

Traditional Ecological Knowledge, Interdisciplinarity and Indigenous Knowledge

Michael Hankard, PhD

University of Sudbury

Abstract: The nexus between traditional ecological knowledge, interdisciplinarity and Indigenous knowledge is often misunderstood. This article explores the essential nature of traditional ecological knowledge within Indigenous knowledge and the usefulness of interdisciplinarity within Indigenous research. Because traditional ecological knowledge, interdisciplinarity and Indigenous knowledge are often approached from within disciplinary silos, this article questions inherent connections within and between them and whether artificially-imposed divisions originating from outside Indigenous knowledge are appropriate and more importantly, consistent with Indigenous ways of knowing. Using a medicine circle and eagle feather, this article also illustrates how Indigenous teachings on balance support the use of interdisciplinarity in decolonizing research involving First Nations.

Keywords: Traditional ecological knowledge, interdisciplinarity, Indigenous knowledge, colonialism, decolonizing, environment, natural resources, Indigenous ontology

Résumé : Le lien entre le savoir écologique traditionnel, l'interdisciplinarité et le savoir aborigène est souvent mal compris. Cet article explore la nature essentielle du savoir écologique dans le cadre du savoir aborigène et l'utilité de l'interdisciplinarité à l'intérieur de la recherche aborigène. Parce que le savoir écologique traditionnel, l'interdisciplinarité et le savoir aborigène sont souvent envisagés dans une perspective disciplinaire, cet article met en question les relations inhérentes à l'intérieur et entre ces domaines, de même que pertinence des divisions artificiellement imposées de l'extérieur du savoir aborigène et, plus important encore, leur conformité avec les modes de connaissance aborigènes. Cet article illustre aussi comment les enseignements aborigènes sur l'équilibre soutiennent l'emploi de l'interdisciplinarité comme moyen de décolonisation de la recherche sur les Premières Nations, en utilisant la roue de médecine et la plume de l'aigle.

Mots-clés : Savoir écologique traditionnel, interdisciplinarité, savoir aborigène, colonialisme, décolonisation, environnement, ressources naturelles, ontologie aborigène

Interdisciplinarity provides many opportunities for culturally appropriate research involving First Nations people. Complex areas, such as traditional ecological knowledge (TEK) and the environment, which have often been studied through a disciplinary lens, benefit from exploration that integrates multiple perspectives. This approach allows scholars to answer research questions that “cannot be satisfactorily addressed using single methods or approaches” (Klein, 1990, 196), as well as preserving, incorporating and integrating cultural values. Having the ability to draw from multiple perspectives and integrate them into culturally appropriate research also frees researchers from disciplinary constraints they might otherwise encounter.

This article explores some of the characteristics associated with using interdisciplinary approaches to explore TEK and how it may be useful to researchers. These include points of divergence from monodisciplinary approaches, the advantages of using interdisciplinarity in First Nations research, and how the interdisciplinary nature of Indigenous worldview supports the use of interdisciplinarity in First Nations research. This paper also describes the concept of interdisciplinarity and how it relates to TEK from a First Nations worldview based on understandings of the medicine circle and eagle feather teachings.

Interdisciplinary and Monodisciplinary Research

Before discussing the usefulness of interdisciplinary approaches in TEK, it is important to explore key differences between interdisciplinary and monodisciplinary research. Interdisciplinarity has been defined as “a methodology, a concept, a process, a way of thinking, a philosophy, and a reflexive ideology” (Klein, 1990, 196); as “the interaction between two or more disciplines” (Salter and Hearn in Shailer, 1996, 186) or “as combining in some fashion components of two or more disciplines” (Nissani, 2008, 1). Klein states that interdisciplinarity is

“a means of solving problems and answering questions that cannot be satisfactorily addressed using single methods or approaches” (1990, 64). It “signifies a new way of knowing” (Klein, 1990, 96). According to Klein, there are two main types of interdisciplinarity – “endogenous interdisciplinarity” which aims to produce new knowledge and “exogenous interdisciplinarity” which participates in questioning the borders that exists between disciplines (Klein cited in Shailer, 1996).

Many reasons have been cited as advantages for using interdisciplinary approaches in research. These include the “synergy of multiple perspectives and discipline-specific methodologies in addressing major social and political issues” and “engagement with real-world problems, cultures, environments” (Shailer, 2005, 6). Further, it allows one to engage in “creative breakthroughs” that link “previously unrelated ideas,” as well as avoiding errors that may be made in disciplinary research when one is confined to a narrow, focused set of conceptual ideas (Nissani, 2008, 2). Nissani states that “Many problems require holistic approaches” and that “Interdisciplinary research combines components of two or more disciplines in the search for new knowledge or artistic expression” (2008, 1). Finally, interdisciplinarity has been recognized for its pluralistic nature. Klein states that “It rests, first of all, on a traditional claim for seeing the whole instead of just the disciplinary parts” (1990, 95).

Interdisciplinary research involves integrating information from “various fields of knowledge” into a single form of analysis (Klein, 1990, 56-57). It includes an interaction between two or more disciplines that can vary from “the simple communication of ideas to the mutual integration of organizing concepts, methodologies, procedures, epistemology, terminology, data and the organization of research and education in a fairly large field” (Salter and Hearn in Shailer, 1996, 186). Nissani states that “interdisciplinary help us to see the various components of human knowledge for what

they are: pieces in a panoramic jigsaw puzzle.” Further that “reality itself is not divided into neat disciplinary blocks: the world is one” (2008, 4). According to Aboelela:

Interdisciplinary research is any study or group of studies undertaken by scholars from two or more distinct scientific disciplines. The research is based upon a conceptual model that links or integrates theoretical frameworks from those disciplines, uses study design and methodology that is not limited to any one field, and requires the use of perspectives and skills of the involved disciplines throughout multiple phases of the research process (2007, 341).

Scholars have defined disciplinarity in different ways. Salter and Hearn state that it is difficult to define disciplinarity because “it means adherence to and respect for the intellectual structures we call disciplines that were largely in place in the modern university by the end of the 19th century” (Salter and Hearn in Shailer, 1996). In the 1990s, some scholars began to associate disciplines with negative forms of political or social control, such as a “repressive form of border control” and “prison houses” (Shailer, 1996). Further, Weingart and Stehr assert that disciplines are “not only intellectual but also social structures, organizations made up of human beings with vested interests based on time investments, acquired reputations, and established social networks that shape and bias their views on the relative importance of knowledge” (Weingart and Stehr cited in Shailer, 1996). Nissani states that “the intellectual, social and personal price of narrow compartmentalization has often been remarked upon” (2008, 3). Finally, Klein contends that:

The modern connotation of disciplinarity is a product of the nineteenth century and is linked with several forces: the evolution of the modern natural sciences, the general “scientification” of knowledge, the industrial revolution, technological advancements and agrarian agitation (1990, 21)

Advantages of Interdisciplinary Approaches in Traditional Ecological Knowledge Research

There are several advantages to using an interdisciplinary approach in First Nations environmental research. First, drawing from Indigenous knowledge and Western research approaches allows the potential for developing and understanding connections between them. Indigenous knowledge, which forms the basis for TEK, has approaches rooted in the notion that our existence is part of an interconnected or interdisciplinary universe. This differs from monodisciplinary approaches asserting that such interconnections can be explained through specific disciplines. Second, one may explore answers to questions originating within multifaceted knowledge areas that would seriously strain or broach any disciplinary borders. One cannot fully explicate TEK without first understanding the Indigenous worldview. Third, many research questions require that the approaches of more than one discipline be used to fully answer questions under analysis.

Justification for Interdisciplinary from a Western Point of View

From a Western world view or ontology, interdisciplinary approaches are useful because they engage in the “integration and synthesis” of two approaches to produce original knowledge (Brewer, 1995 in Chettiparamb, 2007, 13). They are the “intellectual equivalent of traveling in new lands” (Nissani, 1997, 201). This differs from transdisciplinary approaches in which “the attempt is to integrate disciplines to the extent that the disciplines themselves disappear and a unitary type of inquiry emerges” (Stember, 1991 in Chettiparamb, 2007, 14). Klein notes that there are many complexities associated

with conceptualizing interdisciplinarity and states “Ask three scientists what interdisciplinarity means and they will likely give three answers” (Klein in Stehr and Weingart, 2000, 3-4).

Interdisciplinarity includes the synthesis of information from two or more disciplines to produce original knowledge that cannot be produced using either discipline independently. This closely resembles that of “border interdisciplinarity” in which “both disciplines can make a contribution because each has worked in the area, yet neither one can supply sufficient concepts, methods and tools by itself” (Klein, 1990, 65). Interdisciplinary approaches should be considered for exploring TEK not only because of its complementary effect, but also because it provides a more holistic way of answering research problems. This involves multi-faceted approaches and focusing on the social interaction of our interrelationship with life and society.

Disciplinarity can hinder the production of knowledge within First Nations research. Weingart and Stehr illustrate that human factors play a major role in the creation of borders within disciplines, such as “time investments, acquired reputations, and established social networks that shape and bias their views on the relative importance of their knowledge” (2005, 3). Knowing this, preconceived notions about what is research-worthy may obstruct projects in the area of First Nations TEK, especially when entering a new terrain of research. Interdisciplinary approaches are also beneficial because “Interdisciplinary researchers enjoy greater flexibility in their research” and further the “defence of academic freedom” (Nissani in Chettiparamb, 2007, 16).

Interdisciplinary approaches in TEK research are directly tied to Indigenous beliefs on balance. Indigenous approaches are rooted in the overall concept of balance within the individual comprised of balance within the mind, body and spirit. In general, this approach

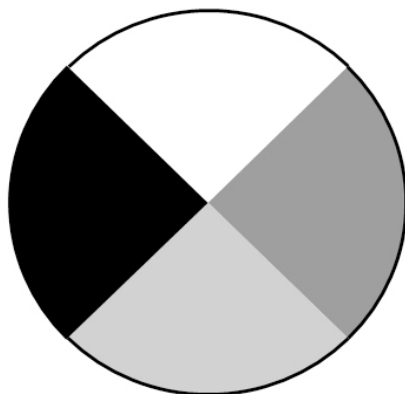
draws elements of various disciplines, such as psychology (mind), physiology and medicine (body) and religion or philosophy (spirit) to address overall wellness in the individual. In terms of this way of understanding, environmental unwellness, even though indirectly linked to the broader social and cultural contexts, often originates within broader relations.

Integrating Indigenous knowledge approaches with Western research approaches synthesize traditional Indigenous learnings on the mind, body and spirit creates a unique methodology for conducting research. It also provides a different way of conceptualizing Indigenous knowledge approaches to TEK from those of Western practices and philosophy. In keeping with Indigenous perspectives, this holistic view asserts that no one segment of our being or the natural world exists within a “silo.”

Interdisciplinary approaches applied to First Nations TEK research also require understanding Indigenous knowledge, which is interdisciplinary by nature, and avoiding the pitfalls of Western research practices that are “organized primarily along disciplinary lines” (Klein, 1990, 140). In discussing healthcare, Klein notes that “patients are sliced into body systems and problems categorized by disease entities” (1990, 140). Mol’s ethnographic study of medical practices in the Netherlands illustrates disciplinary attitudes of surgeons who may refuse patients because they exhibit a physical problem outside their area of specialization. This is evidenced by statements that they are “only good at unplugging vessels and your vessels are in no need of unplugging” (Mol, 2002, 63). Mol further states that “In the patient’s file this life is not summed up; only the so-called medical problems are listed, one after the other” (2002, 127).

Interdisciplinarity and Indigenous Ontology

The Medicine Circle



Interdisciplinarity plays a key role in Indigenous environmental research because it involves Indigenous people and is grounded in Indigenous values, philosophy and beliefs. The medicine circle, which is circular, represents the interdisciplinary nature of Indigenous thought. The interconnection of Creation¹ is central to Indigenous beliefs and has been echoed by contemporary Indigenous scholars. Observations have been made that “The entire circle is an Indigenous research paradigm. Its entities are inseparable and blend from one into the next. The whole paradigm is greater than the sum of its parts” (Wilson, 2008, 70). It differs from monodisciplinary research because “Analysis from a Western perspective breaks everything down to look at it. So you are breaking it down into its smallest pieces and then looking at those small pieces” (Wilson, 2008, 119). Further, that “We’ve been

¹ This would include, for example, the interconnection of the four elements of Creation – the mineral, the plant, the animal and the human. However, it is not limited to that and includes the mind, body and spirit, the universe, the connection of this universe to other universes etc.

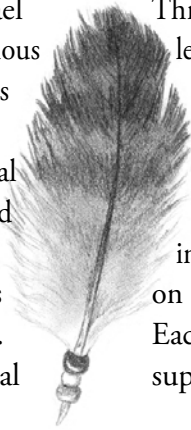
trained to be separated because the Western tradition teaches us to separate our head from our heart and our spirit as well” (Wilson, 2008, 119). In describing this concept through the analogy of fishing net, it was explained that “You could try to examine each of the knots in the net to see what holds it together, but it’s the strings between the knots that have to work in conjunction in order for the net to function. So any analysis must examine all of the relationships or strings between particular events or knots of data as a whole before it will make any sense” (Wilson, 2008, 120).

The Eagle Feather

The relationship between interdisciplinarity, TEK and Indigenous knowledge can also be illustrated through traditional learnings on the eagle feather as shared with me by Elder Michael Thrasher (2008). Indigenous people understand the sanctity of eagle feathers and recognize the special relationship that the eagle has with the Creator and humankind (Thrasher, Phillips). There are many different learnings that correspond to eagle feathers, but, as I have often been told, they are collectively all originating back to the Creation story of our people. In this context, Anishinabek people assert that we exist holistically as interdisciplinary beings. We are comprised of three distinct parts of our being that make us complete individuals, but also social and cultural in character through our connection to everything around us. To describe how this relationship exists, we examine how the main parts of our being exist in conjunction with each other, functioning both independently and dependently, in a way that illustrates our interdependence on Creation. The eagle feather is one of many tools we use to describe these concepts and relationships. In these learnings, the concept of balance, as it pertains to individual and community wellness, can be expanded to include environmental wellness and TEK.

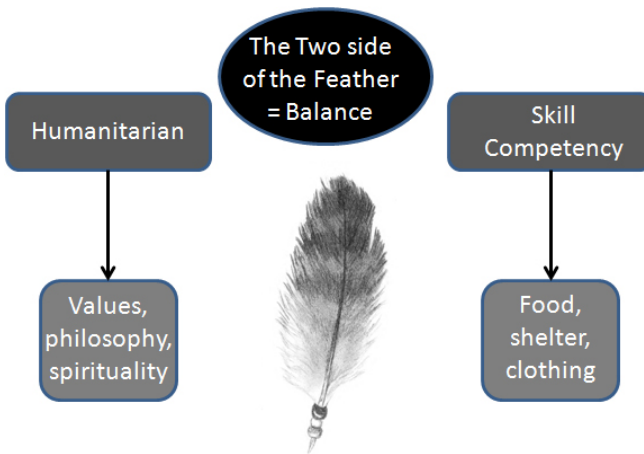
The Feather Illustrates the Concept of Balance

According to Elder Michael Thrasher, the notion of balance can be articulated in Indigenous learnings using a feather (2002-2009). The feather represents balance and symbolizes our life journey and harmony that can exist when the elements of our being coexist in equal proportion. Balance in one side of the feather, evidenced by equality among its attributes, will provide the same attributes in the other side of the feather. The feather, like learnings on balance, conceptually refers to the duality of Creation. Each side is needed to support the other to achieve mutual support and wellness.



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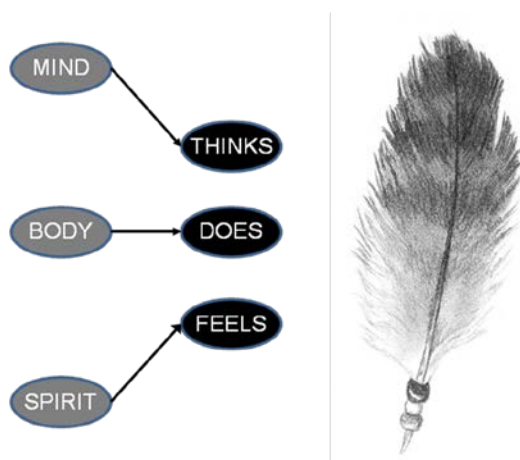
Balance in one side produces balance in the other side



If the humanitarian side representing values, spirituality and philosophy is represented in equal proportion to the side representing human needs (skills / work: food, shelter and clothes), there will be balance within ourselves which then extends outward to our families, clans /communities and nations. Disciplinary thinking tied to colonialism has negatively affected balance of the natural world because the

humanitarian side of the feather representing values, spirituality and philosophy has been omitted in favor of Western values linked to capitalism. It is equally important to understand that both sides of the feather have occur in equal proportion for wellness and balance – one cannot disconnect spirit from mind, or body and expect the environment to function properly.

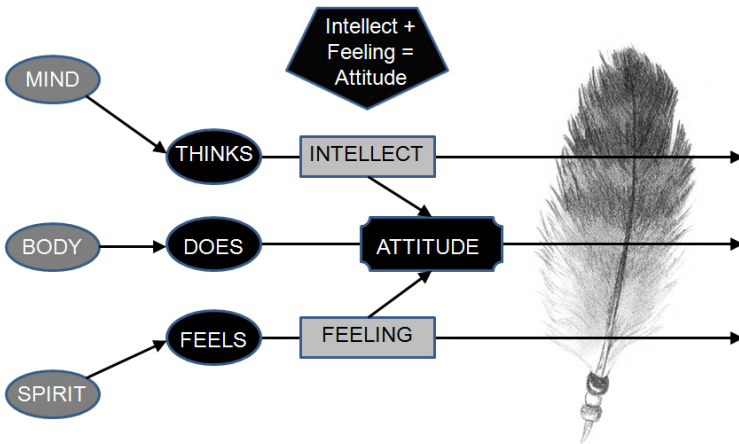
Our mind “thinks,” our body “does” and our spirit “feels.”



Thrasher explains how the mind, body and spirit are gifts from the Creator. These gifts allow us to perceive and experience. Feelings come from our spirit. Feelings are not emotions, but rather the capacity to experience. Emotions are feelings put into action or behavior. Further, the body holds the mind and the spirit together. Natural laws, which regulate the changing of the seasons, the migration of animals and so forth, dictate the connection between feeling and mind – you cannot have one without the other. This conception of natural laws differs from the Western version used in contemporary legal terminology because it pertains to the natural order of the universe as we understand it. We are responsible for our emotions because they originate with us. We

become imbalanced in our mind, body and spirit when our emotions are fully activated, either through rage, sadness or some other condition. On the other hand, when emotions are in extreme control, it causes stress with your spirit – this can result in extreme mental or physical illness. When you bring the mind and spirit together, individual wellness expanding out to the natural environment can occur.

Mind (intellect) + spirit (feeling) = attitude

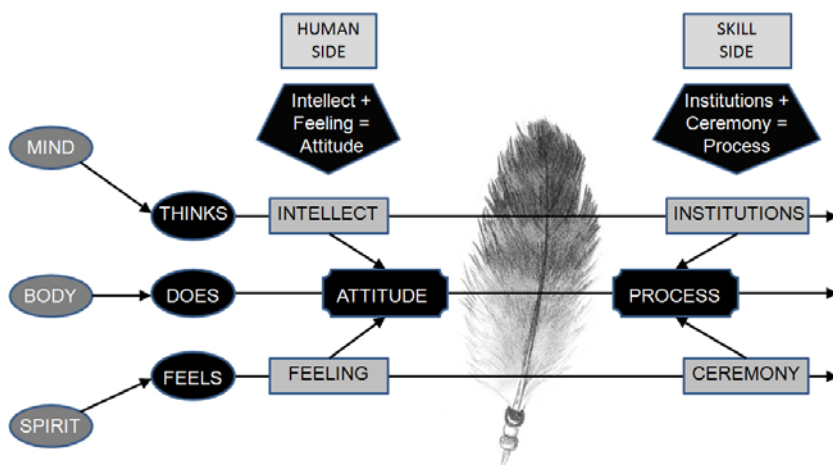


Thrasher further explains that intellect combined with our feelings produces our attitude. This refers to how we think and feel. Because feelings come from the spirit, imbalance cannot take place where good feelings are found. This illustrates the importance of the interconnection between mind, body and spirit. Our body is the benefactor of this relationship which is manifested by “attitude.” Leaving out the spiritual component of balance, as a disciplinary approach within Western research practices may do, often promotes “unwellness” and does more harm than good. Because our communities are currently out of balance largely because of colonizing or disciplinary approaches forced upon us, the importance of this interconnection and its link to the natural world has been overlooked.

Balance within our mind, body and spirit

-EQUALS-

Balance between our human side and our skill side.



Thrasher asserts that balance occurs between ourselves, our families, clans, communities and nations when our values, philosophy and spirituality are emphasized in equal proportion to providing food, clothing and shelter. On the skill side of the feather, are material/ economic or skill-providing endeavors that one needs to survive, such as food, shelter and clothing. This side of the feather also illustrates that institutions combined with ceremony give us process. As simple as this may seem, the development of a good attitude leads to good process. We have ceremonies to deal with our feelings, but we also have institutions, in the form of various medicine societies, that combine with ceremony to provide process when the two occur together.

Monodisciplinary colonizing practices and worldview have created substantial imbalance within our communities extending out and affecting the natural environment. Rather than accepting us for who we are, these practices attempted to shape us into what colonizers

wanted us to be. Although this has been in practice for several hundred years, most recently residential schools, the *Indian Act*, the reserve system (to name a few) serve as pertinent examples. In particular, the 1996 Royal Commission on Anishinabek Peoples (RCAP) asserted that the imbalance within our communities today is linked to the residential school experience. As an extension of the more general colonizing project, residential schools were only one of many tactics used against us. The RCAP states that “Experts working for government and Anishinabek organizations confirmed the connections made by Anishinabek people between the schools’ corrosive effect on culture and the dysfunction in their communities” (RCAP, 1996, Part 2, 1.1, 72). The campaign to destroy our values, spirituality and philosophy was clearly articulated: “A wedge had to be driven not only physically between parent and child but also culturally and spiritually” (RCAP, 1996, Part 2, 1.1, 11).

Investigating Indigenous TEK and Interdisciplinarity

There are numerous reasons for using interdisciplinary approaches to investigate the environment from a First Nations TEK perspective. For example, complexities may arise relating to differences between First Nations and the Western worldview and differences in how wellness, either personal, community or environmental, is conceptualized. Interdisciplinary approaches enable researchers to begin “filling the gaps that disciplinarity leaves vacant” (Chettiparamb, 2007, 17). Because there is a major variation regarding the two conceptions, it is important to discuss points where the Anishinabek worldview and conceptions of wellness are unique as well as interdisciplinary. By exploring “what actually happens” (Campbell and Gregor, 2004, 25), which is critical to First Nations research, it is necessary to discuss the interdisciplinary nature of Anishinabek beliefs, perceptions and

values because they substantially influence how research unfolds and the direction it will take.

Indigenous Ontology is Interdisciplinary

In discussing interdisciplinarity, it is also important to explain the interdisciplinary nature of the Indigenous worldview. This is critical to understanding TEK. Within this view, the universe is a collective of many interwoven elements rather than a series of binary units bordered by artificial conceptions of reality. Indigenous conceptions of reality contend that life always existed as Mode 2 knowledge, or a state of constant renewal and growth (Strathern, 2004, 8-9) because it is continuously growing and changing. Using interdisciplinarity compliments this worldview and expands on it in a positive way.

Understanding the Anishinabek worldview is tied to understanding our values, beliefs and spirituality. Though much has been lost through colonization and forced assimilation of Western beliefs and values, some of our philosophy still remains and is held together through Indigenous learnings. Rather than just accepting us and our worldview, many instead prefer to categorize us as “Unique genetic endowments” or the “vanishing indigenes” – needing the kind of “saving” that comes so easily in white settler colonies” (Haraway, 2008, 156).

The belief of spirituality and interrelationship is echoed by First Nations scholars such as Andrea Smith (2005, 5) who assert that:

Native spiritualities have always been the cornerstone of resistance struggles. These spiritualities affirm the goodness of Native communities when the larger society dehumanizes them. They affirm the interconnectedness of all things that provides the framework of re-creating communities that are based on mutual responsibility and respect rather than violence and domination.

In many ways, Anishinabek are not unlike trees, who “are able to grow on poor soils because of the fungi that bring their roots phosphorus,

magnesium, calcium, and more” (Tsing, 2004, 3). We recognize our dependence on Creation to provide everything we need for good, long life and are able to survive and “grow on the poor soil” of reserve land because of the “fungi” that appears to us in the form of our belief system. Further, like Tsing’s fungi, Anishinabek are also an “indicator species for the human condition” (Tsing, 2004, 5). Like Haraway’s chicken, which is taken as a type of barometer of the overall human condition, one only needs to look at how Anishinabek are faring to gain an overall picture of how humanity is faring generally (Haraway, 2008, 275).

Our values, philosophy and spirituality originate from many places. Some of our first teachers² were the plants, animals and other elements of Creation. In describing Indigenist research, Martin states that “Methods such as storytelling and exchanging talk are most often used amongst People but methods for interacting with other Entities (e.g. Animals, Weather, Skies) is equally necessary” (2003, 16). It is difficult for us to understand Western conceptions of disciplinarity because our way of thinking does not contain those conceptions of reality. As Haraway states “Animals are everywhere full partners in worlding, in becoming with. Human and nonhuman animals are companion species, messmates at table, eating together, whether we know how to eat well or not” (2008, 301). According to our understanding, if there once existed a condition in which monodisciplinary life existed on this planet, then no other life would have followed. If people of different racial, religious and ethnic backgrounds never mixed or the boundaries existing at the beginning of Creation remained, then life would have ended long ago.

² In describing the term teachers here, it is important to note that I am not referring to teachers in the Western sense of the word, but rather as it is understood within Indigenous communities and learnings. For example, stating that animals were one’s “teacher” may be understood to mean that it was the source of learnings, not in a literal classroom setting as Western thinking may perceive.

All of Creation is interdisciplinary. The Earth and all life on it and around it work together to produce a level of existence that would not exist without the contribution of each one of them. There are four orders of Creation discussed on the medicine circle that include all life on Earth. This includes the mineral, plant, animal and human world. Each of which was created in a specific order. Just imagine what would happen if one of those elements did not exist. There really are no borders between the elements. Following this one can see why we have difficulty conceptualizing the border between the U.S. and Canada. Like disciplinarity, with its artificially constructed borders between disciplines, this border is an artificial construct created to control and define political and economic power.

Interdisciplinarity plays a key role in our understandings. Life, the natural world, or everything that is animated, is interdisciplinary and all of the elements that comprise it function like players on the same team. According to our philosophy, all life on this planet requires four things to survive-water, air, sun and earth. Humans are comprised of four distinct races – red, yellow, black and white and each race has a gift – the gift of vision, time, feeling and movement. Together these races and their gifts provide everything humans need to have *biimaadziwin* (good life). This can be likened to a braid of sweetgrass which illustrates our collective strength and good health if we work together.

Our philosophy further states that humans are comprised of a mind, body and spirit operating in unison or interdisciplinarity. TEK reflects this. It is impossible, according to our way of thinking, to separate the three or draw boundaries between them. It would be like removing one of the wheels from a vehicle and then attempting to drive it. When unwellness is treated, whether it pertains to the individual or the natural world, the analysis involves three different levels – the mind, body and spirit. Even the trees are interdisciplinary.

For example, every tree has 7 different parts – the roots, the inner bark, the outer bark, the leaves, the twigs, the sap and the seeds. If you took any one of those parts away, you would no longer have a tree, but a different form of life that is still part of Creation.

Everything in Creation has a purpose, place and a time (Phillips, 1996). This is interdisciplinary as well. When specific plants, animals or humans exist or grow in certain places, they provide something that is needed to that area or those who live there. Humans are the collective beneficiaries of the interdisciplinary nature of Creation. Some contend that the earth would be fine if there were no humans. They assert that the earth would be better off without humans because of the significant environmental destruction we have caused. Indigenous beliefs disagree with this assertion, knowing that humans have a role to play and a contribution to make, but that this has been disrupted by colonialism and greed resulting in capitalism and ecological destruction. However, we also conceptualize time differently and know that this state of imbalance will not last forever. Our existence is defined by the circle, which as stated earlier, does not have either a beginning or an end. This strongly contrasts with capitalism which relies on production and property ownership according to artificially-imposed constructs of time, purpose and place.

Indigenous Wellness, Interdisciplinarity and the Environment

The interdisciplinary orientation of Anishinabek wellness was clearly articulated in the 1996 testimony of Chief Tom Iron at the Royal Commission on Aboriginal Peoples.³

³ In particular, the statement which appears in the previous text states that our wellness “crosses the boundaries.” (*italics are mine*).

The *wellness* of our people, including their social, economic and spiritual well-being, *crosses the boundaries* of the separate terms of reference of the Royal Commission. Wellness is a community issue, a national issue, a women's issue. It touches youth concerns, family considerations, even self-government and historical concerns. I firmly believe that no other issue so fundamentally relates to the survival of our people as that of health. (RCAP, 1996, Vol. 3, Section 3, Part A, 1)

TEK and Indigenous approaches to wellness are underscored by how it is conceptualized in our culture compared to Western practices. In general, different conceptions of wellness originate within Anishinabek interdisciplinary approaches compared to the more disciplinary approach of Western methods of wellness. Individually and collectively, mental, physical and spiritual health is paramount to the wellness of everything in Creation. This concept is echoed by others as well. For example, Onkwehonwe scholar Taiaiake Alfred states that spiritual health is vitally important to any type of cultural restoration (2005). This can be expanded out to the natural world. In describing how Gandhi was able to foster cultural restoration in India, Alfred states that it was "...the spiritual strengthening of the people..." (2005, 55). Alfred also states that "we need to focus on spiritual foundations and provide ourselves with a new psychological and mental framework for decision-making in our own lives and in that of our communities" (2005, 86).

Wellness, whether individual or environmental, is rooted in balance, a unique and intrinsically interdisciplinary feature of our culture, existing within ourselves, families, clans and nations. It is present when there are equal proportions between values, philosophy and spirituality and providing for food, clothing and shelter within our lives. Within our culture, these learnings remind us and connect us to the natural world we live in.

Anishinabek understandings of balance also discuss conceptually how there are two sides to everything and how fundamental interdisciplinarity is to our worldview. Balance as a conceptual notion can be found within virtually all of our philosophical, spiritual and value-based forms of belief. All beings in Creation, as well as all of our learnings, have a positive side and a “shadow” or negative side. Further, we exist within a system based on the “great laws,” which dictate how the Earth co-exists within this universe and others, and natural laws, which pertain to the migration of animals, changing of the seasons and living in harmony with your environment. Our beliefs originate from the concept that we have to answer for all that we do.

Dealing with complex environmental issues in a disciplinary fashion instead of an interdisciplinary one comes from the adoption of Western ways of thinking. If the Anishinabek existed within a world of rigid disciplinary boundaries, then those who had knowledge of trees, for example, would be classified as a tree “expert.” However, when a community is focused on survival, it is essential for breaching disciplinary boundaries and the sharing of knowledge. Although one could argue that colonizing projects such as the one underway on Turtle Island may include interdisciplinary aspects. The condition that exists today is generally marked by a range of academic disciplines with clearly defined borders that exclude outsiders and are dominated by narrow thinking that stymies the production of new knowledge.

Solving the problem of providing governance in an Indigenous way is done through our system of governance, the clan system.⁴ Understandings about the Anishinabek clan system shared with me by Elder Mark Phillips (1998), outline governance, life roles and responsibilities. The clan system achieves the goal of providing governance by integrating

⁴ Anishinabek clan teachings shared with me by Elder Mark Phillips, Turtle clan.

the assigned roles and responsibilities of each of the five clans or disciplines within one system. The individual disciplines each contribute to the vast concept of social and political organization that comprise governance. According to Newell and Green, “A discipline is perhaps characterized as a socio-political organization which concentrates on a historically linked set of problems” (1998, 25). The clan system, which allows for adoption and outlines our life path, can change if needed or if an individual is better suited to the duties of another clan as well. If our clans were subdivided into autonomous groups based on their individual responsibility, no one clan could fulfill the roles required to achieve proper governance, but collectively, this task is easily achieved.

Interdisciplinary Approaches to Deconstruct Colonialism

One of the goals of Indigenous research is to deconstruct some of the disciplinary ways of framing that often accompany practices involving the research of First Nations people. L. Tuhiwai Smith remarks how she often hears in Indigenous communities that ‘We are the most researched people in the world’ (1999, 3). In 2003, this sentiment was echoed by Serpent River First Nation community members who told me while conducting a band council-sponsored research project that they had been “researched to death” (M. Hankard, 2003).

Consistent with deconstructing colonialism and its ties to disciplinarity and colonial thinking, it becomes evident that disciplinary approaches are inappropriate for First Nations TEK research. These approaches typically fail to incorporate Indigenous knowledge, contribute to furthering the goals of colonialism and detract from any positive gains associated with research. Further, First Nations research seeks answers within a multifaceted area rooted within cultural understanding that is too complex to be analyzed within a disciplinary scope of analysis.

Interdisciplinary research is beneficial to Indigenous people. Indigenous people have already greatly suffered from the effects of disciplinary thinking and methods of understanding. Further, First Nations understandings are greatly misunderstood in many academic circles because they are highly complex and subject to misinterpretation. According to Klein, “Interdisciplinarity is a means of solving problems and answering questions that cannot be satisfactorily addressed using single methods or approaches” (1990, 196). Using a research methodology and process of integration that draws from more than one disciplines allows one to remain aware that “there can be no clear-cut interdisciplinary methodology” (Newell and Green, 1998, 29). Addressing First Nations environmental issues necessitates not only using an Indigenous knowledge approach to avoid cultural objectification and exploitation, but also reaching an understanding of how Anishinabek perceive their own worldview. It is also worth noting that Indigenous knowledge is an inherently interdisciplinary way of understanding that draws beyond disciplinarity for problem solving.

Colonialism and Disciplinarity

Avoiding disciplinary approaches is very important to minimize colonizing influences. In this light, research involving First Nations is linked to Indigenous strategy to continue the process of decolonization. Alfred states that “to transcend colonialism, we need to understand clearly who and what constitutes our enemy” (2005, 101). Colonialism has forced disciplinary ways of thinking and knowing onto Anishinabek people. It has been noted that “The hierarchical systems, the First Nations, *Indian Act* type of government structures are designed to keep us at each other. It’s a form of dysfunction that’s been institutionalized for Aboriginal people” (Wilson, 2008, 103). Further, “there has always been an apparent separation between the ethical principles and the philosophies and

practice of government in the Western tradition” (Wilson, 2008, 102). Using disciplinary approaches in First Nations TEK research would transform such work into “Another arm of the colonial body” (Wilson, 2008, 105).

The separation of cultural concepts and ways of being, through such mechanisms as residential schools, has produced artificial divisions and classifications that have weakened the Anishinabek. Indigenous knowledge perspectives understand interrelationships: “That which the trees exhale, I inhale. That which I exhale, the tree inhales” (Graveline in Wilson, 2008, 57). However, colonialism and disciplinary thinking and behaving, including racial purity laws and eugenic forced sterilization policies (Abenaki oral and written history), has created a situation not unlike Tsing’s plants in which “standardization [which] makes plants vulnerable to all kinds of disease” (Tsing, 2004, 7). Anishinabek have been standardized through laws and practices, such as the *Indian Act*, which has also made us “vulnerable to all kinds of disease,” (Tsing, 2004, 7) leading to greatly shortened lives and the proliferation of diseases such as diabetes. Narrow ethnocentric ways of perception, problem solving and interpreting information has led to intolerance within our communities as well as physical, mental, emotional and spiritual abuse.

Colonial constructions of gender and race are one example of how divisions were created. Andrea Smith notes that “colonial relationships are themselves gendered and sexualized” (2005, 8). According to Western-gendered disciplinary thinking, one is either a man or a woman, but not both, and never one and then the other. You must either be classified as one or the other. The same goes for views on the family in which one particular construction of family becomes the “official” version and then is mandated through laws. Under this type of disciplinary thinking, people are classified as normal or deviant. One is either a

status Indian or a non-status Indian, a Metis, a non-Native, male or female – and placed into neat little boxes that can be “managed.”⁵

It is important to deconstruct the effects of colonialism through interdisciplinary practices (L. Smith, 1999). There is a fundamental difference between the interdisciplinary worldview of Anishinabek and the imperialistic, disciplinary worldview of colonialism. The Anishinabek worldview interprets a collective creation that is comprised of many interworking segments comprising the whole. In contrast, colonialism divides and separates. According to Alfred, “We must remove imperialism from the spaces we inhabit and transform those spaces into something other than what they were designed and forced to be with empire” (2005, 201).

Following North American colonization, First Nations were divided into specific groups, not unlike academic disciplines, to be controlled. Over time, those artificially created parameters have succeeded in dividing First Nations, not only geographically into small tracts of reserve land, but also socially, through perpetuating and convincing Anishinabek people that they are different than relatives who may live nearby. It is almost hard to imagine that Indigenous people living north of the Mexico border numbered roughly 50 million (close to double the population of present-day Canada) only 500 hundred years ago.⁶

Elders have told me that prior to European contact, all of the nations on the East coast of North America, from northern New Brunswick down to the top of Florida and west to Illinois existed as one nation (Greene, 1995; Phillips, 1997). This is evidenced by shared linguistic

⁵ The late Peter Drucker, who was well-known in the field of management studies and business education, is generally attributed with coining the phrase “If you can’t measure it, you can’t manage it.”

⁶ This is supported by oral history, but also appears in Ronald Wright, *Stolen Continents: Conquest and Resistance in the Americas*, (Toronto: Penguin Group) (2003), p. 2.

and cultural traits. The names of various bands referred to places lived, but self-referencing terms merely meant human. Instead of focusing on differences and trying to separate concepts and create disciplinary borders, we accepted and adopted those from other nations.

Colonialism applied Western ways of thinking that carved people and places into their disciplinary segments. Instead of relating to the Anishinabek as nations comprised of smaller nations, people were defined in a disciplinary fashion and artificial ethnic or linguistic boundaries were created consistent with colonialism worldwide.

In Canada, the *Indian Act* succeeded in creating and perpetuating notions of disciplinarity among First Nations people.⁷ Instead of recognizing all Anishinabek, they created a system that divides. This is not unlike Western views on the environment. Within this system, a small portion are granted Indian status based on artificially constructed criteria and many are not. Indian status “entitles”⁸ one to various treaty benefits. Therefore, rather than being interdisciplinary and recognizing and accepting people as a diverse mix, colonizers impressed disciplinary rules and a dysfunctional system that still exists. This has caused our communities to move from cultural inclusion, which is described in our clan learnings, to cultural exclusion, where only certain individuals can have “status” or band membership. The term “status,” with its connotation of a state of being that is different than others, is one example of how imposed disciplinary thinking divided into different classes, contributed to social dysfunction and fostered unwellness among our people.

⁷ This tactic is as old as Machiavelli who advocated turning people against each other to gain control over them.

⁸ This is how the Canadian government makes reference to this issue.

Conclusion

First Nations culture is rooted in an intricate system of values, beliefs and philosophy that must be understood and approached from multiple perspectives. Further, because there are many issues that may arise because of differences between First Nation and Western conceptions of the natural world and TEK, interdisciplinarity can help to broach boundaries that may otherwise interfere with holistically understanding First Nations beliefs and practices.

There are many reasons to use interdisciplinary approaches in First Nations TEK research. Anishinabek culture is varied, complex and multi-faceted, making an investigation of this topic “too broad to be answered by any single discipline” (Newell, 1983, 109). It involves addressing “questions that transcend disciplinary boundaries” (Newell, 1983, 110). Further, it is useful as a form of endogenous interdisciplinarity because it often creates new knowledge (Klein in Shailer, 2005, 2). This places such research within the scope of “a set of dynamic forces for rejuvenation and regeneration” (Klein, 21) and within Newell and Green’s interdisciplinary definition “as inquiries which critically draw upon two or more disciplines and which lead to an integration of disciplinary insights” (Newell and Green, 1998, 24).

There are positive outcomes associated this approach as well. These include the “synergy of multiple perspectives and discipline-specific methodologies in addressing major social and political issues” and the “engagement with real world problems, cultures and environments” (Shailer, 2005, 6). This can be achieved drawing from the perspectives of multiple approaches to ensure that important cultural and social issues affecting many areas of First Nations and Canadian society are not overlooked. Further, when coupled with multiple approaches, researchers can investigate the environment from a range of perspectives unimpeded by disciplinary boundaries.

Investigating First Nations TEK involves exploring some of the differences between Anishinabek perceptions of balance and Western conceptions, both in theory and in practice. Interdisciplinary approaches explore how they either compliment or work against each other as well. This is because the two conceptions are so radically different that research which avoids this discussion will miss crucial points that influence the thinking and practices of Anishinabek. If First Nations TEK research attempts to rely solely on disciplinary problem solving approaches, for example, based on contemporary research practices, historical study or sociology, it would omit key cultural understandings and do more harm than good. For example, one conducting a survey of historical documents or using psychological theory may simply ignore the Anishinabek connection to Creation and conclude that unwellness is solely linked to medical, historical, or psychological factors instead of the collective environment we are part of. This type of reasoning, however, would produce conclusions lacking a basis in First Nations understandings and final assessments that are further off the mark than when they started.

Bibliography

- Aboelela, Sally W., Elaine Larson, Suzanne Bakken, Olveen Carrasquillo, Allan Formicola, Sherry A. Glied, Janet Haas et Kristine M. Gebbie. "Defining Interdisciplinary Research: Conclusions from a Critical Review of the Literature," *Health Services Research* (42) February 2007, 329-346.
- Alfred, Taiaiake. *Wasase: Indigenous Pathways of Action and Freedom*. Toronto: Broadview Press, 2005.
- Benson, Thomas C. "Five Arguments Against Interdisciplinary Studies," in William Newell, *Interdisciplinarity: Essays from the Literature*, New York: College Entrance Examination Board, 1998, 103-108.
- Campbell, Marie and Gregor, Frances. *Mapping Social Relations: A Primer in Doing Institutional Ethnography*. Walnut Creek: AltaMira Press, 2004.
- Chettiparamb, Angelique. *Interdisciplinarity: A Literature Review*. November 2007.
- Denis, Claude. *We Are Not You: First Nations and Canadian Modernity*. Peterborough: Broadview Press, 1997.
- Geertz, Clifford. "Blurred Genres: The Refiguration of Social Thought," in William Newell, *Interdisciplinarity: Essays from the Literature*, New York: College Entrance Examination Board, 1998, 225-237.
- Greene, William Troy. Bear Clan, Oneida Nation. *Traditional Aboriginal Learnings*. 1995-2000.
- Hankard, Michael. *Serpent River First Nation Community Strategy Assessment and Report*. Cutler, ON, 2003.
- Haraway, Donna. *When Species Meet*. Minnesota: University of Minnesota Press, 2008.
- Mol, Annemarie. *The Body Multiple: Ontology in Medical Practice*. Durham: Duke University Press, 2002.
- Morin, Edgar. *On Complexity*. Hampton Press, Cresskill, NJ, 2008.
- Newell, William. "Academic Disciplines and Undergraduate Interdisciplinary Education: Lessons from the School of Interdisciplinary Studies at Miami University, Ohio, (European Journal of Education (27) (3), 1992, 211-221) in William Newell, *Interdisciplinarity: Essays from the Literature*, New York: College Entrance Examination Board, 1998, 213-224.
- Newell, William. "The Case for Interdisciplinary Studies: Response to Professor Benson's Five Arguments," in William Newell, *Interdisciplinarity: Essays from the Literature*, New York: College Entrance Examination Board, 1998, 109-122.

- Newell, William and Green, William. "Defining and Teaching Interdisciplinary Studies," *Interdisciplinarity: Essays from the Literature* (ed. Newell) (1998) The College Board.
- Nissani, Moti. "Ten Cheers for Interdisciplinarity: The Case for Interdisciplinary Knowledge and Research." *The Social Science Journal* (1997) (34)(2), 201.
- Nissani, Moti. "Interdisciplinarity: What, Where, Why?" retrieved October 28, 2008. <http://www.is.wayne.edu/mnissani/PAGEPUB/ispessay.htm>
- Phillips, Mark. Turtle Clan, Anishinabek Nation. *Traditional Aboriginal Learnings*. 1995-2009.
- Report of the Royal Commission on Anishinabek Peoples (1996), Volume 3, *Gathering Strength*, Section 3 – Health and Healing, Part A, http://www.ainc-inac.gc.ca/ch/rcap/sg/ci3a_e.pdf
- Royal Commission on Anishinabek Peoples (1996), Part Two: False Assumptions and a Failed Relationship, The Vision and Policies of Residential School Education, 1.1 The Vision, p. 72. http://www.ainc-inac.gc.ca/ch/rcap/sg/sg28_e.html#99
- Royal Commission on Anishinabek Peoples (1996), Volume 3, *Gathering Strength*, Section 3 – Health and Healing, Part A, p. 1. http://www.ainc-inac.gc.ca/ch/rcap/sg/ci3a_e.pdf
- Salter, Liora and Alison Hearn. *Outside the Lines: Issues in Interdisciplinary Research*. Montreal: McGill-Queen's Press, 1996.
- Shailer, Kathryn. *Interdisciplinarity in a Disciplinary Universe: A Review of Key Issues*, Faculty of Liberal Studies, Ontario College of Art and Design, April 17, 2005.
- Smith, Andrea. *Conquest: Sexual Violence and American Indian Genocide*. Cambridge, MA: South End Press, 2005.
- Smith, Dorothy. *Writing the Social: Critique, Theory and Investigations*. Toronto: University of Toronto Press, 1999.
- Smith, Dorothy, ed. *Institutional Ethnography as Practice*. Maryland: Rowman & Littlefield Publishers, Inc., 2006.
- Smith, Linda Tuhiwai. *Decolonizing Methodologies: Research and Indigenous Peoples*. New York: Zed Books, Ltd, 1999.
- Strathern, Marilyn. *Commons and Borderlands: Working Papers on Interdisciplinarity, Accountability and the Flow of Knowledge*. United Kingdom: Sean Kingston Publishing, 2004.
- Thompson Klein, Julie. *Interdisciplinarity: History, Theory and Practice*. Detroit: Wayne State University Press, 1990.

- Thompson Klein, Julie. "Blurring, Cracking and Crossing: Permeation and the Fracturing of Discipline," in William Newell, *Interdisciplinarity: Essays from the Literature*, New York: College Entrance Examination Board, 1998, 273-295.
- Thompson Klein, Julie. *Humanities, Culture and Interdisciplinarity: The Changing American Academy*. Albany: State University of New York, 2005.
- Thompson Klein, Julie. "A Conceptual Vocabulary of Interdisciplinary Science" in Weingart, Peter and Stehr, Nico in *Interdisciplinarity in a Disciplinary Universe: A Review of Key Issues*, April 17, 2005.
- Thompson Klein, Julie in Kathryn Shailer, *Interdisciplinarity in a Disciplinary Universe: A Review of Key Issues*, April 17, 2005.
- Thrasher, Michael. Turtle Clan, Anishinabek Nation. *Traditional Aboriginal Learnings*. 2002-2009.
- Tsing, Anna. "Unruly Edges: Mushrooms as Companion Species." Fall 2004.
- Weingart, Peter and Stehr, Nico in *Interdisciplinarity in a Disciplinary Universe: A Review of Key Issues*, April 17, 2005.
- Weingart, Peter and Stehr, Nico. *Practising Interdisciplinarity*. Toronto: University of Toronto Press, 2000.
- Wilson, Shawn. *Research is Ceremony: Indigenous Research Methods*. Halifax: Fernwood Publishing, 2008.
- Wright, Ronald. *Stolen Continents: Conquest and Resistance in the Americas*, Toronto: Penguin Group, 2003.