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# Squaring the circle: Balancing the economic benefits of unconventional hydrocarbon extraction with the inimitable cultural significance of environments

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ABSTRACT

Hydrocarbon extraction will continue for the foreseeable future, and undoubtedly impact upon regions and environments which this industry or indeed modern infrastructure had not done so previously. In light of this the paper considers how decisions with regard to the permitting or licensing of such projects might include the cultural significance of such environments more effectively. Focusing on the extraction of oil sands in Alberta, Canada as a model, the paper will establish the failings of established methods of assessing such values and whether human rights law, more accomplished in dealing with such subjective considerations, offers an alternative. Finally the paper will suggest a framework which, whilst incapable of solving all of the inherent issues in the inclusion of such subjective considerations in an industry so focused on quantification, might better balance them with the overbearing economic arguments for extraction.



## 1. Introduction: the oil sands temptation

The extraction of unconventional hydrocarbons is a growing reality, gaining greater attention in both print and digital media, and being subjected to considerable vehement public debate regarding its validity as a source of energy. The bases for this debate are numerous and could not all be considered here; however, a growing area of contention is the acute impact of extraction projects upon environments on which particular social subsets rely. This in itself is by no means a new phenomenon: the variance between the anthropocentric utility of environments in which resource extraction is undertaken is well established. The considerations which need to be undertaken in the extraction of crude oil in the Middle East and the North Sea are, it goes without saying, often dissimilar. As hydrocarbon resources become more strained, and thus inherently more valuable, the variety of locations exploited to access this 'liquid gold' will, like the price of that sought, increase.

One of the largest beneficiaries of this push to access previously undiscovered or utilised sources of hydrocarbons is Canada. The extraction of the 'tar sands,' 'bituminous sands' or 'oil sands' has given Canada the third largest reserves of crude oil in the world behind Saudi Arabia and Venezuela as reported by the CIA World Factbook (2013). As a result Canada is also now the largest exporter of oil to its neighbour the USA according to the U.S. Energy Administration (2014). Whilst reserves of this material exist in other provinces and territories within Canada, the north east of Alberta has been subjected to the most intense industrialisation of previously relatively untouched regions. The exponential expansion of recent decades has brought undeniable economic benefits to the province and Canada as a whole but has also had considerable impacts upon the indigenous populace. Although Alberta is home to some Metis[1] and a small number of Inuits[2] the vast majority of the aboriginal population is of First Nations heritage. Legally within Canada all such peoples are classified as aboriginal, though for the purposes of the distinction between said cultures the term First Nations will be utilised in the paper. Collins and Murtha (2010) state that Indigenous peoples are often inextricably linked to the environments they inhabit, and the First Nations of Alberta are no exception to this. The province is home to a variety of ecosystems, though these are broadly

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[1] Individuals of mixed European and First Nations heritage.
[2] Often referred to as Eskimos, though this term has fallen out of favour. Generally they are natives of Canadian territory within the Arctic Circle though some groups border this region.

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mountains in the north west, to boreal forest in the north east and plains in the south. First Nations throughout the territory utilise the environment around them to not only to attain the necessities of life, but also to express their culture.[3]

The protection of the environment from excessive consumption of natural resources, or practices bearing lasting impacts thereon is by no means a new occurrence. Indeed the notion of protecting certain tracts of land, or the recognition of the significance of certain environmental features to our own development has 'roots that are deep in history' (Elworthy and Holder, 1997, p. 3). The regulation of water usage and the setting aside of land for particular purposes in jurisdictions across the world for centuries is indicative of an awareness of that reliance, though it is conceded that this is not always related to concerns beyond those of an anthropocentric nature (Talbot, 2008, pp. 5–6). Advancements in technology and extraction efficiency, and in our awareness of the harms the use of resources without requisite caution can do has resulted in a divide in approach to hydrocarbon utilisation. The constant balancing of development and environmental protection has thus emerged as one of the most significant global policy debates and numerous approaches to managing these often mutually exclusive aims have been suggested. Indeed, MacNaughton and Martin (2002, p. xi) suggest that they 'are increasingly perceived as interdependent and equally urgent goals'. Many such approaches focus on valuing the outcomes of extraction and the inherent harms that entails. This is contrasted with the benefits of declining the opportunity to do so in relation to a particular region, parcel of land or ecosystem generally.

The purpose of this paper is to assess the fallacies of such cost versus benefit analyses where there is an element of cultural significance to the land or resource to be exploited to access unconventional hydrocarbons. Heinberg (2014) calls this, 'the (false) binary choice: jobs and economic growth on one hand, climate protection on the other' (Heinberg, 2014, p. 124). This oversimplified bifurcation of potential options is driven he argues by the similarly misrepresented arguments with regards to resource scarcity and the suggestion that so-called 'extreme energy' (Lloyd-Davies, 2013) will resolve the threat of 'peak oil' (Heinberg, 2014, pp. 37–51). Beyond this, alternate approaches to balancing cultural and economic factors in decision making processes will be discussed and a framework for accounting for such non-economic elements will be proposed as a means to resolve the under-appreciation of cultural significance in models currently utilised to assess the validity of extraction projects. These approaches suggested will fall short of the level of recognition demanded by Short, who proposes, 'rejecting the assumption of legitimate settler state sovereignty in favour of according indigenous peoples equal recognition and respect by instigating legitimising nation-to-nation negotiations' (Short, 2006, p. 278). However they are framed within the context of industrial hydrocarbon extraction rather than the broader framework of colonialism which Short discusses and as such are focused on issues particular thereto, including the necessity to account for corporate interests.

## 2. The quantification conundrum

Current approaches to balancing these conflicting realities are unable to consider accurately the significance of such ecosystems to indigenous peoples such as the First Nations reliant upon them for services not easily attributed a monetary value. The pecuniary value of cultural expression is quite simply not a commodity of the form that cost-benefit type analyses can account for. To illustrate, the value of a forest is far beyond that of its market value in terms of the timber it might yield, or the carbon dioxide it sequesters over a period of time. Instead it is a habitat to species, which although not endangered frequent the regions impacted upon by extraction projects solely owing to the particular features thereof (Tracz et al., 2010, p. 31). This is undoubtedly the case in relation to boreal woodland caribou in north east Alberta, which prefer well-established boreal forest as a source of both food and shelter. Such species can also rarely be attributed a value: no longer are they comparable to other meats more widely available where used traditionally as a source of sustenance. The caribou of north eastern Alberta though still consumed by some First Nations tribes are largely hunted as an expression of culture, no longer do they form a major component of the diet of the indigenous populace. Such comparisons to the value of farmed meats such as beef or chicken are flawed and a market value for the ability to hunt caribou is thus fraught with difficulty. In economic terminology more commonly marketed meats do not represent a substitute good for caribou.

The secondary nature of many impacts upon wildlife and other environmental features on which indigenous peoples are reliant exacerbates these difficulties. Rarely are the larger fauna to which indigenous cultures are linked directly impacted upon severely by such projects, instead opting to alter migratory ranges in response to them rather than being harmed per se. Direct impacts are largely restricted to physical displacement from relatively small areas immediately surrounding hydrocarbon extraction facilities themselves (Dyer et al., 2001). In the case of oil sands extraction this is largely limited to the physical footprint of wells and tailings ponds. Though these impacts are, where felt, severe and remove a species completely from a particular radius, the harm to the relocated animals is often only the inconvenience of altering migratory patterns though greater impacts are possible where this relocation is not easily achieved. Impacts are instead often accumulative in nature, such as the seepage of contaminants into watercourses potentially bioaccumulating in smaller prey or vegetation and taking an indeterminate period of time to become apparent in larger fauna. As such, 'Assessments that take into account only the physical disturbance associated with industrial development may greatly underestimate the cumulative impact of development on caribou' (Dyer et al., 2001, p. 538). In the case of boreal woodland caribou seepage from tailings ponds, which is accepted as inevitable to a degree by governmental and industry authorities who aim only to 'minimise seepage,' (Government of Canada, Department of Natural Resources, 2011) could build in water courses and vegetation of the regions exploited for a considerable period before having becoming apparent in a more stark nature. This was found to occur in the case of the insecticide DDT[4] which has resulted in 'the banning of DDT in both the UK and USA,' (Johnson, 1995, p. 213) and could potentially occur in this instance, though little is known as yet of the potential impact of tailings seepage.

Essentially present mechanisms for assessing the value of resources and balancing them with invaluable concerns of a largely subjective nature are not adequate to deal with the inextricable and inimitable connections of indigenous peoples. For example, 'the most fundamental matter of importance for First Nations. . .all across Canada is sustaining or regaining their relationship with traditional territories' (Morse, 2008, p. 286) in a manner which is not conducive to most other forms of development of that land. Thus alternate approaches to manage the conflict between development and the protection of culturally significant environments must be considered. In this regard there have been great

[3] This was noted in the case of *Guerin v. The Queen* [1984] 2 S.C.R. 335 in which the Canadian judiciary recognised the need to ensure that the purpose for which the land was used by indigenous peoples remained viable in assessing any federal projects thereon.

[4] Dichlorodiphenyltrichloroethane.

strides made in the protection of the environment in the field of human rights law (Boyle and Anderson, 1996). This is not necessarily the first field of law one might consider to protect the environment, with a well-developed body of law concerning environmental protection being available in domestic, regional and international legal spheres. As will be outlined in the context of the oil sands, however, human rights law is capable of considering the acute impacts to individuals and minority groups which might be outweighed by broader policy concerns in the aforementioned more obvious avenues whilst also taking into account development concerns where appropriate. Whilst the intricacies of the permitting procedures for Alberta are too complex to outline completely in a paper of this size, note should be made at this juncture that the permitting and licensing of oil sands projects in Alberta is generally made by a Joint Review Panel of both federal and provincial authorities. The decision making of these Joint Review Panels is therefore subject to human rights legislation of both a provincial, Canadian and international nature.

In order to illustrate the difficulties of applying established legal mechanisms to the inimitable connections indigenous peoples have with the environments they inhabit, a brief overview of the idiosyncrasies of the First Nations peoples of Alberta, Canada is necessary. The history of these peoples is often contested as their culture, practices and traditions, including the variances between smaller groups within this broad category, has only recently been recorded (Cavanaugh et al., 2006, p. 770). Prior to colonisation by European settlers who would record interactions and observations regarding the native peoples, little written history existed, with knowledge and teachings being passed on through the medium of stories or in the case of traditional practices, demonstration and training (Morantz, 2010, p. 10). Indeed European settlers impacted heavily upon First Nations Indians, many of whom exploited their traditional knowledge of the environment to profit from the burgeoning fur trade of the late 19th and early 20th centuries (Berry and Brink, 2004, p. 33).

Despite the inevitable upheaval of European settlement, the interaction with the fur trade arguably preserved many of the groups. Finkel (2012, p. 24) even suggests that this role fundamentally changed their position in society to their benefit. This is evident when contrasted to the persecution seen where European settlers and indigenous peoples did not find means of co-habitation on the land as was the case south of the border with the USA on many occasions. Geographic location and thus prevailing ecosystems, or features thereof dominated the evolution of First Nations groups which, 'retained many of their core beliefs,' in this regard (Finkel, 2012, p. 24). Those dwelling near slower rivers, or those used by fish for breeding would hone fishing skills. Groups dwelling in the migratory ranges of caribou would hunt them and other smaller animals for food and pelts. Further south on the plains of Alberta, groups were noted as being proficient hunters of bison by settlers. All of these practices and thus many other aspects of daily life were as a result dominated by an inextricable connection to a particular ecosystem. Indeed a note was made of the use of the very substance which now threatens that connection, the oil sands, being used by the First Nations to waterproof boats by the European settlers (Levant, 2010, p. 4). Thus not only are these peoples inextricably connected to their environment, but utilise them in ways that fundamentally conflict with the uses to which wider society and hegemonic cultures would put them.

The extraction of oil sands in Alberta is at its most intense in the north east of the province where the prevalent ecosystem is that of boreal woodland. Chapin and Danell illustrate that this habitat is only found along a certain band of latitude primarily in Russia and Canada, and as such is also home to a number of species which are at risk, or do not exist elsewhere (Chapin and Danell, 2001, p. 108). Impacts to this ecosystem are acute, and amplified by its relative scarcity and inability to be reproduced elsewhere. Indeed the boreal forest forms part of a UNESCO recognised World Heritage Site as a result of this scarcity (UNESCO, 2004). Of particular relevance to the indigenous populace of the province is the fact that this ecosystem forms the preferred habitat of the boreal woodland caribou, and also embodies one of the largest water basins in the world. As such it supports many of the traditional practices outlined above. These practices have developed to suit this particular topography and would not be easily transferred to others as a result. In relation to the development of the oil sands, therefore, the impacts they have upon the ecosystem threaten not only the natural environment in a more general ecological sense, but the very existence of the indigenous cultures which rely upon them.

## 3. Predicting the unpredictable

The impacts to the indigenous populace of the province are counterbalanced by the immense economic benefits of the extraction projects Alberta and Canada as a whole. Now in possession of the third largest confirmed reserves in the world (CIA World Factbook, 2013), and with a variety of potential export destinations for the crude oil produced,[5] Canada stands at the precipice of becoming a major world energy power. Opposition to such wealth and influence is clearly therefore measured against it. The equation is however not as simple as value of oil against environmental harm. The benefits to the majority of the Canadian population must also be accounted for. An inherently more economically stable country is to the benefit of the majority and as such considerations regarding extraction are often placed within a largely utilitarian decision making metric (Foster, 2002, p. 141). Politically this is clearly a major consideration as the standard of living of citizens is likely to rise increasing support for the governing powers. Sayre and King highlight that 'Following something akin to a utilitarian philosophy, it is [often] decided that the benefit for the majority of the population outweighs the costs to minority indigenous groups' (Sayre and King, 2010, p. 273).

The inability to provide accurate representative values for environmental features for which there is no pre-existing market value prevents balancing these fundamentally opposed interests in the utilisation of resources (Laitos, 2012, p. 189). This issue has plagued environmental law both in the context of protecting minority usage of resources such as the example used here, and more broadly in national and even global environmental protection in the face of considerable economic prosperity and development from activities which produce harms thereto. A number of principles and methods present a solution or an aspect of one, such as the precautionary principle and the notion of intergenerational equity. However, as these are somewhat blunt instruments, precaution is based upon accurate understanding of potential impacts which in turn allows for the balancing of the costs and benefits of a project, a luxury not afforded in many instances. Gollier asks 'how society should manage hazards whose characteristics are not perfectly known,' and it is this hurdle on which precaution as a principle can fall down (Gollier, 2001, p. 301). Similarly intergenerational equity requires accurate foreknowledge of the needs and wants of future generations, and the, 'often unknown problems of tomorrow' an impossible feat, which in turn leads to the protection of this admirable concept being pared down in practice to consist primarily of preserving an environment which is able to sustain the basic necessities of life

[5] China, the USA and Europe are all proposed exposed destinations and considerable contention exists as to how such exports will be achieved and whether the methods for doing so are safe and viable.

(Frazier, 1997, p. 187). The major concern with the application of these principles to the case at hand and similar instances is that they are just that: principles. Canada has signed a number of texts[6] espousing these principles, though neither the precautionary principle or intergenerational equity are inherently legally binding in this or the vast majority of jurisdictions. Instead they are seen 'not as binding obligations which must be complied with, but as principles, considerations or objectives to be taken account of' (Boyle, 2000, p. 32). Note should be made that whilst the precautionary principle is embodied by mechanisms such as environmental impact assessments, and planning and licensing regulations and legislation generally, no overall definition of what precaution entails is available. As Nollkaemper (1996) states, 'the precautionary principle states reasons that argue in the direction of precaution, yet do not necessitate one particular decision,' and instead principles such as this 'serve as guidelines rather than imposing concrete obligations' (Nollkaemper, 1996, p. 80–81). As such Weiss suggests that the degree of precaution is dictated by the level of available knowledge of potential harms and necessary levels of precaution can vary across jurisdictions (Weiss, 2003, p. 138).

## 4. Help from human rights?

Whilst environmental law as a field is far from being regarded as a failure, on the contrary it has had a great deal of success in many instances, the field of law is focused upon broader notions of healthy and clean environments. This is an increasing issue in the development of any conception of environmental rights for individuals in particular (May and Daly, 2014, p. 44). When considering large scale industrial projects, whilst rare or endangered animals are afforded considerable protection, minority groups are not provided protections reflective of their idiosyncratic nature by this field of law. Although a system based on absolute relativity to the individual is not possible in practice, a complete absence of regard for fundamental aspects of cultures with which an individual or group identify is equally undesirable. As Donnelly asserts, 'Radical or unrestricted relativism thus is as inappropriate as radical universalism' (2003, p. 92). The field of human rights law has dealt with this conflict between universality and relativism since its inception. The two are fundamentally opposed it would seem, and yet certain approaches to balancing opposite principles have developed and might be utilised in relation to the regulation of environmentally harmful projects.

The concept of a margin of appreciation, although not always afforded this name, is utilised in human rights litigation globally and originated in the European regional system governed by the Council of Europe and enforced by the European Court of Human Rights. Under the principle the differing interpretations of States applying the rights from the European Convention on Human Rights are permitted within each jurisdiction provided that the variations do no undermine the core components of the right. Seminal examples of this concept being applied in practice include the protection of public morals (Handyside v. United Kingdom, 1976) and religion, (Lautsi v. Italy, 2011) as well as national security (Klass v. Germany, 1978). In relation to environmentally harmful projects the European Court of Human Rights has focused heavily upon direct harms to human health (Convention for the Protection of Human Rights and Fundamental Freedoms, 1952, Article 2)) and access to information regarding the actions causing harm (Convention for the Protection of Human Rights and Fundamental Freedoms, 1952, Article 8).[7] Two issues arise in relation to applying the margin of appreciation to the protection of minorities however. Firstly adverse impacts to environmental features of cultural significance do not always also constitute impacts to human health. Where human health impacts do occur, they are either indirect or can be assuaged in a non-culturally relative manner.

By way of example, extraction projects may have a number of impacts on boreal woodland caribou the dominant subspecies of caribou in the regions affected and themselves a 'Species at Risk' (Species at Risk Act, 2002). Caribou cannot pass pipelines constructed to transport the synthetic crude oil or heated bitumen produced owing to the height of the pipes above the ground being too low for them to stoop beneath (The Cooperative, 2010, p. 8). This can cause vastly different migratory patterns, increased interaction with predators such as wolves and reduced access to preferred food sources including lichen (Dyer et al., 2001). The contamination of water caused by the seepage of material from tailings ponds into watercourses has the potential to bioaccumulate in the smaller flora and fauna of the region and result in increased harm to this larger mammal before any adversity is recognised lower in the food chains of the ecosystem (Cumulative Environmental Management Association, 2012). Consumption of water from natural courses in the region can also harm flora and thus larger species which feed upon them. This has however been a major focus of improvement in the oil sands extraction industry, and has formed the focus of cumulative efforts from competing extractors (Canada's Oil Sands Innovation Alliance, 2012). This is in spite of the regulatory framework with regards to water consumption being highly favourable to extractors. Licenses for extraction of water are relatively cheap given the profits made by such companies and involve merely a one-off payment for a license based on total volume extracted over a given period. As a result contentions on this basis would likely be rebutted by the existing use of best available technology to reduce water usage and the complicity of companies with, and indeed exceeding of, the demands placed upon them by the regulatory framework.

Any litigious action suggesting that the aforementioned impacts breached the human rights of the indigenous populace of Alberta would however be easily rebutted. Firstly impacts to particular fauna would not be held as breaching rights to life, or security of the person were other sources of food available. This is as the cultural relativity of food and water is not a component of the minimum obligations of states with regard to ensuring freedom from hunger. Whilst food must be culturally acceptable, this is interpreted as being food which is forbidden within a culture rather than preferred (Kunnermann, 2002, pp. 170–171). The fact that caribou meat does not form a major aspect of sustenance of indigenous groups in the modern era is also quite telling for this line of contention. The availability of alternate sources of food shifts the balance of favour to the industrial projects as no threat to human health arises in this regard. Albertan authorities could also provide resources to improve agriculture or afford other food sources and further reduce the efficacy of the contention of disruption to caribou from the physical presence of projects. Contaminant seepage impacts suffer from considerable issues in relation to the burden of proof demanded by court systems. A direct connection to a threat or harm to human health requires significant scientific or physical evidence of said harm. Where that impact is predicted but has not yet come to fruition the proof it will do so is clearly open to contention. As such the likelihood of successfully claiming such a breach is significantly reduced. This 'battle of biologists' is no more apparent than in Alberta, where a

[6] Arguably the most significant of these being the Rio Declaration: Rio Declaration on Environment and Development (1992), UN Doc. A/CONF.151/26 (vol. I)/31 ILM 874.

[7] Under the auspices of the right to private and family life based on the need to inform those who might come to some harm owing to a project being undertaken.

continual back and forth of scientific reports regarding impacts to human health of oil sands extraction has raged for almost a decade.

Finally in relation to water consumption, there is lack of a necessity for cultural relativity of water within the minimum obligations in relation to its provision demanded by human rights discussion and litigation. Thus suggestions that as long as it is provided in a manner supporting human life, a breach will not be presumed. Instead the provision of water above this basic form is subject to considerations as to the capacity of the State in question in each case. The capability of the State to provide water in a culturally relative manner would not be considered. Whilst Canada is a developed State, demands of monitoring of water levels in remote regions, and enforcing bans on the utilisation of its own natural resources is an unlikely outcome for human rights litigation. As such the provision of safe water via a pipeline to communities, indigenous or otherwise would ensure compliance with minimum human rights obligations in this regard. This is reflected in the tripartite scheme of state obligations in relation to the right to water proposed by Cahill-Ripley, which contains no suggestion of a cultural element to water provision (2011, p. 62). This is the reason that domestically the First Nations peoples of Canada have not opted to bring actions against such environmentally harmful projects on the basis of human rights law. The lack of both of an explicit right to culture within the domestic human rights mechanisms, coupled with the tempered cultural relativity which can be applied to broader provision therein reduces their utility in this regard considerably. This is not to say that the field offers no recourse for such peoples merely that the necessary universality with which these provisions must be applied, even within an individual state such as Canada reduces its utility for protecting features of cultural significance where proof of harm to human health is either not present or can be assuaged by non-relative means.

The margin of appreciation is a considerable progression in the balancing of cultural relativity and universality in relation to variance in the interpretation of rights between States with differing cultural traditions. The prevalence of religious sentiment in some European States in comparison to the secular nature of others has repeatedly allowed the European Court of Human Rights to illustrate the utility of the principle. Considerations of projects are therefore inherently utilitarian, the State proposing its own interpretation which benefits the majority of the population of said State. As such, the principle significantly reduces the efficacy of the cultural interests in relation to the protection of inimitable connections of individuals or minority groups against the prevailing culture or benefit of the State.

## 5. Survival

International human rights law, and the regional jurisdictions of the Inter-American Court of Human Rights and the European Court have however provided a concept of far greater relevance to the protection of groups such as the First Nations in the face of considerable industrial developments and governmental support for them. Where the very continued existence of a minority is under threat, the courts have opted to curtail projects, even those with significant economic benefits to the majority within a State (Maya Indigenous Communities of the Toledo District Case, 2004, para. 154–6). The reasoning for this position varies, but can be summarised by the protection of minority cultural beliefs from arbitrary destruction to meet the needs of a majority based on the cultural and social preferences of that group alone. In practice the concept has, as a minimum, ensured survival of inimitable cultures and is seminal within the respective jurisdictions, undermining as it does the sovereign wishes of the State in most instances.

Significant links to the emerging concept of 'ecocide' are evident in analysis of the ensuring of survival as a minimum standard in human rights jurisprudence. The concept of ecocide however is particularly focused on the removal of environments and features thereof, which are inextricable from the cultures reliant upon them without using them to also cease to exist. Ecocide is 'based on a functional understanding of the national/group structure, whereby the physical and cultural aspects are seen as interdependent and indivisible'. (Husemann and Short, 2012, p. 221) As such it has a broader scope to consider potential cumulative and secondary impacts to groups as a result of environmental damage. The principle of survival is however restricted to instances where the discontinuation of an inimitable culture is proven almost incontrovertibly to be inevitable. This is as cultures can merely diminish over time and as such there is a necessity of arbitrary action preventing the ability to practice a culture rather than the elimination of the peoples themselves which would be better addressed under provisions concerning harms to the individual. Indeed the courts have been keen to stress that mere inconvenience does not prevent the balancing of cost and benefits such as that discussed earlier from deciding the fate of the project or policy in question (Länsman et al. v. Finland, 1994). As such whilst providing an incomparable degree of relativity to many provisions affording environmental protection, and certainly those with full binding force and effective enforcement procedures, the principle is in essence a last resort. Where impacts are cumulative, application is also often only possible *ex post facto*, and significant damage has already been done and may be irreparable.

For industries such as the extraction of oil sands (and oil extraction generally) which are composed of numerous projects competing within a geographic region this approach to protection is particularly unsuitable. Projects can be assessed for approval primarily according to the individual impact they will have. Thus, whilst some cumulative effects are considered in processes affording licenses and permissions to such projects, others are difficult to ascertain accurately or not considered at all. The management of tailings ponds is a clear example of this. A particular degree of containment of tailings for each project is necessary but a consideration of the cumulative impacts of tailings seepage upon a region is not as yet within the criteria which must be established to obtain approval. Monitoring of seepage which does occur is performed by extractors themselves, and where such seepage is detected any wastewater is required to be recaptured by the responsible party. Considerable barriers are also present to any group claims under human rights law which involve more than one claimant. Only certain rights are capable of supporting group actions, which further compounds the issue of lacking evidence as it must often also be attributed to impacts to a single individual or family group. This 'excludes public interest proceedings from protecting environmental values, unless each and every applicant can prove they are directly affected in their individual spheres' (Grosz, 2011, p. 234).

Some seepage is however argued to be inevitable for each pond, and for one project such a reality is an acceptable environmental impact unlikely to have any measurable adverse effect when considered alone. This is especially true in the face of the considerable economic benefit it affords the province and Canada as a whole, which would be taken into account under the margin of appreciation doctrine. Should no direct impact to human health be proven, the current approach to monitoring could allow relatively minor individual seepage to go unchecked and accumulate with other seepage, or build over time in a particular region. As a threat to the survival of indigenous peoples therefore the tailings ponds individually would not suffice to meet the precedents set in the courts highlighted. Thus this doctrine offers little protection in circumstances where harm is neither direct nor blatant. This is the case for tailings ponds, at least to the extent that said harm is scientifically beyond any reasonable doubt.

## 6. Free, prior and informed consent

The minimum standard of ensuring the survival of minority indigenous cultures is often connected to one offering a potential means of ensuring that continued existence, that of free, prior and informed consent. As a principle, free prior and informed consent is a practical variant of another, self-determination. This notion represents one of the 'more controversial norms of international law' (Klabbers, 2006, p. 186). Self determination espouses that an identifiable group connected by common heritage, beliefs or social and cultural ties ought to be afforded the ability to determine their own development. The debate surrounds the extent to which the concept should be afforded, given its immense potential impact. Although the principle has wide ranging consequences, it has led to the development of the requirement of free, prior and informed consent to actions which might influence the economic, social and cultural development of an identifiable group. In the context of indigenous peoples, the concept has been applied to the approval by federal or regional governments of projects with potentially extinguishing impacts upon indigenous communities and cultures reliant upon them. Demands for its application have particularly focused on such situations in South America, though its relevance to the context of the First Nations of Alberta is in no way diminished by the consideration of an alternate continent. For projects such as those prevalent in the province to obtain oil sands, the requirement of the free, prior and informed consent of affected groups effectively affords a veto over any developments deemed as having adverse potential. As such it would ensure the survival of traditional cultures and practices absolutely should those afforded the right utilise it to do so.

Note should be made that in the face of industrial intrusion on traditional lands, some groups have opted to exploit rather than fight the corporate juggernauts they face. The prevalence of aboriginal firms engaging in the oil sands industry in Alberta, and in similar situations has risen. Given the choice between a society underpinned by traditional values, but without the practices underpinning them but guaranteed survival thereof, and fighting a legal and political battle without any guarantees with regard to the outcome has driven many to opt to preserve some formulation of their traditional culture rather than see it dwindle absolutely. As such it should be noted that the concepts of self-determination and free, prior and informed consent should not be presumed to automatically exclude commercial interests absolutely. However, 'ignoring or belittling the importance of subsistence or barter-based economies also allows the inference that surrounding lands are unoccupied, empty, or are wilderness areas that can be claimed by the state' (Johnston, 1995, 116).

The principle has thus been opposed by many authorities and states wishing to exert their sovereignty over lands which are often not owned by the indigenous peoples impacted upon, or which the government has the ability to seize or utilise. They do so on the basis of a number of considerations. Firstly from a utilitarian perspective some suggest that to afford a minority the power to control the economic development of the state or province as a whole would be remiss; as such most agree that, 'the intent is not nearly that strong'. (Asch, 2014, p. 67) Secondly there are suggestions that the power would be abused, and all projects refused in order to preserve an idyllic notion of the land regardless of the relative intensity or indeed existence of harms arising from them. Canada and the USA in particular emphasised the detrimental impacts to economic development more broadly which this might have (Altamirano-Jimenez, 2013, pp. 52–53). Finally few states accept curbs to their sovereign control over their own territory, a fundamental concept in international law which ensures the ultimate responsibility of the state (and governing authority thereof) to control its internal affairs. As Schrijver suggests the growth in discussion of such concepts, 'necessitates the interrelating of sovereignty and self-determination' (1997, p. 296).

Alberta is no exception to this widespread objection to affording such a considerable power to a minority. In this context, the Canadian Government retained the proprietary interest in the lands reserved for indigenous peoples at the beginning of the twentieth century under the constitutional divisions of powers within the state. Included within the treaties forming these reserves is a caveat that the land afforded to the First Nations tribes can be utilised by the government to access natural resources. Whilst this governmental option over the land is limited to actions which do not undermine the purposes for which the land was originally reserved, impacts which do so are, as has been discussed, difficult to prove (R v Isaac, 1975). The potential for impacts to be of a trans-boundary nature also undermines this protection of reserved lands. Seepage of contaminants from tailings ponds located outside of reserves could leach onto reserved lands with relative ease and without warning. This is especially true given the lack of knowledge concerning underground aquifers which might allow dispersal of contaminants, and the possibility of them bioaccumulating in flora and fauna before crossing into these protected areas. The present approach to licensing in Alberta is not likely to develop into one incorporating the free, prior and informed consent of the First Nations peoples as one of the criteria for approving projects. This is as the government is unlikely to concede its right over the lands in question. However, were this to become a reality, the veto afforded in the process would only be likely to concern projects on, or with established impacts to reserved lands. A concession of sovereignty beyond this would be beyond that any authority would be willing to concede. As such indirect impacts would not give rise to situations in which the necessity for consent arose. Given that many of the potential impacts of concern are not direct in nature, and do not emerge solely when projects are placed on the land affected, the likely extent of any demand for free, prior and informed consent in the licensing process would afford little more protection than that afforded at present.

The reality in this regard is instead that the indigenous peoples potentially affected by industrial projects are at best offered a position within the licensing authority overseeing their traditional lands, or rights to air concerns within that process as stakeholders in the project. In Alberta this has been the case, and though the balance of parties on the boards adjudicating the ongoing monitoring of projects had favoured producers, new assessment procedures have addressed this (Alberta Environmental Monitoring, Evaluation and Reporting Agency, 2014). The various regulatory processes which prospective oil sands extraction projects must overcome include a requirement to inform and consult affected stakeholders. This is a broader classification than that of indigenous peoples, collectively termed 'aboriginals' in Canadian legislation and including Indians, Metis and Inuits, and even more inclusive than the solely numerical conception of a minority. Whilst this breadth is necessary to allow for the concerns of those beyond the indigenous populace, it ensures that their inextricable links to the prevalent environment are not accounted for. As such, assertions of impacts to groups can be considered without always paying respect to the specific practices for which they wish that environment to be preserved as no method of consultation is prescribed. Thus the present balance of protection of the few and maintenance of the development of the many is easily justified owing to the failure to consider the acute significance of the environment to the indigenous populace adequately.

## 7. Identifying the issues

As has been highlighted however, assigning such relationships a value which can then be used in a comparative assessment as part of the licensing procedure is difficult. A method of identifying environmental features of critical significance, and the reasoning

for that significance is therefore necessary. Procedures for licensing projects could then attempt to impose requirements based upon those specific needs rather than the current approach which is somewhat 'all or nothing' in many domestic legal contexts. As Short (2010) asserts, 'destruction need not be direct but can of course be achieved indirectly through inflicting on the group 'conditions of life' (such as dispossession and environmental destruction)' (Short, 2010, p. 840). The permitting of extraction, despite imposing some restrictions on firms, is largely binary in relation to indigenous peoples at present, it is either allowed or not. Imposed restrictions are rarely directly addressed to particular needs of other stakeholders. For example, water extraction from natural courses to facilitate extraction and refinement of the raw material is regulated for all oil sands extraction projects and limitations are imposed on the basis of volume. Flow rates in rivers, and depths or volumes of aquifers vary according to season and prevalent weather conditions. As such to measure impact by volume extracted alone is remiss. Instead, for example, a series of purposes to which a river is put could be gathered and regulations imposed upon extractors to ensure not only extraction of lower volumes but also the preservation of the capacity of said river to support the uses to which it has been put historically.

The construction of an identified and agreed list of interests with no ascertainable pecuniary value would allow for their better consideration in the various stages of the permitting of potentially environmentally harmful projects. The mere identification of interests would by no means assure their protection, however a greater awareness of the impacts regardless of the continued difficulty of valuing them, allows for the development of methods to ensure regulatory procedures afford them the requisite gravity. As Maughan (2014) states, damage has in the past, 'resulted from a scarcity of techniques and regulatory tools available to identify, analyse, and control environmental consequences' (Maughan, 2014, p. 4). A comparable example of this approach is seen in the International Union for the Conservation of Nature (IUCN) and the list of endangered species it creates and publicises (International Union for the Conservation of Nature, 2014). One of the aims of the organisation and the list is the better understanding of both tangible and intangible values of natural resources (International Union for the Conservation of Nature, 2014). Whilst particular programmes promoted by the union do suggest tangible actions in response to threats to particular species, the list itself is a collation of data pertinent to the preservation and understanding of those species at risk. The document instead facilitates action within states, regionally and internationally which can be negotiated and applied at the most pertinent 'national, regional and global levels. . .[and by]. . .governments, non-government organisations and others,' (International Union for the Conservation of Nature, 2014) according to the concept of subsidiarity. A similar concept for indigenous peoples would allow for the construction of policies which operated at each of these levels in order to ensure the optimum protection for an indigenous group and their connections to a particular ecosystem. This could thus be achieved whilst supported by broader policies for indigenous peoples and indeed all humans generally.

By way of example, at present many environmental protection measures and considerations in the licensing of hydrocarbons such as the oil sands preserve the basic aspects of human health. Essentially these ensure that the environment in proximity to active operations and that which remains upon their reclamation is fit for human habitation. This disregard for the established environment is evidence of the bifurcation of the impacts discussed above and critiqued by Heinberg (2014). The choice to develop or not is far from merely one between the environment and jobs (Heinberg, 2014, p. 124). However the relentless focus on resource scarcity, and the solution thereto strips environmental concerns to merely the ability to support human life. As the Government of Alberta's own 'Vision for the Future of the Oil Sands' suggests, the development should, 'support, clean, healthy and vibrant communities for Albertans and future generations' (Alberta Energy Ministry, 2009, p. 8). The demand that land in Alberta used to store tailings from oil sands extraction projects be returned to an 'equivalent capability' (Environmental Protection and Enhancement Act, 2000, Art. 146(b)) is a striking example of this narrow anthropocentrism in decision making. Reclaimed environments must not be of a particular form, nor possess particular features but be merely equivalent to that which existed prior to disturbance and not pose a threat to human health. For the connections that indigenous peoples possess with particular ecosystems and features thereof, this approach to regulation is fatal to their ability to express their culture. The impacts are often however neither direct nor immediate; instead, often they are cumulative owing to disturbance rather than destruction. Impacts to the boreal woodland caribou in Alberta as a result of the extraction of the oil sands are a clear example of this.

Interference of pipelines and communications routes, the decreased prevalence of lichen-rich boreal forest which is removed to allow extraction, and the increased human presence in the regions exploited all reduce the numbers of caribou frequenting established migratory grounds (Tracz et al., 2010, p. 32). Thus the caribou are not being killed, though a suggestion has been made that increased predation occurs as a result of concentration of prey animals into smaller ranges than those previously utilised (Boutin et al., 2004, p. 799). As such threat to the survival of this species on which traditional hunting is predicated is not immediate and as such arguably does not threaten cultural survival. Instead it makes continuing to express that culture more difficult than it had been, requiring a wider hunting range or reducing the number of caribou successfully brought in. The measurements of such cumulative impacts is fraught with difficulty and as such establishing evidence of this secondary impact of significant enough weight to halt developments with massive economic benefits would be unlikely. Whilst in the long term this is a threat to the survival of the culture, as ever-increasing difficulty would increase the likelihood of its abandonment, current regulatory approaches do not address such concerns adequately. This is where greater awareness of the inextricable links to particular environmental features to inimitable cultures would allow the extension of the increased protection afforded to human health to include them also. As a result the licensing of projects with no threat to such features or human health could continue, but where there are shown to be potential impacts to features identified as of inextricable cultural significance the regulatory procedures could account for this. In turn this would place the protection of those connections on a par with those to the home and human health seen in environmental regulation globally without erecting wholesale barriers to development which favours the majority of a population and conforms with hegemonic cultural values and practices.

## 8. Concluding remarks

A register of cultural significance is needed and proposed, akin to the IUCN Threatened Species List (International Union for the Conservation of Nature, 2014) and that regarding the Species at Risk (Species at Risk Public Registry, 2014) in Canada. The list of cultural connections to inimitable environmental features would provide a base point for protection of those features. Essentially the feature would have to be preserved to a level capable, as a minimum, of supporting that cultural significance. For example a river fished upon using traditional methods by an indigenous populace would have to be maintained to a standard able to support such practices. Beyond this obligation, water withdrawals

would be permitted in effect imposing a degree of margin of appreciation to both interested parties.

The resultant less stringent permitting of projects which do not impact upon such registered culturally significant environments arguably opposes broader environmentalist values where inimitable cultures are not under threat. This suggestion is however failing to recognise that existing environmental regulations would continue to operate in all instances where no such cultural interest had been recognised. Whilst a degree of subjectivity as to whether an environmental feature has significant cultural value is demanded, the involvement of expert evidence, such as from anthropologists, historians and other local communities could be woven into any criteria demanded for inclusion on the list of registered cultural interests. Indeed, such a concession is realistic. Ultimately any measure constricting corporate activity to protect the environment must have broad support from within the industry upon which it is imposed. This is largely because companies are rarely driven solely by moral or ethical aspirations, unless actions in accordance with them offer other, non-pecuniary, benefits. This is as, 'From a purely economic point of view, it could be argued that every dollar spent on corporate responsibility beyond legal requirements and basic standards of decency is a dollar diverted from activity that could potentially generate profits' (Leisinger, 2009, p. 40). The notion of corporate social responsibility is often underpinned by concerns over negative public relations which might result in a, 'market backlash,' rather than an embedded desire to conform to goals which do not involve increased efficiency or profit (Hawkins, 2006, p. 15). As such measures must concede that some use of hydrocarbons will continue for years to come, and that for them to have efficacy they must be at least acquiesced to by extractors. This is embodied in the proposal of Fiorino (2006) that regulators act 'less on other actors in a hierarchical relationship' and rather, 'in a more collaborative and communicative way' (Fiorino, 2006, p. 20).

The necessity to concede that some extraction is inevitable is paramount. Articles such as this are written on computers ultimately made largely of materials for which hydrocarbons are essential, whether as a source of energy to produce and power it or as a material involved in its composition. As such to propose a wholesale abandonment of hydrocarbon extraction would be remiss. Similarly in relation to culturally significant environments, such as the boreal forest of Canada, to argue that they too are untouchable would be to suggest a form of inverse utilitarianism focused on minority cultures, where the development to which the many has become accustomed is negated by the interests of the few. Balancing of these competing elements in a manner which is both respectful of the historical, social and cultural value of preserving indigenous ways of life, yet acutely aware of the reality that our continued development is, at present, inextricable from a degree of hydrocarbon extraction is therefore key. In order to achieve this, the nature of corporate entities must be taken into account in environmental regulation concerning indigenous peoples. Essentially, 'Law and policy makers must establish a regulatory framework that creates a level playing field in which companies may pursue their economic imperatives whilst also protecting the environment,' on which indigenous peoples rely (Pereira, 2012, p. 73). The approaches of human rights law outlined above do not therefore offer viable approaches to ensuring the protection of indigenous cultures where impacts are not direct. However, the escalation of impacts to a degree where such approaches could be utilised is equally as undesirable for companies as it is for the peoples threatened by them.

Such a reality would undoubtedly result in significant costs to them regardless of whether legal challenges against them were successful. The sheer inconvenience caused by potential temporary injunctions on extraction whilst proceedings were active would be prohibitive. This is disregarding the negative publicity which would result and the potentially significant restorative costs were such a breach deemed to have occurred. These costs, both pecuniary and reputational are what ought to be emphasised to corporate entities in regulatory contexts. Gunningham (2007) notes the growing, 'importance of a range of non-traditional strategies including negative publicity, informal sanctions, and shame…in defining organisational behaviour' (Gunningham, 2007, p. 202). Whilst threats of litigation are not an unwise approach, few indigenous groups or charitable, activist and other non-governmental organisations could muster the funding necessary to engage in a prolonged legal battle with large multinational extractors. The language used to engage them must instead be commercial in nature itself. The creation of a register of cultural interests such as that described above, limiting but not completely eliminating the possibility of extraction projects could be compared to the restrictions placed upon the building of new headquarters in urban areas, or those imposed upon older buildings with protected status. Such projects are not impossible; they are merely inhibited. Similarly construction of projects with engrained respect for, or precaution with regards to the cultural value of highlighted environmental features must be coaxed as an investment. Whilst more costly in the short term such projects would ensure the avoidance of litigation, maintain good public relations both with indigenous peoples and wider society, and potentially permit expansion of projects in other areas.

The proposed register of cultural values of environmental features would also be limited to those accepted onto the list following an evaluation of the merit of the suggested connection. Such an evaluation could be made independently via existing organs within the United Nations, or warrant the creation of its own as was the case for the IUCN. The restricted nature of the list would benefit both companies and minority groups by comparison to the current position. Indigenous peoples and minorities would be afforded a specified and assured degree of protection to environmental features of cultural significance to them, relative to the manner in which it is connected to their beliefs and way of life. Extraction companies would gain the certainty of knowing whether a legal claim by any such groups would be likely to succeed. Also knowledge of the extent to which their activities may disrupt an environment and be devoid of risk of contention would be afforded. At present such firms are ultimately subject to decisions of domestic, regional and international judicial and quasi-judicial organs with regards to the validity of claims from indigenous peoples concerning adverse effects to environments of cultural significance. Such certainty would in turn allow for more accurate planning of projects on their part, ensuring an equally more accurate assessment as to the cost of said projects and thus prices and profit margins for this perpetually significant type of resource.

Whilst not without challenges in administrative terms, the formation of a register of cultural significances such as that outlined would shift the debate regarding unconventional hydrocarbon extractors encroaching upon them from its current bifurcated position. This shift is ever more important given the likelihood that methods utilised by firms to extract hydrocarbons will become increasingly 'extreme' in terms of their impact to the environment (Lloyd-Davies, 2013). At present such firms are either sinners irrevocably harming inimitable environments, or saints perpetuating the economic development of society and keeping the proverbial lights on. As Crook and Short suggest, this risks 'the division of the world between industrialised nations and those countries and regions, such as the territories of the indigenous peoples in northern Alberta, Canada, which supply materials and resources, shrouded in an ecological pall' (Crook and Short, 2014, p. 301). Such a divided narrative is however unhelpful and indeed potentially inhibitory of regulatory progress, as well as ignorant to

the realities of the likely need for some degree of extraction of unconventional hydrocarbons. This would allow for the recognition of cultural interests in environmental features by regulators and extractors, but also the continuation of a necessary industry. As such it would become possible to justify the limited extraction of unconventional hydrocarbons in regions containing culturally significant environmental features.

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