

*Review*

# What if indigenous knowledge contradicts accepted scientific findings? - the hidden agenda: respect, caring and passion towards aboriginal research in the context of applying western academic rules

Norbert Witt

Faculty of Education, University of Regina, Canada. E-mail: [NorbertWitt@uregina.ca](mailto:NorbertWitt@uregina.ca)

Accepted 21 March 2021

The statement in the title, what if Indigenous Knowledge contradicts accepted scientific findings (Fowler, 2000), is an expression of the dilemma people who research Indigenous Knowledge think they find themselves in when they are confronted with different interpretations of what it means to be human, or, as I may summarize it, with different cultural interpretations of human existence. I sense a certain amount of fear in this statement, which, indeed, suggests an Indigenous interpretation that threatens the accepted scientific worldview. The question is, of course, who the accepting entity is and what the acceptance is measured on. The statement was made by an academic (PhD) executive of a diamond company who, responsible for inclusion of Indigenous Knowledge in the environmental assessment the company had to do before starting the mine, suspects contradictory interpretations on land use by the Indigenous people who occupy the land that should be developed by the company he represents. With this statement, he sets the stage for an analysis of research data on Indigenous Knowledge the company collected in order to follow recommendations of the Canadian Environmental Assessment Act (1996) that would dismiss the validity of the very subject, Indigenous Knowledge, that is to be integrated in environmental assessment done on Indigenous lands. His use of the term accepted scientific findings is unfortunate as he tries to recruit the academic community for reinforcing his view on the suspected contradictions of Indigenous Knowledge to scientific knowledge. He juxtaposes accepted, academic or scientific knowledge production to Indigenous, supposedly non-scientific knowledge, and in the process creates an image of a united academy which keeps Indigenous Knowledge out rather than integrating it, ignoring a development within the academy, carried by Indigenous scholars, which is opening paths to integrate Indigenous knowledge, although, admittedly, this does not happen without a challenge of the status quo. Looking into knowledge production anywhere we will find that the basis is observation, no matter where knowledge is produced. What is then the problem with acknowledging knowledge from others? One hint is given by Parsons (2005) who quotes on Thornhill ([www.kronia.com](http://www.kronia.com)) that “you have to observe what nature actually does, not what you think it should do”, a statement that refers to assumptions (hypotheses) that influence both the researchers’ observation and the analysis of it. I have to clarify here that he is referring to an academic establishment which, rather than trying to find new insights, tries to protect accepted paradigms. In this context any different interpretation of the observed facts would pose a threat, and the very presence of Indigenous Knowledge might be seen as such. In this context, the rules of research and acceptance of knowledge production become a control mechanism that, rather than expanding knowledge, only allows a point of view that protects the Status Quo, preventing knowledge from real growth. In this way, the acceptance of knowledge researched according to those rules will be measured not on the basis of the philosophy of the people who hold this knowledge but on the degree of whiteness, meaning its closeness to the protected and privileged, western academic knowledge. I see Fowler’s (2000) statement within this context. What I will discuss are examples that show how the company uses academic research analysis to create a context which keeps Indigenous Knowledge out of the academic realm. Of course, the driving factor might be to validate the economic agenda of the company and devalue Indigenous concerns of destruction of their environment, source of Indigenous economy and, ultimately, their way of life. As legal interpretations were also used in order to justify such views on Indigenous Knowledge, I will discuss those interpretations, using some rulings by

Canadian courts that contradict them. In the end, I will discuss the academic context, showing that, while there is a struggle by Indigenous scholars to integrate Indigenous worldviews, the doors for acceptance of Indigenous Knowledge are not as closed as the statement in the title of this paper might suggest. I will, however, also point out that there is a tendency to protect a Status Quo of scientific knowledge produced in the academy and that Indigenous Knowledge has not yet been completely accepted, and as long as control of knowledge production and interpretation of knowledge according to its degree of academic whiteness remains in the hands of the privileged, Indigenous people in the academy will have to struggle to have Indigenous Knowledge accepted. My examples refer to research of Indigenous Knowledge in the Omushkegowuk (Swampy Cree) community of Attawapiskat in Northern Ontario, Canada set up and supervised by the diamond company. My interest in this issue stems from my status of, albeit being non-Aboriginal, being a member of the community by marriage, being involved in community matters with all my in-law relatives living in that community. Having such personal connection to the people I also witness that due to the mistrust in the validity of their knowledge, Indigenous people still have a hard time trusting the claim of their colonizers to have moved beyond colonialism.

**Key words:** Indigenous research, Research in Indigenous communities, ways of knowing, Indigenous Rights, Treaty Rights, Knowledge production, analysis methodologies, control of knowledge, ethics.

## THE MYTH OF 'THE MYTH'

The Mushkegowuk author Kataquapit (2003) explains why he wrote down his collection of stories in a way that the views of his people, the Mushkegowuk- Cree, are related to by themselves: in order to get his own people's view to history across because "non-native authors ..... tend to discriminate native culture". With this statement, Kataquapit raises the issue that Indigenous Knowledge is indeed not represented by non-Indigenous people who write about it because it, the knowledge, is either not understood and thus misinterpreted, or it is dismissed altogether untested in the sense that it was not produced in the academy, and too much leaning towards myth rather than fact. The term myth refers to a teaching tool of oral traditions, the stories told in order to record culture and way of life (history). The problem derives, of course, from the definition of terms like myth and fact. The explanation of an Anishnawbe (Ojibway) scholar that in traditional and contemporary times, the Elder and traditional teachers are the ones who guide the apprentice on his or her own path of learning, since the education of an Aboriginal person happens through the lived experience of that person (Rheault, 2000), indicates, however, that the myth lies within our definition of the term itself, not in the knowledge that is based on the stories told by the people. Education and the interpretation of knowledge, as Rheault (2000) explains, is based on the lived experience of the person who passes it on, and thus, the basis for the experience can also be interpreted as fact because the person is indeed alive and the survival of her/his people, which is a fact as well, was informed by knowledge that was accumulated in this way, by referring life experience to cultural interpretations (stories).

In fact, Indigenous Knowledge has proven itself valuable as most community members in the Omushkegowuk community of Attawapiskat still survive on and ma-

nage the resources they harvest from the land. A relatively recent study showed that traditional economy is very much intact in the region, and that it was indeed growing as "hunters obtained more wild food in absolute terms than that reported in the Attawapiskat surveys in the 1940s as presented in Honigman 1961" (Berkes et al., 1994), which calculated as "some \$9.4 million worth of meat and other land-based products, or about \$8,400 per household in 1990" (Berkes et al., 1994). Harvesting activities, of course, also refer to Indigenous Knowledge of the land and are dependent on conservation and resource management which this knowledge contains. This makes it evident that "Native (that is, Indigenous) science still exists and informs Native life in vital ways" (Cajete, 1999). The myths, coupled with the experience of the teacher, as the basis of passing on that knowledge thus cannot be interpreted as inaccurate. Nevertheless, by ignoring the meanings those myths actually teach, their factual core is not recognized and the knowledge, in Indigenous cultures based on a spirituality that we might interpret as environmental science, is not made accessible by researching such knowledge with the blindfold this particular research is started with - the interpretation of Indigenous Knowledge contradicting scientific findings. Thus, knowledge that should be researched on the basis of its deeper meaning is devalued instead.

## Devaluating indigenous knowledge

In the final report of environmental impact research in Attawapiskat, which, as the report points out, includes traditional knowledge, such knowledge is interpreted as non-scientific and thus less valuable. I have to clarify that, although funds for that research were not provided by any academic agency, research was indeed carried

out according to “accepted, scientific” (Fowler, 2000) rules by people with academic qualifications. In the report it is pointed out that although Indigenous Knowledge is based on observations, these observations are not subject to any particular form of analysis or verification, other than by reference to the prior experience of individuals and group members. (DeBeers and AMEC, 2004) The statement about lack of a process of analysis and verification creates the illusion that Indigenous Knowledge is primitive (my interpretation). Such practice can be interpreted as Epistemological Ethnocentrism where “the dominant paradigm essentially establishes the parameters within which ‘legitimate’ discourse may take place” (Reagan, 2005). In other words, the supposedly not analysed and non-verified knowledge production by Indigenous people would warrant control of research and analysis by the non- Indigenous researcher, as her/his basis is an academic process that follows such analysis and verification. Seen from the perspective of the researched who have suffered from poverty created by colonialism, this statement emphasizes continuation of colonialism, as the academic study of other cultures . . . ., although unquestionably useful and valuable, has from its very inception been closely tied to colonialism and imperialism (Reagan, 2005), with the tie to colonialism being the assumption that Indigenous Knowledge, although based on observation, was not tested (analyzed) and verified. This indication to lack of analysis and verification (DeBeers and AMEC, 2004) could also be a reference to cultural deficit theories which “reflect the attitudes of superiority embedded in the majority culture” (Scott, 2001) and which were used “as justification for ignoring the unique cultural knowledge and orientation to learning which Native American[s]... brought with them” (Cajete, 1999).

To look at the positive side of the statement by DeBeers and AMEC (2004), it shows that, similar to western knowledge acquisition, traditional Native American systems of research and educating were characterized by observation. Yet, analysis of observation and learning happened in a holistic, high context way of “experimental learning rather than by the low-contexted formal instruction characteristic of Euro-American schooling” (Cajete, 1999). What that means is that although analysis, of course, is based on the very scientific method of observation, the structure of the analysis processes (holistic rather than in broken down subjects) is different from western kind of schooling and knowledge processing, which Cajete (1999) refers to as high-context learning as opposed to low-context learning. The holistic view brings about certain type of understanding with “characteristics like whole brain orientation in the processing of information (intuitive and rational), highly visual, spatial and kinaesthetic orientations, oral as opposed to written language orientation, thinking in images rather than words, and learning in accordance with the requirements of the situation rather than ab-

stract learning” (Cajete, 1999) . I interpret knowledge produced in this context to be more inclusive, as it is looking at the whole, including all possible perspectives rather than analyzing only parts of the context (like economic gains) depending on the subject that is looked into or the agenda of what we want to accomplish (Couture, 1991; Western Canadian Protocol, 2000). Yet, it does not lack analysis or verification altogether.

### **Synthesising knowledges – The value of indigenous knowledge for finding ‘facts’**

I shortly want to discuss two examples from the Attawapiskat research that show how actual scientific findings were prevented rather than protected by ignoring or misinterpreting Indigenous knowledge. Of course, looking into the context of a diamond company wanting to justify the destruction of traditional land there is an agenda for the act of dismissing Indigenous Knowledge. Nevertheless, a synthesis of knowledges was prevented and the protection of so-called accepted findings resulted in much of the collected data (facts?) not adding up. Put into a wider, academic context, the agenda is to dismiss the claim Indigenous people in the Americas have on their land as, according to their stories, they have been put here by Kitche Manitou (the Great Mystery – also translated as The Creator). The accepted, scientific version is that the people came to this continent at the end of last Ice Age (about 11,000 years ago) via the Bering Land Bridge. In her book “Bones”, Dewar (2001) presents evidence after evidence, scientifically tested, that do not fit into the theory, showing the oldest finds in the East of the continent (although migration was supposedly from West to East), dated before the people supposedly moved into the continent. The interesting part in her account is her quoting on an Ojibway story, related to her by my colleague William Assikinak from the First Nation University of Canada, that indeed recounts that the ancestors were coming from the east, moving west (Dewar, 2001). Another story from the same source seems to point out that, after the ice receded, the people were moving back north, rather than south, which is also attested to in the Cree language with the expression “keewe” (go home!) referring to “keewatin” (the North). If the parts of academia trying to defend the Status Quo took myths more serious, collected archaeological finds would not only make more sense, as the oldest finds are indeed in the east, the stories would also give an indication where to look.

The Attawapiskat examples I present refer to a letter (DeBeers and AMEC, 2004 a), to government regulators concerning interpretation of Traditional Knowledge data. These data, although summarized and referred to in the report, are not posted in the DeBeers and AMEC (2004) study, having been withdrawn “on request of the AttFN pending their written authorization to publish the informa-

tion". Nevertheless, the less analytical character of Indigenous knowledge is analyzed from assumptions about a hunters and gatherers society being organized in a less complex way than modern, western society, an assumption which is, unfortunately, also extended to women's roles that supposedly exclude them from knowledge of the land (Archibald and Crnkovich, 1999), although traditionally women hold their part of Traditional Knowledge based on the role they play in society (Hokimaw-Witt, 2006). Traditional Knowledge data in Attawapiskat were only collected from male sources.

This fact alone would allow a conclusion that knowledge only collected from one part of society cannot be complete, particularly if one considers that in Indigenous societies labour and the knowledge about it is divided according to gender roles.

The first example refers to data on moose. (DeBeers and AMEC, 2004). The summary of collected data acknowledges the importance of moose as food source for the Attawapiskat Cree, yet an addition to this summary devalues the knowledge of the informants. The addition reads that "curiously, there was no indication throughout the Traditional Knowledge study that moose are a relatively recent arrival to the area", quoting on Peterson (1955) that "moose did not appear to enter this portion of the James Bay Lowlands until the early 1900s". It seems obvious that the researcher tries to question moose hunt as traditional activity. With the indication to previous academic research the report also seems to prove the statement that "observations [in traditional knowledge] are not subject to any particular form of analysis or verification, other than by reference to the prior experience of individuals and group members" (DeBeers and AMEC, 2004), as the knowledge about moose hunt is presented as very recent. In fact, however, the academic source (Peterson, 1955) used in this interpretation is outdated, and the Indigenous source not mentioning the supposed fact that moose is not original to Mushkegowuk territory proves the validity of traditional knowledge, once more recent findings are consulted. According to more recent archaeological finds at the "Mahikoune (wolf) site, or G1lx-1, located about 30 Km upstream on the east shore of the Severn River, [where] radiocarbon testing was done on recovered moose bones, [producing] a date of ...about AD 1165-1395" (Lytwyn, 2002). Lytwyn refers to a report by Pilon (1987) that disproves the assumption that moose had only recently extended their range north of Lake Superior. Pilon (1987) rather concludes that "without a doubt then, the pre-contact range of *Alces alces* (moose) can be described as within a few kilometres of the shore of Hudson's Bay".

The second example that underlines the importance of understanding Indigenous perspective when Traditional Knowledge data are collected and later analyzed is that on knowledge about beaver (DeBeers and AMEC, 2004). Like the first example, these data were with-

drawn from the report but nevertheless taken as basis for analysis. Data are summarized as "several AttFN (Attawapiskat First Nation) members expressed the opinion that beavers were ruining the land by damming the creeks (on Akimiski Island), which resulted in poor water quality, and in adverse impacts to fisheries resources". This summary is done completely out of context, and is indirectly juxtaposed to scientific knowledge that emphasizes the beaver as sustainer of land rather than its destroyer. The missing context is firstly the lack of disclosure of the questions that prompted this answer and secondly a holistic interpretation of such statement, which can easily be concluded as referring to traditional conservation practices and the interference in them by non-Aboriginal laws. The damage by beaver expressed by "several AttFN members" most probably refers to overpopulation of beaver due to imposed non-Aboriginal conservation laws that prohibited trapping, which, as interpreted by the community member and then Chief Ignace Gull during research my wife and I conducted in Attawapiskat in 1996 (Witt, 1998; Hookimaw-Witt, 1998) is part of traditional land management "based on our conservation laws [which] are not written, we practice them" (Hookimaw-Witt, 1998). Gull points out that non-Aboriginal laws do not consider Indigenous Knowledge and the prevention of Aboriginal land management can lead to overpopulation of the species. This context can easily be concluded in the presentation by DeBeers and AMEC (2004) as they also refer to conservation measures by the Hudson's Bay Company in 1948 which "reintroduced beaver to Akimiski Island" after they had been over trapped. Altogether, TEK is presented totally out of context. Presumably, the over trapping, a term that is also criticized by Gull as misinterpretation of Aboriginal conservation activities (Hookimaw-Witt, 1998), is contributed to Aboriginal activity. The misinterpretation of Indigenous Knowledge is that beaver appears to be harmful to the environment. Yet, fact is that both over trapping and the following overpopulation due to misunderstood conservation laws are based on non-Aboriginal actions. Over trapping might have happened as a result of the demand by the fur trade and overpopulation of beaver happened because control of beaver population by trapping was completely banned by non-Aboriginal conservation laws.

My using the conjunctive (might have happened) in terms of over trapping indicates reasonable doubt on the Indigenous side that this actually happened. Elder Jeremiah Stoney from Fort Severn First Nation remembers that after the ban on trapping beavers (around the signing of the adhesion to Treaty #9 in 1926), which was based on the 'whiteman's' (Indian agent) assumption that beaver became scarce as 30,000 were harvested in one year in Ontario alone, there was starvation among the Cree in the Hudson's Bay lowland because they did not dare to trap the plentiful beaver in their region (Kataquapit, 2003). Beaver is used for food by the

Mushkegowuk (Swampy Cree) . Not only were they not allowed anymore to practise their own conservation laws, knowing the land and seeing the beaver population increase drastically, they were also forced into starvation while food was plentiful. This situation happened because the Indian agent ignored Indigenous Knowledge to a point that he even “did not make any inquiries” (Kataquapit, 2003) after being told that beaver was plentiful, but rather relied on the assumption that beaver was over trapped. The inclusion of Traditional Knowledge in the law making process would have prevented both starvation and misinterpretation of a declining beaver population. This is also concluded by Preston et al. (1995) who interpret conservation measures by the Hudson Bay Company as “European-style management regulations”, whose success, however, “was dependent on the recovery of aboriginal institutions for the regulation of land use and for proper conduct of the hunt”.

Put into perspective, the two examples then show that the mere reference to accepted scientific findings and following academic rules of research does not guarantee authentic representation of data. Also, ignoring knowledge of the people who have lived on the land for thousands of years will lead to contradictions of what the researcher finds and what the theory tells her/him to find. With the indication before discussing the data that the observations being the basis of Indigenous Knowledge are not subject to any particular form of analysis and verification, the preconception of researcher and analyst about the question of what Indigenous knowledge constitutes shows, in the words of the Indigenous scholar Battiste (1998), in the hidden message of “what can savages know and how do they think”, which is a question loaded with Eurocentric arrogance. It continues to be a difficult question for non- Europeans to answer because Eurocentric thought has created a mysticism around Indigenous knowledge that distances the outsider from indigenous peoples and what they know.

Battiste’s (1998) quote on the director of the Dene Cultural Institute that TEK includes a system of classification, a set of empirical observations about the local environment, and a system of self-management that governs resource use (Battista, 1998), would state a direct contradiction to the evaluation in the DeBeers and AMEC (2004) study. Also, Indigenous Knowledge (or Traditional Knowledge as it is also referred to in the report) is not created by or restricted to “individuals or groups” but is rather both cumulative and dynamic, building upon the experience of earlier generations and adapting to the new technological and socioeconomic changes of the present (Bat This fact alone would allow a conclusion that knowledge tiste, 1998)

This evaluation of the basis of Indigenous Knowledge, similar to other discussions (Johnson, 1992; LaDuke, 1994; Grenier, 1998; McGregor, 2000; Witt and Hookimaw-Witt 2003; Kataquapit, 2003) presents Indigenous knowledge as much valid as accepted scientific findings

because verification and analysis is the basis of a system of resource management that has secured survival for thousands of years. This estimation contradicts the statement in the study report (DeBeers and AMEC, 2004) that makes Indigenous Knowledge appear less accurate. Also, in reference to synthesis of knowled-ges, an inclusion of Indigenous Knowledge in the analy-sis would lead to a lot clearer picture and explain why certain collected data do not seem to add up.

### **The justification - interpretation of aboriginal and treaty rights**

Referring back to the quote that western institutions try to “establish the parameters within which ‘legitimate’ discourse may take place” (Reagan, 2005), the interpretation of “legitimate discourse” can be moved a step further, to “legal” discourse, when legal interpretations of Indigenous Rights are quoted to back conclusions and assumptions made on validity of Indigenous knowledge. The report on environmental assessment that is presented to include TEK shows quotes on the Treaty text with those sections underlined that the authors want to draw attention to:

....the said Indians shall have the right to pursue their usual vocations of hunting, trapping and fishing throughout the tract surrendered as heretofore described, subject to such regulations as may from time to time be made by the government of the country, acting under the authority of His Majesty, and saving and excepting such tracts as may be required or taken up from time to time for settlement, mining, lumbering, trading or other purposes (DeBeers and AMEC 2004).

This part of the treaty text is presented as providing a basis on which Aboriginal Rights are interpreted. A validation of the statement that is made indirectly by the underscore is presented by reference to Coates (2000) and Parson (2001) who state that Aboriginal rights are not defined in the Constitution Act, but are generally interpreted to mean the general rights of Aboriginal Peoples to use their traditional lands for traditional purposes such as hunting, fishing, trapping, gathering, and other functions (Coates, 2000; Parson, 2001; DeBeers and AMEC, 2004)

This analysis is followed by another reference to Coates (2001) who interprets that the Marshall Decision of 1999 by the Supreme Court of Canada extended treaty rights in a limited way to commercial harvesting of marine fisheries resources (specifically eels), and therefore beyond the realm of Aboriginal rights which

were previously limited to harvesting for food and community use. (DeBeers and AMEC, 2004)

The flaw contained in just that reference is that the relations between Treaty Rights and Aboriginal Rights are interpreted as Treaty Rights going beyond Aboriginal Rights. Hunting, fishing and gathering are, indeed, rights defined in the treaty. However, with the reference to Aboriginal Rights being generally interpreted as those rights defined in the treaty, Treaty Rights and Aboriginal Rights seem to be equalled. This directly contradicts the statement further on in the document that “the case of Aboriginal rights, however, is not defined; as Aboriginal rights are considered separate from treaty rights” (DeBeers and AMEC, 2004). And, it does not hold up to legal interpretations.

While Treaty Rights refer to a specific legal document, the Treaty, Aboriginal Rights are interpreted from the human origin of the people and cultural and societal structure of Aboriginal societies, meaning, as presented in the reference below, they have their basis in First Nation laws:

First Nations laws are integral to the exercise of all Aboriginal rights; they must be part of the courts’ interpretation of those rights (Borrows, 1996).

This realization is based on the Constitution Act, referred to in the above quote (DeBeers and AMEC, 2004; Coates, 2000; Parson, 2001) which, although not interpreting them, indeed defines Aboriginal rights as being held by a collective and are keeping with the culture and existence of that group. Courts must be careful, then, to avoid the application of Traditional Common Law concepts of property as they develop their understanding of ...the *sui generis* nature of aboriginal rights. (Constitution Act, 1982)

The reference to the actual Act falsifies the statements made by DeBeers and AMEC (2004) by actually defining Aboriginal Rights as *sui generis* rights based on existence of Aboriginal groups, not in reference to our laws. It also clears the confusing representation of Aboriginal Rights being interpreted from within Treaty Rights (as hunting etc.), establishing the relationship of these two sets of rights in the way that Aboriginal Rights, as inherent rights having their basis in Aboriginal law, supersede Treaty Rights and can definitely not be interpreted through them. Traditional Knowledge would have the same basis, Indigenous life, and would thus be legitimate knowledge without the necessity to compare to academic knowledge. In the interpretation by Borrows (1996), being *sui generis* Aboriginal Rights can also not be extinguished by a Treaty and thus the Canadian Law’s use of First Nations legal sources is due to the unextinguished continuity of those pre-existing legal relationships. Since Common Law did not alter First Nation law, Aboriginal customs and conventions give meaning and content to First Nation legal rights.

Rather, as done in the Document (DeBeers and AMEC, 2004), indirectly analyzing that First Nations lost their rights to land and resources by signing the treaties, Aboriginal Rights are interpreted as an ongoing process based on Aboriginal laws which, when these laws are discovered, “courts can then incorporate them into Canadian law by analogy, thus further developing the *sui generis* body of Aboriginal law” (Borrows, 1996) . The reference to Common Law referring to property rights also shows that thus rights to the land, which, as DeBeers and AMEC (2004) try to establish by underlining their mining rights, cannot so easily be swept under the carpet. Neither can Traditional Knowledge be interpreted as less valid or even illegitimate. Following a legal process, this would still have to be interpreted within Aboriginal Rights. Also, *sui generis* rights, which can be interpreted within Human Rights, cannot be extinguished by Treaty or development interests of third parties.

The developers’ interpretation of rights or extinguished rights is also done on a basis of complete absence of a discussion on Aboriginal title. Aboriginal title, as defined by Chief Justice Lamer in the Delgamuukw (1998) case, has an impact on the interpretation of the Treaty text in the context of development of land because it refers to land rights and even to resources:

Aboriginal title is a right in land and, as such, is more than the right to engage in specific activities which may be themselves Aboriginal rights. Rather, it confers the right to use the land for a variety of activities, not all of which need to be aspects of practices, customs and traditions...integral to the distinctive culture of Aboriginal societies. These activities do not constitute the right *per se*; rather they are parasitic on the underlying title (Delgamuukw, 1998; Meyers, 2004).

To complete the basis for analysis of the meanings I will add Meyers’ (2004) conclusion on Bartlett’s (1991) interpretation of land development issues based on the Constitution Act of 1982 that Today, because of the Constitution Act, 1982, if Aboriginal title, associated native title rights have not been extinguished, the government must acknowledge Aboriginal title and other protected rights where it plans for resource development (Bartlett 1991)

Meyers (2004) concludes that therefore “the Crown’s duty to consider the implications of development on Aboriginal rights implies that Aboriginal title includes resources on the land”. Meyers bases his definition on the Delgamuukw case that defines Aboriginal title as a right in the land itself and includes mineral rights. In terms of the First Nation as partner in mining development and in terms of compensation for loss of traditional use of land, rather than just being considered as land user with little to no rights to the land, Delgamuukw establishes that

“mineral development by the aboriginal titleholder is an appropriate protected use” and that “a First Nation may not sell its aboriginal title land to a third party directly, but may surrender it to the federal crown in exchange for a valuable consideration”. This would establish that mining development has to be negotiated with the First Nation as partner and with the involvement of the federal government due to their fiduciary obligation. Neither the First Nation input nor that of the federal government can be ignored. And the input of the First Nation is, of course, based on Traditional Knowledge, which has as much a scientific and a legal basis as western knowledge has.

Considering the Delgamuukw case, DeBeers and AMEC’s (2004) misinterpret Aboriginal rights and it might explain why the legal concept of Aboriginal title is left out, ignoring the fact that Aboriginal rights were indeed defined. Following the Delgamuukw interpretation, native title is not only “a right in” but also an Aboriginal right. This is further underlined by the interpretation of Aboriginal title being “sui generis interest in land” (Degamukw, 1998). Therefore Aboriginal rights cannot be interpreted solely as the rights to engage in specific activities, as it was done in DeBeers and AMEC’s interpretation of treaty rights when referring to hunting and gathering. And that would have implications on mining operations.

Mining operations on Aboriginal lands cannot just proceed. The Treaty reads that the Crown has the right to develop the land, as it is presented in DeBeers and AMEC (2004). They rather have to be negotiated and interpreted in view to the fiduciary obligation the Crown has towards Native peoples (McMahon, 2001; Mining Watch, 2001). According to Sparrow vs The Queen (1990) these fiduciary obligations “impose a limit on the Crown’s ability to regulate the activities of Aboriginal peoples. The Sparrow (1990) Court also decides that section 35(1) of the Constitution Act, 1982, which refers to a definition of Aboriginal rights, and treaties should be “read broadly and in favour of Aboriginal peoples” (section 409), which would be in crass contrast to the interpretation of the rights provided by DeBeers and AMEC. Furthermore, a legal interpretation of Aboriginal rights has to be left to the courts, not to researchers.

To summarize the critique of this section, the presentation of legal interpretations by DeBeers and AMEC is, mildly put, misleading. The document seems to suggest that the First Nation members have lost their rights with the signing of the treaty. Thus, the legality of the mining operation with actually little to no input by the First Nation should be underlined. Paired with the presentation of Indigenous Knowledge as contradicting scientific findings the authors seem to present proof that mining development on Indigenous land is the only reasonable action to be considered in this case. Any different interpretation would thus seem not only unreasonable (contradicting sound, scientific findings) but also lack any legal basis.

In summary of the whole previous discussion, traditional Knowledge research in this case, although following academic methodologies in both collecting and analyzing data and backing the analysis up with legal interpretations, misrepresents the knowledge which was supposedly researched and, as such knowledge is represented as less valid, even illegitimate, helps pushing through an agenda which ultimately leads to destruction of both land and knowledge/culture of the people researched.

On the surface, all requirements of academic research in the Indigenous community were followed as data were collected according to academic rules, and research ethics were followed by involving the community in the committees created for the purpose of research and the consultation of the leadership. The question not considered, however, was that of control over both research process (collecting data and analysis) and ownership of data. The issue to be solved is then how participation of the Indigenous community in research is to be negotiated in order to ensure benefit of the community and respect for and protection of the Indigenous Knowledge that is researched. I would also ask the questions if such respect and protection can occur when the rules are written by the academic institution alone, and what the status of Indigenous Knowledge is within that institution.

### **Indigenous knowledge in the academy**

As discussed above, “accepted scientific findings” are seen as “The Norm”. The producer of Knowledge within “The Norm” is the academy, and therefore the academy can claim to set the rules for the processes of knowledge production, which includes research. As Indigenous Knowledge was not produced within the academy it could easily, as the previous examples show, be dismissed as non-scientific and thus not valid and even not legitimate.

There are, meanwhile, Indigenous scholars within the academy, but their place still has to be negotiated by them. Mihesuah (2004), an Indigenous academic, sees the necessity that the academy has to be indigenized in a way that Indigenous scholars have a place in it. The struggle of non-Indigenous academy members to keep control over knowledge production is described by her as academic gate keeping that, rather than allowing Indigenous perspective into the academy, tries to keep it out. Wilson (2004) introduces the struggle of Indigenous scholars to define their own point of view as having long been exposed to intellectual imperialism and therefore finding themselves in a situation of searching for rational justifications to defend our cherished worldviews against the attack by those who constantly wish to denigrate them.

This is particularly true for research in Indigenous communities finding societal problems within modern Indigenous communities. We have to keep in mind that these problems were created by the colonialist society



and partly by western education, and, as Reagan (2005) interprets Cajete (1994) they can therefore not be solved by those who created them but rather by those who resisted colonialism and their definitions from the beginning. In other words, solutions have to be found by and researched from the point of view of those who were affected, by that reclaiming their humanity, as Wilson (2004) interprets it. Similarly to Cajete (1994), Reagan (2005) and Wilson (2004) point out that it would be the oppressed people themselves to work out how oppression has to be ended because, other than the scholarly understanding of those who imposed imperialism on Indigenous peoples, our (indigenous) empirical and scholarly understanding substantiate the connection between the reality of our circumstances today and the five hundred years of terrorism and injustice we have faced as a consequence of European and American colonialism”.

The understanding of problems Indigenous communities face today is based on the worldviews as it continues to be interpreted after contact from within Indigenous societies, based on their own values, rather than being interpreted on the basis of the very political educational paradigms that were used to oppress them. Wilson (2004) therefore points out that “strategies must be distinct to us”, which would include research methodologies being developed within Indigenous worldviews, and being monitored by Indigenous communities and scholars.

This approach to Indigenous scholarship being responsible and responsive to the needs of the Indigenous community rather than the academy is also echoed by the Indigenous scholar Alfred (2004). He points out that the Indigenous scholar must “attempt to integrate traditional views and bring authentic community voices to our work... attempting to abide by traditional ethic in the conduct of our professional responsibilities”, yet at the same time making aware that “we as Indigenous people (then) immediately come into confrontation with the fact that universities are intolerant of and resisting to any meaningful ‘Indigenizing’” (Alfred, 2004). Alfred reflects on the resistance of the academy to allow paradigms that refer to cultural interpretations different from the ones developed in the academy, maybe containing the fear of losing control that is expressed in Fowler’s (2000) question of “what if Indigenous knowledge contradicts accepted, scientific findings?” Nevertheless, he emphasizes the need for a traditional, Indigenous perspective as a basis for the Indigenous scholar summarizing in his Indigenous Manifesto that there is a need for Indigenous *intelligencia* rooted in tradition rather than following the western paradigms dictated by the academy (Alfred, 1999). Similarly, Gone (2004), acknowledges that Indigenous scholars in the academy struggle with colonialism and imperialism over Indigenous philosophies pointing out that the institutions of Western academy are partly the targets for the Indigenous struggles as they,

the Indigenous scholars, try to negotiate “processes of (post) colonial meaning making and counter colonial critique with specific regard to institutions and traditions of the Western academy”. The goal is to establish Indigenous philosophy within the academy rather than just following western paradigms the academy holds up, trying to fit in an Indigenous paradigm that would have to be changed in the process. And that would lead to questions how Indigenous Research and research in Indigenous communities can be regulated by and acceptable to the academy.

### **Integrating indigenous knowledge and research?**

What is then the reaction of the academy to the attempts to get Indigenous perspective into research practices when Indigenous communities are researched and what responsibilities would arise from the act of real involvement of both community and Indigenous perspective?

Referring to Denzin and Lincoln (2002) and Pelletier Sinclair (2003) claims that “research is moving towards inclusivity of voice, worldview, culture, and is taking a serious look at issues of presentation, the other, and other ways of knowing in research”, summarizing the practice of academic institutions (Kowalski et al., 1996) as initiating the development of some outstanding guidelines to ensure adherence to cultural protocols in the application of Western research paradigms to Indigenous populations. (Sinclair, 2003)

One of the guidelines Sinclair (2003) is referring to is cultural sensitivity that Kowalski et al. (1996) define according to Ridley et al. (1994) as “cross-cultural competence, expertise, effectiveness, responsiveness, awareness and cultural skills” (Kowalski et al., 1996; Ridley et al., 1994). This seems to be a very positive reaction of the academy to the issues involving research of culturally different people. The question remains, however, who would define which research methods, are culturally sensitive and who would monitor the process?

Altogether, the academy does not give up control by referring to cultural sensitivity, or it will not even share control by including Indigenous guidelines the ethics committee of the academy defines from guidelines by an Indigenous institution. The point is still who defines both cultural sensitive behaviour and the meanings of guidelines in the context of such behaviour.

For example, many academy ethics committees now refer to Indigenous ethics guidelines as defined by an Indigenous institution, which point out that research has to be conducted in a way that people might be informed of research, it’s benefits and costs, be treated fairly and ethically in their participation in any research, and have an opportunity to benefit and gain from any research conducted among them (Mi’kmaq College Institute, 1999)

Looking into the meaning of these guidelines, possible conflicts could arise in the question of who would have authority of regulating the process to follow these guide-



lines. Particularly the benefits of the intended research for the community would have to be defined on the basis of needs of the community and those needs have to be defined as “needs expressed from within the community and not needs perceived by those outside” (Te Awakotuku, 1991; Smith, 1999; No-Doubt Research, 2003). And that means that while the academy and its researchers definitely can inform the community about their view on the research, the predicted costs and benefits from their point of view and even on their view of fairness, the issues of how the community would participate in the research and a definition of the needs of the community, which the prediction of how the community would benefit and gain is interpreted from, have to be decided upon advice from and negotiation with the community.

Also, participation in the research is more and more interpreted by Indigenous scholars as the researcher participating in and contributing to the lives of the researched rather than the researched participating in the research of the institution the researcher represents (Deloria, 1991; Mihesuah, 1993; Smith, 1999; No Doubt Research, 2003). And the definition of participatory research would then become a major issue in regards of control of both research and knowledge production deriving from the analysis of the data collected. In regards to integrating Indigenous views into academic research methodologies, such integration cannot be decided on and controlled by a western academy which has not yet decided on the validity of such views. As long as Indigenous worldviews are not legitimized within the academy, shown in the above issues discussed by indigenous scholars who are still trying to assert their place in the academy (Cajete, 1994; Alfred, 1999; Mihesuah, 2003; Alfred, 2004; Wilson, 2004; Gone, 2004), the academy cannot claim that its authority over research and knowledge production ensures fair research processes in Indigenous communities.

## Conclusions

As the presented examples of research in Attawapiskat show, research of Indigenous Knowledge was not done according to Kekechakhemowin, the seeking of wisdom in the local people’s (Cree) sense, but rather the attempt was made to prove the assumption the western researcher had before data were even collected. An assumption of Indigenous Knowledge being based on either isolated, personal experience or myths that are not verified by particular forms of tests and analysis prevents the researcher from actually looking into the meaning of the knowledge s/he is supposedly researching. The result of such research is then the verification of the assumption that Indigenous Knowledge is less valid than western, academic knowledge. In this way Indigenous Knowledge, although the object of research was not researched but rather presented in the negative way it was perceived by the researcher. The hidden agenda

within such research is then, rather than looking into and learning about Indigenous Knowledge, to devalue Indigenous Knowledge as not up to western standards, and, with the misinterpretation of the legal context Indigenous peoples are in, show such knowledge in an illegitimate light. The agenda becomes visible in the question asked: “what if Indigenous Knowledge contradicts accepted, scientific findings?” In the context it was presented, the question is, of course, not a real question as the indication towards attributes of acceptance and science already indicate the value, or actually lack of value, of the research object. Such research is not only disrespectful and arrogant towards Indigenous peoples, it also does not live up to the purpose it should have – to be beneficial to the community that is researched. To satisfy the condition of research being beneficial to the community, participation would have to be defined in terms of who participates in what, the community in the academy’s research, or the researcher in the life of the researched. In the Attawapiskat example control over both research and knowledge production (analysis) was with the western researchers who analyzed value and legitimacy of the research object – Indigenous Knowledge. Rather than producing data that actually represented Indigenous Knowledge, control over knowledge that was to be researched ensured that the actual knowledge was neither found, nor was it presented. The hidden agenda within such research is then, rather than looking into and learning about Indigenous Knowledge, to devalue Indigenous Knowledge as not compatible with western standards. When we as non-Aboriginal people pose the question at the beginning if Indigenous Knowledge is scientific or academic and we shape the rules of research around the assumptions we make, we will, as Kataquapit (2003) states, continue to “discriminate native culture by ignoring native beliefs” (because we deem those beliefs unscientific. Without respect of those beliefs, however, how can we understand the object, the knowledge that is explained through them?

The two examples on Attawapiskat indigenous knowledge data (on moose and beaver) show, however, the validity of Indigenous Knowledge once it is really looked into and an attempt is made to explain what the interviewee actually meant with her/his response. Put on a wider context, the stories passed down from generation to generation, if the researcher took the time to sort out how they can be interpreted within a western worldview, would give a clue about where to look for physical evidence and how archaeological evidence already found but contradicting the accepted theory would make sense. Rather than being ignored and dismissed as mythical, Indigenous Knowledge that is contained in the so-called myths could be used as clues, and with a translation into facts as we understand them in our western worldview, the past of humanity, which we are ultimately trying to understand, and which is indeed understood by those who know how to interpret their

stories, would then “come objectively to life” (Lewis, 2005) for people who can only understand facts that are explained in a so-called scientific manner.

The academy as the producer of knowledge has a responsibility that would go far beyond controlling knowledge by referring its production to rules that are worked out in and interpreted by the academy. It is certainly not enough to quote on Indigenous ethics guidelines and at the same time interpreting them from the academy’s point of view. Altogether, the academy still has to work on respect of knowledge other peoples have accumulated for thousands of years, knowledge that is valid as it ensured survival of the people who utilized it for thousands of years. This knowledge was accumulated according to the same methodology, observation, as knowledge produced in the academy. Non-Aboriginal people might not understand the interpretation yet, as they are too absorbed in a scientific worldview that tends to view any other philosophy as mythical. A true seeker of wisdom would try to synthesize the different perspectives and the result would be growth of the global knowledge base rather than control of one kind of knowledge over the other.

## COURT CASES AND LEGAL DOCUMENTS

Constitution Act of 1982. *Delgamuukw v British Columbia* [1998] 1 CNLR 1. *Sparrow v The Queen* (1990) DLR (4<sup>th</sup>) 385

## REFERENCES

- Alfred T (2004). “Warrior Scholarship: Seeing University as a Ground of Contention”. In: Mihesuah, Devon A. and Wilson Angela C. (eds) *Indigenizing the Academy: Transforming Scholarship and Empowering Communities*. Lincoln: University of Nebraska Press, pp. 88-99
- Alfred T (1999). *Peace, Power, Righteousness: An Indigenous Manifesto*. Don Mills, ON: Oxford University Press
- Archibald Li, Crnkovich, M (1999) . *If Gender Mattered: A Case Study of Inuit Women, Land Claims and the Voisey's Bay Nickel Project*. Ottawa: Government of Canada Publication
- Bartlett RH (1991). *Resource Development and Aboriginal Land Rights*. Ottawa: Canadian Institute of Resources Law.
- Battiste M (1998). *Protecting Indigenous Knowledge and Heritage*. Purich Publishing
- Berkes F et al (1995). “The persistence of Aboriginal Land Use: Fish and Wildlife Harvest Areas in the Hudson and James Bay Lowland, Ontario”. In: *Arctic*, Vol. 48, No 1 (March 1995), p. 81-93
- Borrows John (1996). “With or without you: First Nation Law in Canada”. In: *McGillLaw Journal*, Vol.41 (1996), p. 629-665
- Cajete Gr (1999). *Igniting the Sparkle: An Indigenous Science Education Model*. Skyand, N.C.: Kivaki Press.
- Cajete G (1994). *Look to the Mountain: An Ecology of Indigenous Education*. Durango, CO: Kivaki Press
- Canadian Environmental Assessment Act (CEAA) (1996). *Reference Guide on Physical and Cultural Heritage Resources*. Ottawa: Minister of Supply and Services Canada. April 1996. ISBN: 0-662-24599-7
- Coates KS (2000). *The Marshall Decision and Native Rights*. Montreal and Kingston: McGill-Queen's university Press.
- Couture J (1991). “Exploration in Native Knowing”. In: John W. Friesen (ed.) *The Cultural Maze: Complex Questions on Native Destiny in Western Canada*. Calgary, Alberta: Detselig Enterprises. (pp. 53-76)
- DeBeers C, AMEC (2004). “Victor Diamond Project: Environmental Assessment Comprehensive Study”, Volume I. DeBeers Canada & AMEC (2004a). “TEK Reference No10, Section 7.2.8.5, page 7-98” Letter to Government Regulator, April 16, 2004
- Deloria Vi Jr. (1991). “Commentary: Research, Redskins, and Reality”. *American Indian Quarterly* 15 (Fall 1991), p. 466
- Denzin N, Lincoln Y (Eds.) (2000). *Handbook of Qualitative Research*. Thousand Oaks: Sage
- Dewar E (2001). *Bones: Discovering the First Americans*. Toronto: Random House Canada
- Fowler J (2000). Submission to the Canadian Environmental Assessment Act Review. A letter to the Canadian Environmental Assessment Agency, 27 March 2000. CANADA website.
- Gone P (2004). “Keeping Culture in Mind: Transforming Academic Training in Professional Psychology for Indian Country”. In: Mihesuah, Devon A. and Wilson Angela C. (eds) *Indigenizing the Academy: Transforming Scholarship and Empowering Communities*. Lincoln: University of Nebraska Press, pp. 124-142.
- Grenier L (1998). *Working with Indigenous Knowledge: A Guideline for Researchers*. Ottawa: International Development Research Centre
- Hookimaw-Witt J (2006). *The Politics of Maintaining Aboriginal Feminism and Aboriginal Women's Roles of Sacred Responsibility to the Land*. A PhD thesis. Toronto: Ontario Institute for Studies in Education of the University of Toronto (OISE/UT).
- Hookimaw-Witt J (1998). *Keenabonahno Keemoshominook Kaeshe Peemishishikh [We stand on the Graves of our Ancestors]: Native Interpretations of Treaty #9 with Attawapiskat Elders*. Master of Arts (M.A.) theses at the Frost Centre in the Canadian Heritage and Development Studies Program. Peterborough, Ontario: Trent University
- Johnson M (1992). *Lore: Capturing Traditional Environmental Knowledge*. Ottawa, ON: Dene Cultural Institute and the International Development Research Centre (IDRC)
- Kataquapit GE (2003). *Some History Myths & Legends of the Swampy Cree*. Peawanuk (The Old Band of Weenusk), Ontario. ISBN 0-9733783-0-1 Kowalski, L., Thurston, W., Verhoef, M, and Rutherford, G. (1996). “Guidelines for Entry into an Aboriginal Community”. In: *The Canadian J. of Native Studies* XVI, 2, 1996, pp. 267-282
- Laduke W (1995) Co-Chair Indigenous Womens Network, Program Director of the Environmental Program at the Seventh Generation Fund, at the United Nations Fourth World Conference on Women, Beijing, China. August 31 1995
- Lewis D (2005). “Cataclysm 9500 B.C.E.: Two New Works of Immense Scholarship Throw orthodox Ice Age Theories into Question and, in the Process, Corroborate Plato and Many Other Ancient Sources”. In: Douglas Kenyon (ed.) *Forbidden History*. Rochester, Vermont: Bear & Company. Pp. 37-43
- Lytwyn VP (2002). *Mushkegowuk Athinowick: Original People of the Great Swampy Land*. Winnipeg: University of Manitoba Press.
- McGregor D (2000). “The State of Traditional Ecological Knowledge Research in Canada: A Critique of Current Theory and Practice”. In: R. Laliberte, P. Settee, J. Waldram, R. Innes, MacDougall, L. McBain & F. L. Brown (eds.) *Expressions in Canadian Native Studies*. Saskatoon: University Extension Press. (436-458)
- Mihesuah DA (2004). “Academic Gatekeepers”. In: Mihesuah, D.A. and Wilson, A. C. (eds) *Indigenizing the Academy: Transforming Scholarship and Empowering Communities*. Lincoln: University of Nebraska Press, pp. 31-47
- Mihesuah DA (2003). *Indigenous American Women: Decolonization, Empowerment, Activism*. Lincoln: University of Nebraska Press
- Mihesuah DA (1993). “Suggested Guidelines for Institutions with Scholars who Conduct Research on American Indians”. *American Indian Culture and Research Journal* 17:3 (1993), pp. 131-140
- Mi'kmaq College Institute (1999). *Mi'kmaq Research Principles and protocols*. Internet File. Sidney, NS: University College of Cape Breton. <http://mrc.uccb.ns.ca>
- No Doubt Research (2003). “Researching with Maori”. Internet File.

[www.nodoubt.co.nz](http://www.nodoubt.co.nz) Auckland, NZ

- Parsons, Steve (2005). „The Perils of Planetary Amnesia: As Evidence of Ancient Cataclysm Mounts, the Legacy of a Rejected Genius is Reconsidered“. In: Douglas Kenyon (ed.) *Forbidden History*. Rochester, Vermont: Bear & Company. Pp. 61-68.
- Pelletier SR (2003). „Indigenous Research in Social Work: The Challenge of Operationalizing Worldview“. In: *Native Social Work Journal*, Vol. 5, November 2003, pp. 117-139
- Peterson R (1955). *North American Moose*. Toronto: University of Toronto Press
- Pilon Jean-Luc (1987). *Washahoe Inninou Dahtsuounoaou: Ecological and Cultural Adaption along the Severn River in the Hudson Bay Lowlands of Ontario*. Conservation Archeology Report, Northwestern Region, Report No. 10. Kenora, Ontario: Ministry of Citizenship and Culture.
- Preston RJ, Berkes F, George PJ (1995). „Perspectives on Sustainable Development in the Moose River Basin“. In: D.H. Pentland (ed.) *Papers of the 26<sup>th</sup> Algonquin Conference*. Winnipeg: University of Manitoba Press, p. 379-393
- Reagan T (2005). *Non-Western Educational Traditions: Indigenous Approaches to Educational Thought and Practice*. Third Edition. Mahwah, N.J.: Lawrence Erlbaum Associates, Publishers
- Rheault, D'Arcy Ishpeming'enzaabid (2000). „The Ivory Wiigiwam: Aboriginals and the Academy“. Internet file.
- Ridley CR, Mendoza DW, Kantz BE, Mangermeier L (1994). „Cultural Sensitivity in Multicultural Counselling: A Perceptual Schema Model“. *J. Counselling Psychology* 41(2), pp. 125-136
- Scott FB (2001). *Teaching in Multicultural Setting: A Canadian Perspective*. Toronto: Prentice Hall
- Smith L (1999). *Decolonizing Methodologies: Research and Indigenous Peoples*. London: Zed Books.
- Te-Awakotuku N (1991). *He Tikanga Whakaaro: Research Ethics in the Maori Community*. Wellington, NZ: Manatu Maori
- Western Canadian Protocol for Collaboration in Basic Education (2000). *The Common Curriculum Framework for Aboriginal Language and Culture Programs: Kindergarten to Grade 12*. Victoria, whitehorse, Edmonton, Yellowknife, Regina, Winnipeg: Ministers of Education. ISBN 1-8941-1682-8
- Wilson AC (2004). „Reclaiming our Humanity: Decolonizing and the Recovery of Indigenous Knowledge“. In: Mihesuah, Devon A. and Wilson Angela C. (eds) *Indigenizing the Academy: Transforming Scholarship and Empowering Communities*. Lincoln: University of Nebraska Press, pp. 69-87
- Witt N, Hookimaw-Witt J (2003). „Pinpinhaytosowin [the Way we do Things]: A Definition of Traditional Ecological Knowledge (TEK) in the Context of Mining Development on Lands of the Attawapiskat First Nation and its Effectson the Design for a TEK Study“. In: *The Canadian Journal of Native Studies* XXIII, 2 (2003), p. 361-390
- Witt N (1998). *Opening the Healing Path: The Cultural Basis for a Solvent Abusers Treatment Program for the Attawapiskat First Nation*. PhD Thesis at the Department of Curriculum Studies of the Ontario Institute for Studies in Education of the University of Toronto, OISE/UT. Toronto: OISE