



The Australian Journal of **INDIGENOUS EDUCATION**

This article was originally published in printed form. The journal began in 1973 and was titled *The Aboriginal Child at School*. In 1996 the journal was transformed to an internationally peer-reviewed publication and renamed *The Australian Journal of Indigenous Education*.

In 2022 *The Australian Journal of Indigenous Education* transitioned to fully Open Access and this article is available for use under the license conditions below.



This work is licensed under the Creative Commons Attribution 4.0 International License. To view a copy of this license, visit <http://creativecommons.org/licenses/by/4.0/> or send a letter to Creative Commons, PO Box 1866, Mountain View, CA 94042, USA.

NĒHĪTHĀWĀK *of* REINDEER LAKE, CANADA: WORLDVIEW, EPISTEMOLOGY *and* RELATIONSHIPS *with the* NATURAL WORLD

HERMAN MICHELL

Department of Science, First Nations University of Canada, University of Regina, 1 First Nations Way, Regina, Saskatchewan, S4S 7K2, Canada

■ Abstract

The purpose of this exploratory article is to illustrate the worldview, epistemology and relationship with the natural world from a Nēhithāwāk (Woodlands Cree) perspective. The contents of the article represent a personal narrative of an educator of Woodlands Cree cultural heritage from the Reindeer Lake area of northern Canada. A brief history of the Woodlands Cree is shared in order to provide a context for my perspectives as “an insider” of this way of life. This is followed by an attempt to articulate fundamental key concepts in relation to traditional Woodlands Cree education, worldview, epistemology, language, values and practices as they are informed by relationships with the land, plants and animals. The text is highly subjective and culturally contextualised.

The inherent right to practice our traditional beliefs was given to us when the Creator first put the red man here on earth ... In times of great difficulty, the Creator sent sacred gifts to the people from the spirit world to help them survive. This is how we got our sacred pipe, songs, ceremonies and different forms of government. These were used for the good health, happiness, help and understanding for the red nation ... [Each tribe] had our own sacred traditions of how to look after and use medicines from the plant, winged and animal kingdoms (Cree Elder Dennis Thorne in RCAP, 1996, Vol. 3).

■ Introduction

To date, most of that which has been written about the Woodlands Cree of Reindeer Lake in northern Canada is from the worldview and perspectives of non-native writers, historians, missionaries, fur traders, cartographers, anthropologists, ethnographers and scientists (e.g., Brightman, 1989, 2002; Cockburn, 1983; Darveau, 1999; Downes, 1943; Siggins, 2005; Smith, 1987). In this paper I use the term “Woodlands Cree” to refer to a specific group of First Nations peoples in Canada. The Woodlands Cree also commonly identify themselves as “Nēhithewāk”. I use the term “Aboriginal” to refer to First Nations, Metis and Inuit who are recognised under section 35 of the Canadian Constitution (1982). I use the term “Indigenous” to refer to the original peoples (worldwide) who have a long-term connection, relationship and occupancy of a particular geographical land base. I use the term “First Nations” to refer to the diverse Indigenous peoples in Canada who are connected to “treaties” and “reserves” under the Indian Act. The voices of the Woodlands Cree as writers of their own experiences and knowledge are by and large missing from this discourse. The absence of Woodlands Cree perspectives in the area of education is especially problematic given that teachers at all levels of the system are increasingly being challenged to develop and implement curriculum from the foundation of Aboriginal community contexts. This article represents a personal narrative of an educator of Woodlands Cree heritage. It is an attempt to articulate fundamental key concepts in relation

to traditional Woodlands Cree education. The text is highly subjective and culturally contextualised. I cite sources where appropriate.

My words are based on personal and collective-based experiences of living in northern Saskatchewan and Manitoba within a Woodlands Cree trapping family. It is also based on a set of reflections that revolve around my interest in articulating Indigenous-based science education from a Woodlands Cree perspective. More importantly, this article is the synthesis of all the stories that have been shared with me by relatives too numerous to mention. I have absorbed these stories in oral form and constructed them within the parameters of my worldview, prior experiences, personal limitations and idiosyncratic tendencies. Prior to contact, Woodlands Cree teachings were transmitted orally, and in the Cree language. I have heard the stories in Cree but I have written this article in English in order to share my emerging understandings of Woodlands Cree culture. I apologise ahead of time for any misrepresentations.

In Woodlands Cree society, Khîtyâk (elders) are highly respected for their wisdom and knowledge. We regard them as our first teachers and philosophers. In traditional times, one had to earn the right to speak and pass on cultural knowledge. Today, teachers are shouldered with this responsibility as they spend a considerable amount of time with students. I am not an elder and so I am limited in my knowledge ways. In light of that, and in humility, I do not claim cultural expertise. I ask readers to take what they need from what I have to say and leave the rest. Khîtyâk often say the Woodlands Cree way of life cannot be learned entirely from the written word; it must be lived and experienced. Learning about Cree culture and knowledge is a life-long process. No-one will ever know all there is to know about the great mystery of life. The best I can offer is a brief sketch of a culture that is dynamic and constantly changing as a result of over 500 years of continuous impacts from social, political, economic and historical forces.

During colonial times, traditional Woodlands Cree knowledge and practices were considered “pagan”, “demonic”, and often relegated as nothing more than old folklore with no significance in the modern world. More recently, Western-trained scientists have begun to interrogate these old assumptions and have found a wealth of untapped knowledge that is critical to the survival and long-term sustainability of the planet (Knudtson & Suzuki, 1992). I believe the Woodlands Cree of Reindeer Lake have a lot to share that has yet to be articulated and expressed. We not only share a common worldview with other Indigenous peoples around the world. We also share a history of colonisation and a strong vision to preserve and transmit our way of life. Articulating this worldview can provide a window from which we as “humans” can recover our sense of place in an increasingly fragmented world.

■ The Woodlands Cree of Reindeer Lake

My people, the Woodlands Cree of Reindeer Lake, are Indigenous to northern Manitoba and Saskatchewan. Historically, we were an oral people associated with the Montagnais, Naskapi, Ojibwe, Attikamek and the Beothuk peoples of Canada. Our Cree language belongs to the Algonkian branch of the Algonkian-Wakashan linguistic stock (Siggins, 2005). The word “Cree” originates from the “Kenisteniwuk” peoples (Ojibway) who lived south of James Bay in the seventeenth century (Brightman, 2002). The French used the word “Kiristinon” which was later contracted to the word “Cri” and then “Cree” which is now commonly used when speaking in the English language. The Cree are the largest and most widespread Indigenous group in Canada, occupying land in northern Quebec, and in Ontario, Manitoba, Saskatchewan, Alberta and British Columbia. Although we all speak the same language, we are linguistically diverse by dialect reflecting our places of origin. We are the Woodlands, Plains, Swampy, Moose, Attikamek and East Cree. In the 1996 Canadian census, 76,475 people identified Cree as their mother tongue (Steckley & Cummins, 2001).

My cultural identity is deeply rooted in the northern landscape. My maternal Kôkum (grandmother) was Inuit. Her ancestors are the Padlimiut who also identified themselves as “People of the Willows”. Their traditional hunting territories were north of Yellowknife, specifically northwest of Windy Lake centering on the Kazan River ranging up and down from Hicolijjuak-Yathkyed or Frozen Lake to Ennadai Lake. Although my mother has an Inuit background, she spoke fluent Woodlands Cree and was socialised into Woodlands culture through traditional adoption and marriage.

My paternal great grandparents are Michel Tâwîpîsîm (half sun) and Apîkôsis (mouse). My father’s family lineage can be traced back to inter-marriages between the Dene people who occupied the Reindeer Lake area in northern Saskatchewan and the Woodlands Cree families who migrated up the Reindeer River from Pelican Narrows during the early 1800s. Many Woodlands Cree families are known to have lived up and down the Churchill River for centuries. We are known to have identified ourselves with ancestors of Asînskâwî thî nîwâk or “People of the Country with Abundant Rock” (Brightman, 1989). More generally, our ancestors are known to have occupied river systems along the Hudson Bay and inland areas of the Boreal Forest in northern Manitoba and Saskatchewan. We identify ourselves more broadly as NĒhĪthĀWĀK (meaning those who speak the same language). My people speak the “th” dialect. Our Cree way of life is often referred to as “NĒhĪthĀWĀY PĪMĀTĪSĪWĪN”.

The Woodlands Cree are culturally diverse. Widespread migrations across Canada and inter-racial marriages are common in a multicultural Canada. We

are internally heterogeneous by several social markers that include gender, class, ethnicity, politics, sexual orientation and most notably by religious affiliation as a result of over 100 years of residential schooling and colonial-based assimilation policies (Milloy, 1999). On one end of the cultural continuum there is a revival of Cree traditionalists and on the other end we have those who have been heavily influenced by Euro-Western Christian ways. Somewhere in between are those who walk in multiple worlds in pride. Still there are those of us who are completely lost and unsure of our identity. We are made up of sub-cultures within sub-cultures. Oglala Sioux, Ed McGaa (Eagle Man) illustrates the respect Indigenous people have for cultural diversity through the interdependent relationship they have with the natural world:

If we thoroughly explore Nature, we can see that Creator obviously favors diversity. We creations are diverse as night and day, yet we are all related and interdependent because of the Mystery of the great unseen force that bestowed so many attributes, gifts, and powers with even the tiniest of creatures. Even within our own species, our minds, memories, and personal experiences make us diverse from each other (McGaa, 2004, p. 14).

Despite our rich cultural diversity, people who identify themselves as Nēhīhāwāk live in the following First Nations communities in Manitoba: Brochet, Pukatawagon, Granville Lake, Nelson House and Southern Indian Lake. In Saskatchewan, they live in Kinoosao, Southend, Pelican Narrows, Lac La Ronge, Stanley Mission, Cumberland House and Sandy Bay.

Theories of an eastern migration of the Cree precipitated by the early fur trade era have been suggested; however, archeological evidence reveals the Woodlands Cree moved to their present territories long before Euro-settler contact (Smith, 1987). David Meyer (1987) has summarised archeological evidence, known as the Selkirk composite, and concludes Cree occupation of northern Manitoba can be traced back to the AD 1200s (cf. Brightman, 2002, p. 7). More recently, Maggie Siggins (2005) has written about the Woodlands Cree and reveals archeological discoveries (the Oxbow complex) in northern Saskatchewan and Manitoba in which arrowheads have been uncovered dating back to 2500 BC and earlier. These findings shatter the infamous Bering Strait theory that we somehow trekked across from Europe during the ice age into what is now known as North America. The fact of the matter is that ancestors of Asīniskāwī thī nīwāk were hunting on their lands 4000 years before contact with Europeans. More importantly, the evidence suggests the Woodlands Cree have had a long history of cultural and linguistic development within the confines of their traditional territories. This

is supported by our traditional stories that are borne out of collective memory and long-term relationship with the land.

The region in which Reindeer Lake is situated in northern Saskatchewan is part of the Canadian Shield. It is a land dominated by boreal forest with rocky terrain sculpted by glaciers and intermittent deposits of sand (known as eskers), clay, gravel and muskeg. There are thousands of rivers, lakes and sandy beaches all with their unique character. It is this land that provides the contextual foundation for the Woodlands Cree way of life. It has and continues to shape our worldview, language, philosophy, epistemology, language, values, beliefs and practices. My family's traditional trapping block is a huge territory on the eastern shores of Reindeer Lake. This is where my ancestors lived and hunted. Theirs was a sustainable and nomadic lifestyle moving according to the seasons, cycles and movements of the animals they depended on for survival. Our traditional Woodlands Cree science and the technologies that were used revolved around these natural patterns and practical day-to-day activities. Our campsites were numerous and include Paskwachi Bay, Wolverine Lodge, Kinoosao (Co-op Point), down to White Sand dam. Our lives, stories, experiences, challenges, births and deaths are written all over this landscape. Kinoosao was one of my family's campsites. It later became a community settlement and then, more recently, one of Peter Ballantyne Cree Nation's small reserve sites. Kinoosao is located mid-way on Reindeer Lake on the eastern shore.

■ Woodlands Cree worldview and epistemology

Like other Indigenous peoples, the Woodlands Cree of Reindeer Lake have their own worldview and epistemologies that are tied to the land and passed on from one generation to another. Woodlands Cree way of life involves cultivating a fundamental interconnected consciousness through the vehicle of education and through a common language with unique linguistic concepts that express and reinforce our thinking patterns, values and sense of relatedness. These in turn guide our social and individual actions in the ways in which we build our families and communities (Weber-Pillwax, 2001). Environmental scholar, Fien (1993, p. 72) defines worldview as a "set of ideas, assumptions, beliefs, and ethical values – both individual (unique) and cultural (shared), which is that person's view of reality and which colors perception, thinking and action. It is both a filter and a processor". The concept of Indigenous worldview acts as a cultural framework and lens from which epistemology or ways of knowing can be understood.

Indigenous epistemologies are guided by Indigenous worldview frameworks that provide a lens for different perceptions of knowledge and ways of thinking and acting on complex problems and natural

reality. Simonelli (1994) and Barman, Hebert and McCaskill (1987) define epistemology as the study of the nature, transmission, attainment, methods and validation by which something is known. Epistemology is central to educational inquiry and the development of curriculum. According to Simonelli (1994, p. 2) epistemology is focused on answering, "How do we know what we think we know?". Moore (1998) has written about Native American epistemology and states that regardless of culture, the fundamental questions in the study of epistemology include: How is knowledge structured? How is it acquired? How is it evaluated? How do we know when something is true? More recent questions have included who controls knowledge and how is it integrated in society? Pomeroy (1992) and Kawagley (1990) argue the examination of epistemology in science education is crucial in making science a more cross-cultural institution.

Woodlands Cree epistemology is holistic in nature and represents both personal and collective contextual consciousness. Our ways of knowing can be characterised as a complex and integrated system of knowledge that cannot be separated from the land, cultural context and the people of Reindeer Lake without losing meaning. The combination of Woodlands Cree worldview and language concepts are important in developing conceptual frameworks that embrace our traditional philosophies, epistemologies, methodologies, cultural values, spiritual beliefs, ceremonies and practices. These in turn provide a foundation for the development of our Woodlands Cree communities, societal institutions, governments and organisations.

The Woodlands Cree worldview acts as a cultural lens from which the world is viewed, experienced and made meaningful. It acts as a filter through which impressions of all entities and beings are holistically ordered. It involves a set of assumptions and beliefs that constitute our collective orientation and comprehension of the world. Our worldview orientation of what it means to be human among the Woodlands Cree is premised on the individual's experiences with the sacredness of Kichî Muntô, the Creator of all life. Experiences are based on a sea of interconnected relationships and alliances that are all fundamentally infused with sacred energies. Our Woodlands Cree way of life includes learning practical methods of survival unique to our northern environment along with our spiritual ceremonies, stories, songs, dances, drums, symbols and metaphors, all of which help us to develop an interconnected consciousness and balanced existence. Embedded within these cultural tools and vehicles of communication are complex teachings, codes and ethical principles of living with and through the natural world. These cultural codes are transmitted from one generation to the next through the Cree language within the context of families, schools and communities.

Our Woodlands Cree way of life is guided by values of respect, compassion, generosity and love for all our "relations" around the sacred circle of life. This respect is based on a philosophy of interdependence and co-existence with other beings, and the inherent responsibilities and obligations involved in maintaining these relationships. Cree scholar Stan Wilson (1999, p. 1), refers to this concept of interconnectedness as "self-in-relation-to-everything-else" and "relational accountability". The Cree value of humility teaches that no one group of people possess all answers to the great mystery of life. Indigenous educator Eber Hampton (1995) reminds us that "we live in a world of many cultures, all of which have different standards. It is not necessary to devalue the standards of Western society, except insofar as they claim to be the only worthwhile standards" (cf. Battiste & Barman, 1995, p. 37). All native and non-native peoples and their knowledge bases occupy an equal place on the Medicine Wheel of life. The notion that Euro-Western knowledge is superior to Indigenous ways of knowing disrupts the balance. Truth and knowledge are perceived in different ways depending on the worldview from which they are defined. What is considered truth under one paradigm of knowledge may not necessarily be so in another. Nevertheless, the Woodlands Cree have always respected different perceptions of truth because spirit lives and manifests in different forms throughout the cosmos. The Woodlands Cree concept of non-interference allows people to live out their lives according to their collective and personal perceptions of truth. As gifts of truth and knowledge are shared, we take what we need out of respect in order to become whole and complete. We decide what works in our own lives, what works for a specific situation, and then determine what needs to be left behind.

Woodlands Cree epistemology is participatory, experiential, process-oriented, and ultimately spiritual. Woodlands Cree ways of knowing require participation with the natural world with all of one's senses, emotions, body, mind and spirit, under the guidance of elders, cultural teachings and values. Although Cree people have diverse cultural traditions and practices, we share a tendency to live in the world according to the natural rhythms of the land. Our ways of knowing involve active participation with and through the natural world. Learning is based on experiences that are built on other experiences as learners continually engage in the social construction of knowledge. Learning takes place through the process of "doing" and through day-to-day "practical" activities. Traditional concepts embedded in Cree culture and language cannot be learned solely through abstraction, from a textbook or in a classroom, all of which are detached from the land. Knowledge is fragmented and decontextualised. Learning is not meaningful when it is disconnected from the everyday world. It is also problematic to translate Cree language concepts

to the English language. Meaning is lost through translation; understandings are bastardised. Learning about Woodlands Cree culture is a life-long endeavour that requires active and continuous engagement. The culture must be lived and experienced, as cultivating the intellect alone is inadequate for the task of making a person whole and complete. Cree ways of knowing involve not only the mind but also the heart, feelings and emotions. The goal of teaching in Woodlands Cree contexts revolves around the mental, spiritual, emotional and physical development of each child. Age-appropriate activities are designed and focused on developing the whole child in all four dimensions while connecting them to the land inevitably resulting in individual and community health.

In the Woodlands Cree belief system there are both physical and spiritual laws that govern the universe. What is done in one realm is mirrored in the other. The sacred and the secular are not separate. The idea of being alienated from the world is problematic in Woodlands Cree society as "one is never really alone". Woodlands Cree people live a spiritual existence with a value system that guides daily life and all interactions within the physical realm. Cora Weber-Pillwax (2001, p. 151), a Métis, has written about the Woodlands Cree and explains, "each interaction requires its own set of protocols and practices based on particular history, knowledge, understanding, and experience". There is one creator. Ways of worship and spiritual practices are tools that help humans connect to the Great Spirit. There are many tools in different cultures that serve the same purpose. While Woodlands Cree ceremonies are normally open to people from different cultural backgrounds, some practices are not openly shared with others. Still, the concept of claiming ownership of Cree cultural ways that act to frame how we view the world is problematic because nothing really belongs to humans. The Cree ethic of reciprocity teaches that what you take you must share and give back. The concept of teaching children to give back to the community is still highly valued in Woodlands Cree communities. As humans we all come from spirit and we all return to spirit in a never-ending natural cycle. Time is circular. The earth nurtures our living bodies and when we die, our bodies return and become part of the earth. A perfect reflection of this cycle and transformation is the mythical figure *Wisâkêchâk* in our traditional Cree stories. *Wisâkêchâk* reflects the notion of flux, change, continuity and interconnectedness as it transforms itself into various forms and crosses spiritual and physical boundaries, in order to teach people life lessons. These traditional stories have often been dismissed by Western academics as mere legends that no longer have any value. However, once these stories are deconstructed, hidden meanings and teachings reveal themselves. These hidden lessons are important for the continuity of the Woodlands Cree way of life.

The Woodlands Cree concept of interconnectedness is linked to the importance of building relationships and developing alliances. Coming to know the natural world from a Woodlands Cree perspective is characterised by a balance of coming to know one's self, and building relationships across cultures and with other life entities. This understanding resonates with the concept of "cultural border crossing" in science education advocated by Aikenhead and Huntley (1997) and Aikenhead and Jegede (1999). From a socio-cultural theoretical perspective (Nieto, 2002), science is regarded as a sub-culture of Euro-Western peoples (O'Loughlin, 1992). It is a cultural tool that is used to come to know the natural world (Cajete, 2000). Indigenous people have their own forms of science based on their worldviews that is different and similar to Euro-Western-based science. Many Indigenous students whose worldview differs from the worldview transmitted by school science may undergo an experience of cultural shock that may hinder learning. The notion of "cultural border crossing" refers to ways of assisting students in developing skills that will allow them to move back and forth between their own culture and the culture of science thereby enhancing knowledge of the natural world. In Woodlands Cree contexts, it is important that educators have some sense of the Woodlands Cree culture, worldview, values and practices in order to become effective cross-cultural border facilitators. Common concepts need to be identified as a starting point for teaching children while respecting different cultural viewpoints. However, it is extremely important to understand, Woodlands Cree cultural knowledge needs no validation from Euro-Western knowledge systems. It stands on its own.

■ Woodlands Cree relationship with the land

Woodlands Cree cultural identity, ways of knowing and language are linked by a deep reverence and spiritual relationship with the land. It is a minute-by-minute, second-by-second spiritual existence. The Euro-Western scientific notion that humans are somehow separate from the natural world is problematic for Cree people who do not see nature as something external to them. Cree people also do not sub-divide and fragment the natural world into small units such as biology, chemistry and physics; rather, the Woodlands Cree regard all life as being mutually interdependent. In referring to the Bush Cree of northern Quebec, Adelson (2000, p. 29) states the "history of the people and the history of the land do not simply correspond to each other – they are one and the same". Cajete (2000, p. 187) agrees, "Native people interacted with the places in which they lived for such a long time that their landscapes became reflections of their very souls". We are part of nature and nature is a part of us. The Woodlands

Cree people are an intricate part of the Woodlands Cree context. We are the context. When the land and resources are misused and destroyed, Cree people and their ways of life are profoundly affected. When one aspect of nature is destroyed, all life forms are impacted. It is like throwing a pebble in a pond with reverberating repercussions.

The entire earth is a sacred place from which all knowledge flows. All entities, human and non-human, share the same spiritual breath of life. Ancestors who pass on become part of the living earth, landscape, elements, animals and plants. It has been said that we walk on the dust made from the bones of our ancestors thus our deep respect and reverence for land and environment. We personify the Land – as our Mother Earth. It has memory. According to Cajete (2000), the land experiences us as we experience her. From this perspective, the concept of “experience” is extended beyond “human experience and agency” to embrace the concept of “interspecies experience” as humans are not superior to any other life form. To displace and disconnect Woodlands Cree people from the land is to sever the umbilical cord and life-blood that nurtures an ancient way of life. Our Cree way of life requires that we maintain a balanced and interconnected relationship with the natural world. This intimate relationship is based on a spiritual belief that a sacred force resides in all living and non-living entities. Because this force resides in our midst, Cree ways of knowing flows from and is anchored in multiple spiritually imbued entities in which humans are only one source. It is an energy that imbues everything in the natural world. To us, everything is alive (animate and inanimate). Everything is sacred. From an Indigenous worldview, all living things are endowed with a conscious spirit (Snively & Corsiglia, 2001). From this understanding Woodlands Cree knowledge is manifested in different forms some of which is practical and learned through day-to-day activities that revolve around survival. Our people also possess empirical knowledge that is learned from careful observations of the natural world over extended periods of time. There are other types of knowledge that link with ceremonial ways that need to be handled with extreme sensitivity. This “revelatory” knowledge is often accessed through elders’ guidance, consultation and preparation; using proper protocols, including dreaming and visioning. Certain knowledge is given to people when they are ready to receive it.

Woodlands Cree Khītiyāk, parents and other significant family members play a critical role in the transmission of Cree culture and language. In traditional times, it took a whole community to raise a child. Still today, it is not uncommon for aunts, uncles, and cousins to play the role of mentors, role models, teachers and substitute parents. Elders possess years of experience and are rich repositories of knowledge and wisdom. Family involvement in Woodlands Cree schools and classrooms is extremely important in the

process of contextualising the learning experiences of students. Coming to know the natural world from a Woodlands Cree perspective is not a separate discipline in isolation from everyday living. Learning takes place within the messiness and complexity of life. I warn educators to avoid looking for simple, one-dimensional solutions to the complex challenges of teaching in Woodlands Cree contexts.

The Woodlands Cree worldview provides a conceptual framework and foundation for Woodlands Cree teaching methods that include, and not limited to, the following: developing learning themes based on traditional seasonal cycles and patterns in the natural world; sustained contact with natural environments; using traditional knowledge and stories to connect with real life issues; exploring the use and benefits of traditionally developed technologies; utilising Cree resource people and elders in curriculum planning, development, implementation and evaluation processes; experiential learning and hands-on activities; using books and materials with Woodlands Cree images and symbols; observation; trial and error; experimentation; apprenticeship; peer mentoring; sharing circles; drawing; painting; singing; drumming; making models; traditional games; ritual and ceremony; creative visualisation; and using storytelling as a means to cultivate critical thinking skills.

■ The Woodlands Cree creation story

The Woodlands Cree creation story and other types of *âcîmôwinâ* (narratives) serve to reinforce a holistic worldview and interconnected link between humans, nature and the supernatural. It is from these stories that Cree people learn about their stewardship relationship with the natural world. Cree stories contain hidden messages, instructions, moral lessons and ways of living in harmony with all things that grow from the ground, the four-leggeds, those that swim, fly and crawl, and all two-leggeds, who occupy the four corners of the earth. According to Wilson (1999) a violation of these sacred teachings is called “Pâstâh-hô-win” in the Cree language. He states, “individuals are accountable for their own actions, and those who do not accept this responsibility are subject to the consequences of natural justice even to seven generations” (1999, p. 1). We treat other beings as if they were a part of ourselves. Because we are part of Creation, it is hard for us to differentiate or separate ourselves from earth that nurtures us. This link is represented in our Cree creation story.

There are many variations of the Cree creation story (Brightman, 1989); however, core teachings and values remain intact. In one version the Woodlands Cree mythical being, Wisâkêchâk, finds himself floating on a wooden raft after the great flood. Before the rains began, the Creator had given him careful instructions to prepare, gather and store moss that he would

need later to recreate the earth. He did not listen to this wisdom and guidance when it began to storm and the water started rising. When the rain stopped, Wisâkêchâk found himself floating helplessly as the entire earth was covered with water. He called Amîsk (beaver), "*âstâm nîsîmî*" (come here my younger sibling) "see if you can dive down to get some moss for me". Amîsk dove down, but the bottom was too deep. He drowned on the way down. The next day, he saw Nîkîk (otter) playing and enjoying himself a short distance from the raft. Wisâkêchâk called him over. "Nîsîmî, please help me, I need you to get me some moss for me so that I can create earth". Nîkîk agreed and dove down and Wisâkêchâk waited and waited, but Nîkîk did not come back up. He too had drowned. By the third day, Wisâkêchâk was desperate, hungry, and worried that he would soon starve to death. All of a sudden Wâchâsk (muskrat) appeared from nowhere so Wisâkêchâk called him over and gave him the same instructions that he had given to Amîsk and Nîkîk. Wâchâsk dove down deep into the water. He came up three times without any moss. On the fourth attempt, Wisâkêchâk waited and waited. Just when he was about to give up, bubbles came to the surface of the water. Wâchâsk appeared with moss in his mouth. He was weak and had almost drowned so Wisâkêchâk pulled him up onto the raft and restored him back to life. Following the original instructions and protocols that he was given by the Creator, he squeezed the water from the moss and blew on it. This was how Wisâkêchâk recreated the earth.

In the Woodlands Cree culture, nothing is taken from the land without proper protocols of respect and without several generations in mind. The way Woodlands Cree people interacted with the earth, how they utilised the plants, animals and mineral gifts was always done keeping in mind their sacred obligations. When taking plant, animal or any other life, rituals were performed with great care because it was the spirit of that being that was being asked to make a sacrifice so that people can live. Prayers, tobacco and other offerings such as food are often made to pay homage to the Great Mystery that nourishes and flows through all life. Taking plant and animal life disrupts balance in the natural world. Tobacco is used as a medium between the physical and spirit world. The act of offering tobacco is an act of humility that restores harmony. Tobacco offerings reflect the ethic of reciprocity in the Cree culture. It helps people remember their reciprocal and interdependent relationship "with all our relations". According to Cree language educator Donna Paskemin (2000), the closest English translation of Cree protocol, is "the correct way of doing things" or, in other words, "doing things in a good way". Food is usually blessed with prayers followed by setting aside small bits of food on a small plate. It is a way of honouring the ancestors in the spirit world by serving them first. This plate of food

is then placed in a natural setting as a way of "giving back" and honouring the life of the animal and plant spirits that gave up their lives for our own survival.

The traditional lifestyle of the Woodlands Cree people is one of trapping, hunting, fishing and gathering. It is an active, physical and healthy way of being. From this lifestyle, the Woodlands Cree observed the animal and plant worlds and studied how the world sustained itself with a natural sense of order, relatedness, connectedness and pattern. They integrated themselves into this natural order through long-term observations and development of technologies transformed into collective memory. Kawagley, Norris-Tull and Norris-Tull (1998) have researched and written about northern people's ways of knowing in relation to scientific knowledge. They argue the technology that these Indigenous people used did not "spring out of a void" and that their inventions "could not have been developed without extensive scientific study of the flow of currents in the rivers, the ebb and flow of the tides in the bays, and the feeding, sleeping, and migratory habits of fish, mammals, and bird" (1998, p. 136). Woodlands Cree way of life depends on living in harmony with nature through continuous reciprocal relationships based on respect extending from the individual, family, community and land. Nature provides a blue print of how to live well and all that is necessary to sustain life. Teaching and learning about and through the natural world from a Woodlands Cree worldview requires sustained contact with the land.

Woodlands Cree knowledge of the natural world is reflected in the traditional art forms and cultural symbols used in the design of clothing. The designs and colours used in beadwork on moose-hide moccasins, jackets and mitts depict animal and plant symbolism that help people remember their interconnectedness to the land. Aside from their aesthetic beauty, beadwork designs reflect the inseparable relationship humans have with all our relations. In the Cree belief system, women took great care and effort to please the animal and plant spirits by creating beautiful designs on clothing and hunting tools. It was thought it was the animals that would ultimately choose to become available to the hunters. From one perspective, it was the spirit imbued in the moccasins and snowshoes that lead the hunter to his prey. Connected to this belief in pleasing the animal spirits is the teaching of keeping the family dwelling clean and in good order. If one is negligent or shows lack of respect, it was thought the animals would not see the value of giving themselves to the hunter and hence his family (Adelson, 2000).

■ Woodlands Cree relationship with the animal world

Woodlands Cree people have a strong kinship with the animal world. Humans share the same spiritual breath of life with animals. We share the northern landscape

with our animal relatives that we depend on for survival. Animals are a food source. More importantly, the Woodlands Cree consider animals as teachers and healers because their knowledge of the natural world exceeds that of humans. Animals are often personified as our closest relatives with their own characteristics, consciousness and sacredness. Because of their close connection to the Creator, animals are known to mediate transformational powers for humans in ceremony and prayer. In the Woodlands Cree spiritual belief system, it is not uncommon for animals to become the Pâwâkân spirit (guardian) of young people after going through the traditional vision quest ceremony. There are many vision quest sites that have been found on Reindeer Lake and other places within the boreal forest. Pictographs on rocks found in these sites often include sketches of various animals, eagles, wolves, bears, fox, lynx, moose, caribou, bear, mice, beaver and muskrats. These animals have characteristics, responsibilities and symbolic ways of being that are often emulated by people. When observed very carefully, animals reveal many secrets of living in balance and harmony. It is believed that animals have certain powers that can be used for personal, family and community health and survival.

Traditional Woodlands Cree conservation practices are based on an ethic of reciprocity and harmonious relationship with the land. Nothing was wasted. Animals were hunted, prepared and utilised with great care. Whatever could not be used was given back to the earth for other animals to feed on. According to Cree belief system, if an animal is mistreated, it was thought the spirit would leave the hunter. The hunter would never be able catch this type of species again. The impact could mean starvation for an entire family. Woodlands Cree knowledge and practices revolve around the cyclical patterns of nature and seasonal activities. Certain animals cannot be hunted depending on the season. Hunting territories are allowed to regenerate from time to time in order to prevent depletion of species. When big game is scarce, freshwater fish are a year-round food source and include lake trout, whitefish, pickerel, pike, grayling and sturgeon.

■ Woodlands Cree relationship with the plant world

Woodlands Cree peoples have an intimate relationship with the plant world. We occupy natural environments that give birth to a variety of ecosystems filled with unique species of plants, herbs, grasses, trees, berries and other living things that grow in the northern boreal forest context (Marles et al., 2000). Plants are sources of food and medicines. Every plant has medicinal value as well as a role and responsibility connected to all other life forms. Medicinal properties in the plants are eaten by insects, animals, birds and fish and then consumed by humans creating a natural

indirect pharmaceutical effect. Plants, stems, leaves, roots, animals and their body parts are eaten at certain times of the year in order that the medicine will have the effect that is needed. Medicines are picked with great care under specific conditions and instructions. Plants are considered the hair of Mother Earth. It is often said the earth feels the pull of her hair when plants are picked. Strict protocols are used to ensure ethical conduct and restoration of balance.

Woodlands Cree people have long been knowledgeable about the healing abilities of Mother Nature. Herbalists, midwives, shamans, medicine men and other specialists have been gifted with various forms of medicinal knowledge. Many of these traditional health practitioners were groomed for many years that far surpass the amount of time it takes to become a doctor in today's world. In Woodlands Cree epistemology, ways of knowing are passed on when one is prepared and ready to receive them. Preparation for apprentices requires the learner to lead a balanced healthy lifestyle free from alcohol, drugs and other toxins that serve to cloud the spirit. Years of observation, experimentation, trial and error, and revelatory knowledge are all instrumental in understanding which parts of plants and animals can be used to heal specific ailments. Some aspects of Cree knowledge belong to a certain family or a particular society and cannot be openly shared. Knowledge has power. It has the power to heal and strengthen an entire community and it also has the power to do great harm. There are many stories of theft, and misuse of knowledge resulting in sickness (Wolfart & Ahenakew, 2000).

■ Walking in balance using Woodlands Cree values

Walking in balance requires learning about Woodlands Cree values that are used to guide daily behaviour. Maintaining a healthy existence in the Woodlands Cree culture is based on a balance of the inner and outer landscapes. Balance at the inner level is about maintaining a multidimensional equilibrium of physical, emotional, spiritual and intellectual development. Woodlands Cree people have cultural tools and teaching methods that allow for development in each dimension. However, a certain practice that works for one person may not necessarily work for another person. Openness and flexibility is encouraged. Health involves a continuous assessment of these four dimensions within the context of family and community relatedness.

Balance at the outer level is about maintaining respectful interconnected, reciprocal and sustainable relationships beginning at the individual level embracing family, community, nation, and extending out toward the environment, plants, animals, and cosmos. In order for the individual to be healthy the land must be healthy. There is no separation between

humans and land. We are one and the same. The major cause of ill health is the inability to maintain inner and outer balance. People become sick when they live in an unbalanced way as the concept of interconnectedness teaches that all things must work in harmony for the good of the whole (Bopp et al., 1988).

The ability to develop and maintain a sacred interconnected consciousness and sense of relatedness depends in part on exercising individual will power and the cultivation of a holistic worldview and value system. According to Cree writer Michael Hart (2002), there are four main values that include truth, kindness, sharing/caring, and honesty with off-shoots of the other values that may stem from this core group. Each value is represented by different symbols. Symbols are used to convey meaning. They are also used as mnemonic tools to help people remember these values. The values and symbolic system shown in Table 1 represent an example of Nêhîhâwâk thought ways and belief system. One interpretation of these values and symbols is outlined below.

Tâpôwâkêythî tâmôwîn (Truth): Spiritual realm

The value of truth is connected to living a spiritual existence. Ideally, one's spirituality should be as solid as a rock, allowing one to walk through many circles in pride, without fear, with an open mind, and embracing every aspect of Creation. Truth comes from searching within, communication, respect for diverse perspectives, and development of unconditional relationships based on love. Truth is relative, as all life is imbued with spirit and the capacity to teach. To harm another spirit through thought and action is to harm the very spirit that lives in you. Truth is reflected in the pipe bowl that is made out of rock as well as the mountains in the west. The breasts on the human body are symbolic of rock and therefore, truth.

Kîsêwâtisôwîn (Kindness): Emotional realm

The value of kindness is the foundation for all relationships with oneself and others. In order to live a healthy balanced lifestyle, one must be kind to body, mind and spirit that is reflected in the three strands of the human braid (hair). Plants, especially grass, are often used to demonstrate the power of kindness. Even if you put a fence or wall to divide yourself from others, grass will grow over, under, sideways, and any

way possible to reach and connect. That is the way of kindness. Tree fungus, tobacco, sage, sweet grass and cedar are medicines that are often used in ceremonies for smudging purposes and are symbolic of kindness as they come from the plant world. The smoke from the smudge rises up and carries your prayers to the spirit world. Sweet grass is braided in three to symbolize the importance of purifying "body, mind and spirit" so that one is prepared and clean enough to be in the presence of the Creator.

Asâkîwîn (Sharing/Caring): Physical realm

The value of sharing and caring is fundamental to maintaining relationships. To become connected with others, one must share and care about them as if they were your closest *wâkômâkânâk* (relatives). The Woodlands Cree are extremely generous people. When we have visitors, we provide our best food, best clothing, and ensure they are comfortable so they can continue on their journey. There is a belief in the Cree culture a visitor may be the Creator in disguise. Sharing and caring also build relationships of trust allowing an avenue where poisons can be exposed and discarded as part of the healing process. Sharing and caring must be done unconditionally without judgment as reflected in the spirit of the animals who do this with freedom and ease. Birds in the sky often fly in pairs, demonstrating and reminding us of sharing and caring. Animals teach sharing by giving their lives to provide food and clothing for humans. In a reciprocal way, humans will have to give their lives in death and become part of the earth and food for the plants and animals. Sharing and caring is reflected in eagle feathers, leather or any kind of animal symbols used in ceremonies. The groin area on the body represents a symbol of sharing and caring.

Tâpwîwîn (Honesty): Mental realm

The value of honesty is essential in all human affairs. Being honest is about telling the truth which connects back to the spiritual realm. In traditional hunting societies, honesty was highly valued as it meant the very survival of an entire community. The tree is often used as a symbol to reflect how easy it is to violate honesty. The branches reflect the different paths we take when we are dishonest. It is important to find our way back to the center and core (teachings). Honesty

Table 1. Values and symbolic systems representative of Nêhîhâwâk thought ways.

Cree values	Nature symbols	Pipe symbols	Body symbols
Truth	Rock symbol	Pipe bowl	Breasts
Kindness	Plant symbol	Tobacco	Hair
Sharing/caring	Animal symbol	Leather on pipe	Groin
Honesty	Tree symbol	Pipe stem	Spine

is reflected in the pipe stem that is made out of a tree. It is also reflected on the body as the spine reflected in the outline of a tree.

Conclusion

In conclusion, I have illustrated the link between Woodlands Cree education, cultural context, worldview, epistemology, language, belief system, practices and values of the Woodlands Cree people. In order to counteract negative cross-cultural transitions experienced by Woodlands Cree students, it is important that educators develop curricula, instruction and assessment processes based on an articulated Woodlands Cree worldview. This means taking the very best from the past and present in order to co-construct knowledge that reflects contemporary realities of Woodlands Cree people. We have always borrowed from other cultures knowledge, tools and technologies in order to improve the quality of our lives, but always keeping in mind how these accommodations affect those yet unborn. In an increasingly multicultural world, all people and their knowledge ways occupy an equal place within the sacred circle of life. The presence of the mythical being *Wísâkêchâk* in our thinking patterns symbolically challenges the static, linear, universal and objective nature of Euro-settler positivistic-based knowledge ways that are now increasingly being challenged by multicultural scholars. *Wísâkêchâk* teaches there is always a possibility that even the most highly esteemed curriculum theories and guidelines are subject to flux and change. *Wísâkêchâk* often shows up in our traditional ceremonial dances. He moves counter-clockwise against the grain of the natural circular rhythms of the other dancers to remind us of the complexity of life. *Wísâkêchâk* teaches about the coming apart and the coming together of things as reflected in the changing nature of paradigms, theories, ideologies and epistemologies related to education in response to the emerging contributions of Indigenous peoples in a postcolonial world.

References

- Adelson, N. (2000). *Being alive well: Health and the politics of Cree well-being*. Toronto: University of Toronto Press.
- Aikenhead, G., & Jegede, O. (1999). Cross-cultural science education: A cognitive explanation of a cultural phenomenon. *Journal of Research in Science Teaching*, 36(3), 269-287.
- Aikenhead, G. S., & Huntley, B. (1997). *Science and culture nexus: A research report*. Regina, SK: Saskatchewan Education.
- Barman, J., Hebert, Y., & McCaskill, D. (1987). The challenge of Indian education: An overview. In J. Barman, Y. Hebert & D. McCaskill (Eds.), *Indian education in Canada: The challenge (Vol. 2)* (pp. 1-21). Vancouver: University of British Columbia Press.
- Battiste, M., & Barman, J. (1995). *First Nations education in Canada: The circle unfolds*. Vancouver: University of British Columbia Press.
- Bopp, J., Bopp, M., Brown, L., & Lane, P. (1988). *The sacred tree*. Lethbridge, AB: Four Worlds Development Project, University of Lethbridge.
- Brightman, R. (1989). *Acaobkiwina and Acimowina: Traditional narratives of the Rock Cree Indians*. Hull: Canadian Museum of Civilization.
- Brightman, R. (2002). *Grateful prey: Rock Cree human-animal relationships*. Regina: Canadian Plains Research Center.
- Cajete, G. (2000). *Native science: Natural laws of interdependence*. Sante Fe, NM: Clear Light Publishers.
- Cockburn, R. H. (1983). North of Reindeer: The 1940 trip journal of Prentice G. Downes. *The Beaver*, (Spring), 36-43.
- Darveau, P. G. (1999). *52 Years with Cree and Dene of Keewatin: The Pas*. Montreal, QC: National Library of Canada.
- Downes, P. G. (1943). *Sleeping island*. New York: Coward-McCann.
- Fien, J. (1993). *Environmental education: A pathway to sustainability*. Geelong, VIC: Deakin University Press.
- Hampton, E. (1995). Towards a redefinition of Indian education. In M. Battiste & J. Barman (Eds.), *First Nations education in Canada: The circle unfolds* (pp. 5-46). Vancouver: University of British Columbia Press.
- Hart, M. (2002). *Seeking mino-pimatisiwin: An Aboriginal approach to helping*. Halifax: Fernwood Publishing.
- Kawagley, O. (1990). Yup'ik ways of knowing. *Canadian Journal of Native Education*, 17(2), 5-17.
- Kawagley, A., Norris-Tull, D., & Norris-Tull, R. (1998). The Indigenous worldview of Yupiaq culture: Its scientific nature and relevance to the practice of teaching of science. *Journal of Research in Science Teaching*, 35(2), 133-144.
- Knudtson, P., & Suzuki, D. (1992). *Wisdom of the elders*. Toronto: Stoddart Publishing Company.
- Marles, R., Clavelle, C., Monteleone, L., Tays, N., & Burns, D. (2000). *Aboriginal plant use in Canada's northwest boreal forest*. Vancouver: University of British Columbia Press.
- McGaa, E. (2004). *Nature's way: Native wisdom for living in balance with the earth*. New York: Harper Collins Publishers.
- Meyer, D. (1987). Time depth of the Western Wood Cree occupation of northern Ontario, Manitoba, and Saskatchewan. In W. Cowen (Ed.), *Papers of the 18th Algonquin Conference* (p. 389). Ottawa: Carleton University.
- Milloy, J. (1999). *A national crime: The Canadian government and the residential school system [1879-1986]*. Winnipeg: University of Manitoba Press.
- Moore, J. (1998). Truth and tolerance in Native American epistemology. In R. Thornton (Ed.), *Studying Native America: Problems and prospects* (pp. 271-305). Madison, WI: University of Wisconsin Press.
- Nieto, S. (2002). *Language, culture, and teaching: Critical perspectives for a new century*. Mahwah, NJ: Lawrence Erlbaum publishers.
- O'Loughlin, M. (1992). Rethinking science education: Beyond Piagetian constructivism toward a sociocultural model of teaching and learning. *Journal of Research in Science Teaching*, 29, 791-820.
- Paskemin, D. (Ed.). (2000). *Traditional Nebiyaw Plains Cree protocol lecture series as told by Elder Myron Paskemin*. Edmonton: Canadian Indigenous and Native Studies Association.
- Pomeroy, D. (1992). Science across cultures: Building bridges between traditional Western and Alaskan Native sciences. In S. Hills (Ed.), *History and philosophy of science in science education (Vol. 2)* (pp. 257-268). Kingston: Faculty of Education, Queens University.

- Royal Commission on Aboriginal Peoples. (RCAP). (1996). *Report of the Royal Commission on Aboriginal People (Vols. 1-3)*. Ottawa: Minister of Supply and Services.
- Siggins, M. (2005). *Bitter embrace: White society's assault on the Woodland Cree*. Toronto: McClelland & Stewart Ltd.
- Simonelli, R. (1994). Sustainable science: A look at science through historic eyes and through the eyes of Indigenous peoples. *Bulletin of Science Technology Society*, 24(1), 1-12.
- Smith, J. (1987). The Western Woods Cree: Anthropological myth and historical reality. In D. Miller, C. Beal, J. Dempsey & H. Wesley (Eds.), *The first ones: Readings in Indian/native studies* (pp. 81-90). Piapot: Saskatchewan Indian Federated College Press.
- Snively, G., & Corsiglia, J. (2001). Discovering Indigenous science: Implications for science education. *Science Education*, 85(1), 6-34.
- Steckley, J., & Cummins, B. (2001). *Full circle: Canada's First Nations*. Toronto: Prentice Hall.
- Weber-Pillwax, C. (2001). Orality in northern Cree indigenous worlds. *Canadian Journal of Native Education*, 25(2), 149.
- Wilson, S. (1999). Honouring our relations: Aboriginal spirituality as comprehensive relational accountability. *Canadian Social Studies*, 33(3), 76.
- Wolfart, H., & Ahenakew. (2000). *They knew both sides of medicine: Cree tales of curing and cursing told by Alice Ahenakew*. Winnipeg, MB: University of Manitoba Press.

■ About the author

Herman Michell is an Assistant Professor and the Department Head of Science at the First Nations University of Canada. Herman was raised by his parents who are both trappers in the remote community of Kinoosao, Reindeer Lake, in northern Saskatchewan. He speaks fluent Woodlands Cree and has Inuit, Dene and Swedish ancestry. Herman has extensive involvement in First Nations communities. He has worked in the field of Aboriginal education for over a decade in different capacities that include student counsellor, teaching, research and service. He is currently pursuing a PhD at the University of Regina in the area of curriculum and instruction. His research interest involves decolonising science curriculum at all levels of the education system in order to make learning relevant, meaningful and culturally affirming for Indigenous students. At the age of five years old, Herman was taken from his home and placed in a Catholic residential school. For the past several years, he has made numerous presentations of his experiences as a male survivor of childhood trauma. He has a Masters Degree in Education from the University of British Columbia specialising in curriculum and instruction and has completed graduate coursework in education psychology and special education. He received a Bachelor of Arts degree majoring in sociology from the University of Winnipeg in 1990. As a professor, Herman has travelled extensively both nationally and internationally (South Africa, Netherlands, England, South America, West Indies). At home in Canada, he regularly visits First Nation communities and schools encouraging youth to pursue careers in science, health and technology.