even when applied by a non-native researcher. Furthermore, research work with the Malecu demonstrates that the “bare bones” of the Naturalized Knowledge System methodology could be used in any community, regardless of its challenges. The potential is great, then, to see the successful application of the Naturalized Knowledge System methodology in an urban or suburban planning setting.

Specific Conclusions

Many of these conclusions regard the efficiency and effectiveness of the Naturalized Knowledge System methodology. Considerations are made for the perspective of the community, the researcher and the funder¹. Further research will prove whether these conclusions are valid over the longer term.

¹ The funder can be a development agency, a university, a government department or a business/industry. The experience of those funding Naturalized Knowledge Systems methodology research is relatively similar, independent of their background.

The key concept to remember with the Naturalized Knowledge System methodology is that "everything is connected to everything". While this may seem "overstated" from a Western perspective, it is essential to retain the notion that the links between environment, human health, culture, language are artificial non-native separations and that the concept of "environment" for the Haudenosaunee naturally links these all into one concept of "responsibility" which must exist between all things in order for the "world to be right"². This concept of responsibility is best expressed in the Thanksgiving Address, used to open and close the community meetings of the Haudenosaunee. For us to truly understand the concept of "responsibility" between all of the components of the Thanksgiving Address, it is necessary to reflect on how these relate over a period of seven generations, at the sub-cellular, cellular, individual, group, community, nation, confederacy and spiritual levels.

Based on the experience of this research, it is possible to make the following observations about the Naturalized Knowledge Systems methodology:

The Community

1. the community accepts process because it validates their traditions and respects the structure and function of their society;
2. once over the North-South development dynamic (where the community expects Canadians to come with bags of money to solve all of their problems) the community does buy into the process because they understand the responsibility taken on by

² This difference in understanding the environment is not a problem. Instead, it again triggers the opposition of similarity and difference, creating the energy for innovation in our understanding of the environment.

the researcher/institution and the supporting community (in the Malecu case, the Mohawk Nation);

3. the community understands and embraces the long-term vision of the process;
4. as respect builds between the "parties", the community sees the open, transparent and inclusive nature of the process (initial meetings may respect tradition but the process reflects the whole community and the newer dynamics - such as the emergence of women's organizations etc);
5. while the benefits of the process are not immediate, the concepts of respect, equity and empowerment bring the potential of cultural restoration, pride, environmental health and human health - all reinforcing the political goal of self-preservation, self-determination and identity construction (as a community and a nation) - this is interpreted as a positive growth dynamic for the community; this allows the community to move beyond the immediate "survival" management and initiate their own progress;
6. **the process** of establishing respect, equity and empowerment between the researcher and the community does bring short term benefits - in the case of the Malecu this would be the attention brought to the sanitary conditions by the Costa Rican Ministry of Health;
7. where tension exists between the communities in question (as is the case with the Malecu), the Naturalized Knowledge Systems methodology is perceived to be an opportunity to focus on projects which restore trust and foster understanding - this leads to unity, cooperation and social harmony - ultimately this leads to a more

progressive nation built on solution-oriented problem solving, problem-specific project cooperation and environmental integrity;

8. The Naturalized Knowledge Systems methodology is not the only community development opportunity available but it is an exceptional opportunity because it provides **long-term** solutions to persistent problems that emerge as a result of social breakdown, language loss, cultural deterioration etc; and the links that exist between these issues and human health integrity;
9. neither community using the Naturalized Knowledge Systems methodology to build a relationship must engage in committing to do things for the other community that exceed the means of either community; this ensures that equity is in balance between the communities;

The Researcher

1. the Naturalized Knowledge System methodology is one that requires patience; the timeline is long but the sources of funding tend to be offered on a limited-horizon basis;
2. the inherent "tension" between long-term goals of the Naturalized Knowledge System methodology and the short-term deliverables of institutions (necessary for the maintenance of accountability and responsibility to the taxpayer or other funder) offers a possible source of threat to the integrity of the process; this creates a climate of compromise in a situation where compromise is not ideal (for example, if the long-term goal is to restore human health it is difficult to impose short term

compromises when their implications may be unknown over the long term) - from a research perspective this may mean that your goals (with the Malecu project the education materials) may appear to be farther off than desired;

3. With this type of long term process, it is difficult to expect your goals to happen within your own time frames. This has been demonstrated in the Malecu project by the need for a no-cost extension in order to meet the desired outputs of the funder (IDRC) - this is not a negative feature of the Naturalized Knowledge System methodology but simply the principal challenge it offers to the researcher, placed between the communities desires and the needs of the funder;
4. the Naturalized Knowledge System methodology is a complex process and the expertise to respond appropriately to forces in the community and the project develop over time. It must be retained that the ideas, solutions, problem-solving strategies offered by the Naturalized Knowledge System methodology are very much informed by the 850 years of the Haudenosaunee and the many years of the Mohawk nation (time immemorial). This being said, with access to proper guidance, the Naturalized Knowledge System methodology becomes very accessible because of its common sense approach to issues in community development;
5. The Naturalized Knowledge System methodology offers the researcher a possibility to be involved in a healthy, long-term relationship with great potential for respect generation (to self and others), equity (for self and others) and empowerment (for all involved);
6. The Naturalized Knowledge System methodology is an “engaged” process – it is difficult for the researcher to remain “at a distance” to observe the process at work;

they must, instead, become directly involved with the process of making change in the community and adjusting the process as necessary;

7. The Naturalized Knowledge System methodology must be "possessed" by the community; the community must take on the process as their own, resisting influence from outside "development processes" – this means that the researcher should seek participation from within the community as much as possible;
8. The Naturalized Knowledge System as a constructive, positive social force has great potential for those who can embrace its tenets and respect the concept of responsibility;

The Funding Agency

1. The Naturalized Knowledge System methodology is a process which presents many challenges because it is "foreign" in its nature and approach to the issues of community development - it is, for example, a very active process which does not simply observe change BUT effects change; this provides particular challenges to "objective" research or "passive" research approaches;
2. The Naturalized Knowledge System methodology is a long-term process and is *not necessarily* an easy fit to short-term deliverables; the short-term deliverables are attainable but may change based on the needs of the community (as time passes);
3. The Naturalized Knowledge System methodology offers the opportunity to take responsible action on behalf of a community with their guidance and support - this offers long-term relationships which are more "natural" and sustainable;

4. The Naturalized Knowledge System methodology offers an effective resource "dispersion" strategy for funders: because part of the process is based on generating resources with the community, the potential to harness greater resources with less seed money does exist. This may mean funders can fund more projects with longer time horizons and fewer resources;
5. The concept of responsibility poses a longer term "moral obligation" in that the community's expectations are ever-present in the relationship. Often, large institutions associate responsibility with "risk" but for the Naturalized Knowledge System methodology it represents opportunity to further relationships and strengthen the concepts of respect, equity and empowerment;
6. The Naturalized Knowledge System methodology is not a one-stop solution to all problems BUT it is an evolving process - it does offer a comprehensive alternative to other models of community development;
7. The Naturalized Knowledge System methodology is a very flexible and adaptive **process**; it may be possible to take current materials and adapt them to reflect the Naturalized Knowledge System methodology as the key to success in these instances will be in the delivery of the material to the community;
8. The Naturalized Knowledge System methodology has great potential for work in First Nations communities and non First Nations communities around the world.

Based on these observations, it is possible to make the following suggestions for future work on the Naturalized Knowledge System methodology:

1. The concept of distance from the “natural world” or living in a “natural state” must be considered with regards to its impact on the potential for the Naturalized Knowledge System methodology to function effectively in a community – it is possible to conclude from this project that the farther removed a society is from its environment, the greater challenges the Naturalized Knowledge System methodology will have in restoring health to that society;
2. It must also be considered whether increased distance from living in a “natural state” imply changes only to the factor of time in restoration, or also to the scale on which restoration must happen;
3. The factor of time must also be studied: for example, the experience with this project demonstrated that constant communications with the communities was necessary in order to maintain credibility and was required to effectively continue to build the process; this implies the need to add to the 6 basic principles of the Naturalized Knowledge System (see chapter 3) the concept of “time as a critical resource” – this is particularly critical in an international development context – this would build on Tuan’s observation that “people, may simply be predisposed to associate the distant with the timeless” (Tuan, p. 122);
4. Building on the success of the work with the St. Lawrence River Institute of Environmental Sciences and the Eastern Ontario Model Forest, further research about whether the Naturalized Knowledge System methodology can be applied in non-indigenous communities as a form of development should be explored; this can be done within the context of sustainable city research (planning for safe cities, for example) or the re-building of eastern Europe and post-war countries like Kosovo,

Somalia or Indonesia – this will allow for the further exploration of the linkage between the notions of knowledge, place and identity;

5. As an extension to the above, it is suggested that the Naturalized Knowledge System methodology be tested in situations in which the participant community (or communities) are either living in a very “harmonious” way with nature and face new threats (for example, Southern Guatemala or Southern Costa Rica) or are attempting to re-build from complete devastation of their Naturalized Knowledge (Davis Inlet, for example).

As alluded to above, further work on the Naturalized Knowledge System methodology will continue to develop and refine the Naturalized Knowledge System methodology process for use in community development. The Naturalized Knowledge System methodology holds great potential for communities to “repossess” their culture, community and future.

It is now time to turn our minds to the closing – where we give thanks for the words we have spoken/written in this paper.

Closing³

We have now arrived at the place where we end our words. Of all the things we have named, it was not our intention to leave anything out. It may be that something was forgotten; we leave it to each individual to send such greetings and thanks in their own way.

In the ways of the Haudenosaunee, we must always remember that we are not perfect, that we can and will make mistakes. As a people, we must acknowledge these errors for they reflect our responsibilities to the Creator and to the Confederacy. This acknowledgment reminds us to be humble in our thoughts and deeds, but also that through the Good Mind of all of our people, we will always be able to fulfill our responsibilities. It is with this in mind that this paper has been prepared. We hope that this is one of many such papers to come in the future.

Now our minds are one.

³ This has been adapted from *Words That Come Before All Else*, Native North American Travelling College, Cornwall Island (1999).

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Glossary of Terms

Glossary of Terms

Akwesasne –	Mohawk Community located on the St. Lawrence River near Cornwall, Ontario.
Great Law of Peace -	The Great Law of Peace or Gayanerekowa is the “founding constitution” of the Six Nations Iroquois Confederacy (Haudenosaunee). It is the Peace Maker that brought these oral traditions, codified in wampum belts, to the people of these nations. The Great Law is both the expression of the functions of the Grand Council and a mechanism for the resolution of disputes between the nations. See, for example, Newhouse, Seth. “The Constitution of the Confederacy by the Peacemaker”, 1897 with revisions done by Chief Jacob E Thomas (1989), Sandpiper Press, Jake Thomas Learning Centre, Wilsonville, Ontario.
Haudenosaunee -	The member nations of the Haudenosaunee, or the Six Nations Iroquois Confederacy, have existed in what is now known as southern Ontario, southern Quebec and New York State for many thousands of years. The name “Haudenosaunee” means “People of the Longhouse”. The Confederacy is made up of the Mohawk, Oneida, Onondaga, Cayuga, Seneca and Tuscarora Nations. It is nationally governed by the Grand Council of Chiefs which meets at Onondaga, the central council fire, or capital of the Confederacy. The Confederacy is governed in accordance with the Great Law of Peace, or Gayanerakowa.
Howa –	rural community in Sudan where author Cindi Katz carried out her research on the relationship between gender and spatial concepts.
Malecu –	name of the First Nation located in the Guatuso region of Northern Costa Rica.
Maliseet –	name of First Nation located near Perth-Andover in New Brunswick, Canada.
Mohawk –	name of First Nation member of Haudenosaunee.

- Ojibway – First Nation located in Central Canada.
- Seven generations – this is the total number of generations which an individual will ever know during their own lifetime: great grandparents, grandparents, parents, siblings, children, grandchildren and great grandchildren. When thinking about our responsibilities and the impact of our actions or inactions, we must be aware of their effects for seven generations. This serves as a concrete and visible motivator to take responsible action on behalf of our communities.
- Subsistence activities – this refers to activities which allow an individual, family, etc; to procure enough for the use of their own family or community, not for sale to others.
- Sustainable responsibility – this implies acting out our responsibilities to ensure a sustainable future seven generations.
- Thadoda:ho – historically, the Thadoda:ho was the “most evil” person whom the Peacemaker approached to convert to the Great Way of Peace. His role is now as Faithkeeper for the Haudenosaunee, and the First Chief among all Chiefs of the Confederacy.
- Tobique – a community of the Maliseet First Nation, located near Perth-Andover in New Brunswick, Canada.
- Wolastokwik Negoot-Gook – Maliseet name for the Maliseet Nation at Tobique.

Appendix I

Naturalized Knowledge System (NKS)

Cause → Effect + E₁ + E₂ + E₃ + E₄ + E₅ + E₆ + E₇

Scale	sub-cellular	cellular	individual	Group	Community	nation	confederacy	Spiritual
Identity development	gene	embryo	birth	Cooperation/ partnership	Project	research program	exchange of environmental capacities	Knowledge of self (find self in environment)
length of time	micro-seconds	seconds	hours	Days	months	years	decades	Centuries
# of people	<1	<1	1	>1	>100	<100k	>100k	∞
spatial scale	<μm ²	<mm ²	<10m ²	>10m ²	<100km ²	<1000km ²	global	Universal
examples of identity building actions or effects of interactions between identity and Naturalized Knowledge System		harmony with the mother-first environment	socialization	Education Exchange Betterment of self	Partnership Confidence in self	bettering knowledge, link with technologies	definition of nationality, resources for restoration, environmental integrity	Knowledge of Self and of national values
	Sickle cell anemia, diabetes	pollution, alcohol metabolism	songs stories food	Hunting, tracking, trapping	Restoration, re- building well	resources inventory, resource management, planning	external relations, trade	link between body and spirit re-made
Complexity	Certainty	↔	Process of Growth → → → → → → →					⇒ Chaos

(Adapted from Lickers 1997)