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Learning from Indigenous Water Ethics

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Abstract
Even as Indigenous cultural lifeways are gaining newfound respect, as evidenced by the UN Declaration of the Rights of Indigenous Peoples (2007), the very real threats to traditional Indigenous land and waters, and indeed individual physical safety, continue unabated. This chapter focuses on Indigenous efforts to protect culturally important water ecosystems and identifies lessons that can be usefully applied to the modern challenges of sustainable water governance. Water ethics provides a common framework for articulating water's ontological significance for Indigenous communities in contrast to the role ascribed to water in Western cultural contexts. For Indigenous societies, rivers are living beings that nourish human communities and that humans have a responsibility to protect. It is a profoundly Western notion that people have a moral duty to put rivers to work for economic benefits such as irrigation or hydropower. Ontologies matter: The ethical response to a living river is to protect its life, while the ethical response to a river viewed as a lifeless economic resource is to extract as much benefit from that resource as possible. Both Indigenous and non-Indigenous societies practice what they each consider to be ethical water management. When the sustainability of water resources is considered, however, Indigenous ontologies have an adaptive edge. Clearly there are potential lessons for sustainable development!

Key Words: Indigenous, Water Ethics, sustainability, ontologies

Indigenous Peoples weave natural resources -- water, land, crops, and forests -- into their cultural identities. The interplay of culture and nature has evolved over centuries and millennia, binding their fates inextricably together. The Egyptian civilization was literally born of the Nile River; The Hopi People in the Southwestern United States trace their ancestry from water beings. There is an elemental connection of relatedness that informs Indigenous Peoples' economic exploitation of nature. Hunting can take the form of a ritualistic conversation with the animals being hunted, so that even killing in this context has the effect of further connecting the human and natural worlds. In such a world, the welfare of hunted animals is viewed as an ethical responsibility of local people, just as contemporary Indigenous Water Protectors in the United States feel a responsibility for the Missouri River, threatened by contamination from oil pipelines. Indigenous ecological knowledge constitutes a cultural heritage that can inform our present and our future, and not only the past (Suzuki and Knudtson 1992).

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Yet even as the relevance of Indigenous Traditional Ecological Knowledge is becoming more widely acknowledged, the cultural integrity of Indigenous communities continues to be sacrificed in favor of dams, mines, and other forms of conventional economic development. The discredited economic logic of the 20th Century, which the UN Sustainable Development Goals (SDGs) are seeking to overturn, continues to guide real-world decisions. There is a terrible disconnect between what the world is doing (e.g., burning fossil fuels) and what the world is saying it wants to be doing (e.g., reduce global warming). The future we are actually creating is almost the antithesis of "The World We Want" that is described in UN sustainability meetings. This disconnect is nowhere more apparent than in the water sector, where freshwater quality continues a relentless trajectory of degradation even as river restoration science becomes ever more sophisticated (Arthington et al 2018).

The prevailing neoliberal water ethic that views water as an economic resource to be exploited for production and profit, is a manifestation of contemporary water culture. According to this ethic, water managers have a responsibility to extract as much water as possible from nature, in order to generate economic value from that water. These materialistic values favor short-term profits over long-term ecosystem sustainability and lead almost inevitably to the degradation of water resources. This is no longer a controversial assertion; the danger of basing water policies on neoliberal economic principles is widely acknowledged. The UN High Level Panel on Water adopted the Bellagio Principles on Water Values to highlight the need for new ways of valuing water beyond monetization (HLPW 2017). Solving the water crisis will require a re-valuing of water to incorporate core principles of environmental sustainability, social justice, and transparent governance.

Where can we find the value principles to inform a new ethics of water that meets the tests of sustainability, equity, and justice? There are many models and schools of thought to choose from; we can find diverse value perspectives within both Western and Oriental philosophical traditions which can guide us to become better stewards of water. But in my view the most compelling guidance for transitioning away from our current destructive relationship with the natural world is to be found within the value systems of contemporary Indigenous Peoples. The very people who are most threatened by extractive industries have much to teach us about co-existing with the natural world. By emulating Indigenous value systems, we can learn how to rebalance our out-of-control exploitation of water. We can, and in order to meet the goal of sustainable development, we *must*, rebalance water management to emphasize water protection rather than water extraction.

Water Ethics as an Aspect of Water Culture

Values refer to “standards or criteria to guide not only action but also judgment, choice, attitude, evaluation" etc. (Rokeach 2000, p. 2). Ethics refers to the principles we adopt in order to apply our values within the complicated settings of actual behaviour. Both our values about how water should be used and how rivers should be managed, and the ethical principles that guide our actual water behavior, can be considered aspects of water culture (Groenfeldt 2019, pp. 6-7). Ethics evolve as values change. We can observe this dynamic in the way water policies are changing to reflect greater concern about protecting aquatic biodiversity by maintaining at least minimum environmental flows. As our values shift towards greater concern for environmental sustainability, the ethical principles which define ethical behavior also shift. Maintaining environmental flow has become expected behavior in water governance and is mandated in the national water laws of Australia, South Africa, and (somewhat indirectly) the EU Water Framework Directive (Howarth 2018).

The rationale given for environmental flow policies, however, is not usually an ethical argument, that it is the right thing to do. Instead the environmentally friendly policies are justified with an economic argument, that maintaining ecological function makes good *economic* sense. The economic value of the ecological services of a flowing river -- including the (economic) benefits of recharging riparian aquifers, supporting riverine fisheries, protecting river-side real estate values, etc. - is greater than the economic benefits of fully using and depleting the river. From a water resources perspective, maintaining environmental flow is a means for protecting the integrity of the water resource.

Additional benefits from a flowing river could also be cited such as social equity (All stakeholders have a right to a flowing river) and cultural/spiritual values (We enjoy seeing the river flowing). These "soft" arguments in favor of environmental flow requirements may be fully consistent with stakeholder values, but are in a sense superfluous. Since water is categorized as a resource, an economic argument is adequate, and it is already ethical: It would be unethical to not protect the sustainability of the water resource.

I am presenting this example to show that (a) Water ethics is a key dimension of water culture, and (b) Within the paradigm of Integrated Water Resources Management (IWRM) where water is viewed as a resource, the economic values of water enjoy a privileged position. Thus the ethics that matter most are the economic ethics of using resources wisely. Caring for rivers because of inherent rights of rivers to remain healthy lies outside the "ontology" of IWRM. Legal efforts to recognize rivers as legal persons, following the case of New Zealand granting legal personhood to the Wanganui River (Iorns Magallanes 2018) have met solid resistance. The enabling legal and moral environment does not seem conducive to valuing rivers for their own existence in a way analogous to human rights laws enacted to protect people. Indigenous ontologies of water, however, provide space to Nature and to lakes and rivers. What we can learn from Indigenous understandings of what water is, and what rivers are, is an alternative worldview where rivers are relatives and we humans have a responsibility to respect our water relatives. What are the ethical principles that would support a world where rivers are our relatives?

Indigenous Views of Water

Tapping into the knowledge and philosophical perspectives of Indigenous Peoples is both a utilitarian strategy (for crafting more effective sustainability interventions) and a moral responsibility. We have a "duty to learn" about Indigenous concepts lest we inadvertently undermine the very ideas that are so important to preserve. Chief Justice Lance S.G. Finch of the British Columbia (Canada) Court of Appeal defines the settler-colonialists' "duty to learn" as a first step to accommodating cultural diversity (Finch 2012):[2] "How can we make space within the legal landscape for Indigenous legal orders? The answer depends, at least in part, on an inversion of the question: a crucial part of this process must be to find space for ourselves, as strangers and newcomers, within the Indigenous legal orders themselves." In other words, we have an obligation, a duty, to learn how Indigenous Peoples view water and water ecosystems, lest we repeat the mistakes of 19th Century missionaries who sought to convert Indigenous Peoples to a Western belief system, which today is implicated as

[2] Further details about the conference where this talk was presented (but not the talk itself) can be found at the website for the Continuing Legal Education Society of British Columbia, http://www.cle.bc.ca/onlinestore/productdetails.aspx?cid=648.

contributing to runaway climate change. Better understanding of and appreciation for the water ethics of Indigenous Peoples can help us rebalance our unsustainable water habits.

Given the many thousands of distinct Indigenous cultural groups in the world, we must be cautious about over-generalizing a uniform Indigenous world view about water. Yet when representatives of diverse Indigenous groups convene in international water conferences, they are able to find agreement about certain basic principles. An illustration of this agreement-making capacity is the Indigenous Peoples Kyoto Water Declaration formulated by Indigenous participants at the 3rd World Water Forum in Kyoto, Japan in 2003. The key drafters were Tom Goldtooth, president of Indigenous Environmental Network, and Victoria Taupi-Cruz, who at the time was Executive Director of Tebtebba [and later became the UN Special Rapporteur on The Rights of Indigenous Peoples]. The Kyoto Declaration was communicated to the World Water Forum by a march through the conference center, followed by a press conference. Later the Declaration was posted on various websites[3] and was also included in the UNESCO publication, *Water and Indigenous Peoples* (Chibba et al. 2006, pp 176-179).

The Indigenous Peoples Kyoto Declaration on Water outlines two fundamental themes of water ethics: (1) The relationship that Indigenous Peoples have with respect to water, and (2) The rights of Indigenous Peoples to water access and self-determination about how water should be used and protected.

Relationship to Water

The first three statements of the Declaration describe how Indigenous Peoples are related to water:

> 1. We, the Indigenous Peoples from all parts of the world assembled here, reaffirm our relationship to Mother Earth and responsibility to future generations to raise our voices in solidarity to speak for the protection of water. We were placed in a sacred manner on this earth, each in our own sacred and traditional lands and territories to care for all of creation and to care for water.
> 2. We recognize, honor and respect water as sacred and sustains all life. Our traditional knowledge, laws and ways of life teach us to be responsible in caring for this sacred gift that connects all life.
> 3. Our relationship with our lands, territories and water is the fundamental physical cultural and spiritual basis for our existence. This relationship to our Mother Earth requires us to conserve our freshwaters and oceans for the survival of present and future generations. We assert our role as caretakers with rights and responsibilities to defend and ensure the protection, availability and purity of water. We stand united to follow and implement our knowledge and traditional laws and exercise our right of self-determination to preserve water, and to preserve life" (Ibid, p. 176)

Indigenous Peoples of Australia view water an integral part of the world created by ancestral beings during what is colloquially known as the Dreaming (Jackson and Barber 2014). The land and the waterscapes are understood to be living entities that are responsive to human actions and human behavior. People place value on their relationships to the landscape, just

[3] The Declaration can be viewed or downloaded from the website of the Water Ethics Network, https://waterethics.org/resources/publications/ip-kyoto-water-declaration-2003/

as they do to one another. This is the meaning of the expression heard in UN speeches by Indigenous Leaders referring to "All our relations." Those relationships are with other humans, animals, the landscape and the waterscapes, and imply both rights (the right to be acknowledged as a relative) and responsibilities (to protect the land, water, and associated plants and animals). There is also a responsibility for understanding nature as a prerequisite to making use of resources: "Possession of knowledge of the environment, its natural features and vitally, its spiritual dimensions, is a prerequisite to exercising rights to land and water" (Ibid).

Right to Water and Self Determination

The Kyoto Declaration also highlights the rights of Indigenous Peoples to use and enjoy their customary water resources and their broader cultural rights to choose their way of life. These rights were further clarified by the UN General Assembly in the 2007 Declaration on the Rights of Indigenous Peoples, as discussed later in this paper. In the words of the 2003 Kyoto Declaration:

> 9. We Indigenous Peoples have the right to self-determination. By virtue of that right we have the right to freely exercise full authority and control of our natural resources including water. We also refer to our right of permanent sovereignty over our natural resources, including water.
> 10. Self-determination for Indigenous Peoples includes the right to control our institutions, territories, resources, social orders, and cultures without external domination or interference.
> 11. Self-determination includes the practice of our cultural and spiritual relationships with water, and the exercise of authority to govern, use, manage, regulate, recover, conserve, enhance and renew our water sources, without interference" (Chibba et al. 2006, p.176)

Water's Meanings

In her analysis of what water means for the Carcross/Tagish First Nation in Canada, Eleanor Hayman (Hayman et al 2018) identifies three distinct but synergistic dimensions of the Indigenous water paradigm: (a) Water as metaphor, (b) Water as map, and (c) Water as responsibility.

Water as metaphor: Water serves as a multi-purpose metaphor for living one's life in the sense that everything is connected (my life with yours; our human lives with the natural world) and the concept of flow in the sense of a circulation of virtues, or borrowing from Eastern religions, the law of karma. In these senses water provides a useful and ubiquitous metaphor that is good to think with (Chen et al 2013; Cruikshank 2012).

Water as map: Water bodies -- rivers, lakes, wetlands, springs, or (in the Yukon region especially), glaciers, are ready-made features that can orient direction both physically (north/south, upslope/downslope) and culturally, identified and remembered through story (Basso 1996). Deep mapping "intentionally creates space for ontological difference [and] gives voice to aqua-centric wisdom" (Hayman et al 2017, p. 237) through documenting the stories linked to water bodies.

Water as responsibility: Indigenous cultures recognize a responsibility to water in the form of respect (through prayers, ceremonies, and storytelling) and protection in the sense of according the category of "sacred" to water bodies and treating them, and speaking about them, in respectful ways. Respecting and protecting constitute a deep ethical responsibility to water which was displayed on a world stage at the Standing Rock protests in South Dakota, USA during 2016. Native protesters called themselves "Water Protectors", protecting both the land and water from the oil pipeline being constructed across their territory, and under the Missouri River (Veilleux 2017). Though not successful in blocking the pipeline, which was supported by an overwhelming coalition of state and local government, the US Army Corps of Engineers, and the pipeline company (supported by heavily armed security forces), the protests clearly illustrated Indigenous values of responsibility to the land and water.

Given the stark contrast between the cultural paradigm of water in Indigenous societies vs. the cultural paradigm of water espoused by US Army Corps of Engineers and the oil companies, how can the two worlds communicate? There are deep conceptual challenges that need to be addressed, having to do with colonization and the hegemony of conventional paradigms of water and development. We need to "decolonialize" our minds (Porter 2010) in order to understand Indigenous concepts of what water is, and how to establish an ethical relationship with water. We need to overcome own cultural biases and make space in our minds for other ontologies.

Ontologies of Water

"Ontology" refers to fundamental beliefs about the nature of being and existence. Ontologies of water refers to beliefs about the nature of water and bodies of water, such as a river. These issues of philosophical belief take on very practical relevance when something drastic is proposed for the river, such as a dam or a mine that could cause irreparable harm. The success of Western colonialism and the hegemony of Western concepts of economic development was facilitated by political, economic and military power, of course, but this should not blind us to other less obvious ways that colonial cultures imposed a colonial ontology of water. The colonial impact on Indigenous ontologies was perhaps even more devastating than the physical conquest of territory and governance institutions. Indigenous concepts of nature were violated and continued to be challenged through the process of economic development assistance. Just as Christian missionaries sought to replace Indigenous religions, World Bank "missions" offered financial and technical assistance to reform key economic sectors including water and agriculture. I refer to the dynamic of Western experts reforming and literally reframing the water sector as a process of "semiotic hegemony" (Groenfeldt 2016). Not only are new policies forcibly introduced as conditions of financial assistance, but a new ontology of water comes along with the funding.

Indigenous ontologies are rarely taken seriously if, as they often do, they run counter to Western development paradigms. Yates et al (2017, p.797) suggest that we need "...to take seriously the possibility and politics of a multiplicity of water-related worlds, highlighting multiple water realities and ways of being-with-water, not just different perceptions of or knowledge systems tied to water's (singular) material existence".

An example of water ontologies in practice is the question of whether a river is a living being or simply a flow of lifeless water. At the 2006 World Water Forum in Mexico City, I co-organized a session about indigenous perspectives on water, along with Tom Goldtooth, the founder and president of Indigenous Environmental Network (http://www.ienearth.org). We

titled our session, "Is Water Alive? Indigenous Understandings of Water." The professional water experts who dominated the World Water Forum had no doubts about the answer to the question we were posing. Of course rivers are not alive! And the Indigenous speakers in our session also had no doubts about the correct answer: Of course rivers are alive; they have agency and can choose how they respond to people. This understanding constitutes the basis for managing water through ceremonies and rituals, as well as through physical practices such as diverting water into irrigation canals. What non-indigenous settlers see as under-utilized rivers (because they are not diverted) are perhaps already being managed with prayers and songs which express gratitude for the river for simply being a river.

When different ontologies of water co-exist in a single river basin, how can integrated management decisions be undertaken? Cultural differences in worldview, which translate into different value preferences such as whether a proposed dam would be a benefit or a curse, cannot be resolved by more hydrological data or more economic valuation studies. Such deep conflicts of worldview constitute "ontological disjunctures" (Yates et al 2017) which require not only intellectual understanding to bridge, but also an emotional appreciation of the other's perspective.

The solution to the challenge of bridging diverse ontologies is to embrace cultural diversity and acknowledging the right to be different, to have different values, and to express different behaviors. But there is a pre-requisite to peaceful coexistence of divergent cultures. There must be a willingness to look first for value synergies and to set aside value conflicts, to favor cooperation over conflict. Successful mediation begins with good will on all sides from which appreciation of the other's position and respect for the other's values can lead to trust and eventually cooperation. Practical outcomes acceptable to all parties will be supported for different value reasons. No party receives everything it wants, but the core values of each party are respected and no party suffers egregiously (Wolf 2018).

Creating Space for Diverse Water Ontologies

The prevailing paradigm of modern global civilization, whether in its Western (Euro-American), Eastern (Asia) or Southern (Africa and South America) manifestations assumes that traditional Indigenous worldviews cannot possibly persist once their adherents taste the modern tree of rational materialism. Even as the powerful object lesson of climate change undermines the legitimacy of the global economic juggernaut, we remain reluctant to concede the relevance of spiritually-based Indigenous ontologies. With regard to water resources, this same hubris has blinded us to the potential benefits of Indigenous ontologies of water in solving the challenges of water security and sustainability. The solutions to the water crisis that the West continues to put forward, based on some variant of IWRM, are not really working. The world's water resources continue to be degraded in service to short-sighted economic development (IFPRI and Veolia 2015).

It is not my intent to disparage the role of science or economics in driving water policies, but rather to suggest that the concept of cultural diversity needs to be taken far more seriously (Johnston et al 2012). The process of re-balancing the domains of economy, society, and environment can be advanced through a more inclusive approach to water governance which prioritizes and protects cultural diversity. But how can this be achieved when one culture, that of Western-derived rational materialism, considers itself to be the epitome of social and

economic evolution? There is no room for other ontologies if a powerful consensus insists there are no viable alternatives.

Fortunately, the prevailing rational-materialist water ontology is experiencing some cracks. The unfolding climate crisis is undermining the moral legitimacy of neoliberal economic policies and motivating a new interest Indigenous approaches to natural resources management, including water. At the same time, the cultural rights of Indigenous Peoples have been clarified and acknowledged through the 2007 UN Declaration on the Rights of Indigenous Peoples. Though still in the realm of soft law and without legal teeth, this combination of appreciation for and rights of Indigenous cultures can be seen reflected, to some extent, in water planning and (to a lesser extent) water policies. The following section discusses progress in creating space for imagining other water ontologies through: (1) Appreciating Indigenous knowledge, (2) Respecting Indigenous cultural rights, and (3) Indigenous water planning.

1. Appreciating Indigenous Knowledge

Indigenous and traditional cultural values and practices have long attracted the attention of economic development experts concerned about avoiding obstacles to project objectives, and identifying culturally informed strategies for inducing behavioral change. A World Bank collection of papers on the role of culture in economic development (Rao and Walton 2004) suggested that cultural values can bend to the logic of rational materialism provided that the right enabling conditions of economic policies, social services (health and education) and infrastructure (roads, electricity) are in place. The message was that Indigenous cultures will, and essentially *should*, make way for a neoliberal agenda of economic development. In this view we need to understand Indigenous cultures, but only in order to change them.

The rise of sustainability as an overarching aim of economic development in the 1980s and '90s, and in particular the 1992 Rio Conference on Sustainable Development, introduced powerful new reasons to study Indigenous cultures. Traditional Ecological knowledge (Berkes et al 2000; Huntington 2000) and "Indigenous Knowledge" (Berkes 2012 pp. 3-5) became viewed as important not only for particular Indigenous communities, but more generally for the larger project of sustainable development. This broad category of traditional/indigenous knowledge includes very specific technical knowledge about managing particular natural resources, e.g., Balinese rice farmers' knowledge about controlling insect pests through careful timing of flood irrigation, as well as institutional knowledge about establishing roles and responsibilities for managing traditional irrigation canals in Nepal (Ostrom 1992). Not only was such knowledge useful for designing more effective rural development interventions, but also for improving natural resources management within even the most developed economies (e.g., Ostrom 2005).

Categorizing Indigenous knowledge as useful and potentially relevant beyond the Indigenous context, marked a paradigm shift in legitimizing Indigenous cultural traditions in the eyes of the outside world. In addition to the ongoing initiatives to protect Indigenous cultures through the instruments of international human rights law (Anaya 2000) there was now an additional cohort of allies: International development agencies and environmental experts interested in best practices for environmental sustainability. Recognizing the link between Indigenous knowledge and sustainability, in 2004 the annual UNDP World Development Report featured cultural diversity under the title, *Cultural Liberty in Today's Diverse World* (UNDP 2004).

But while traditional cultures were clearly being taken more seriously, the global world order was selective in which parts of culture would be incorporated into mainstream policies. The values and ethics underlying Traditional Ecological Knowledge (TEK) tended to be overlooked. Deborah McGregor (2004, p. 389) points out that traditional "Principles and values such as respect, coexistence, cooperation, honor, thanksgiving, reciprocity, balance and harmony, and recognition of interrelationships among all of Creation" are traditionally communicated through myths and stories. "Ultimately, TEK is related to Indigenous rights. Indigenous Knowledge cannot be separated from the people. This means that to protect IK or TEK, the people themselves and their ways of life must be protected" (Ibid, p. 399). It also implies that to fully understand TEK, one would need to study the cultural context of TEK, including the cultural values and environmental ethics that give rise to particular forms of TEK.

2. Respecting Indigenous Cultural Rights

One of the defining features of Indigenous Peoples is that they are culturally distinct. They have their own way of doing things, and their own reasons for doing them, and their identity as a social group is tied to their shared cultural identity. Their right to culture is recognized in UN Resolutions and most specifically in the 2007 UN Declaration on the Rights of Indigenous Peoples (DRIP) which has become an indispensable tool of Indigenous activism (United Nations 2008). Article 25 of the Declaration states that "Indigenous peoples have the right to maintain and strengthen their distinctive spiritual relationship with their traditionally owned or otherwise occupied and used lands, territories, waters and coastal seas and other resources and to uphold their responsibilities to future generations in this regard." Article 32 addresses the delicate issue of control over natural resources and makes three points :

1. Indigenous peoples have the right to determine and develop priorities and strategies for the development or use of their lands or territories and other resources.
2. States shall consult and cooperate in good faith with the indigenous peoples concerned through their own representative institutions in order to obtain their free and informed consent prior to the approval of any project affecting their lands or territories and other resources, particularly in connection with the development, utilization or exploitation of mineral, water or other resources.
3. States shall provide effective mechanisms for just and fair redress for any such activities, and appropriate measures shall be taken to mitigate adverse environmental, economic, social, cultural or spiritual impact.

Whose Laws? Recognizing Customary Water Rights

Under the Doctrine of Discovery proclaimed by the Vatican during the 15th and 16th Centuries, the Portuguese and Spanish Crown adopted very explicit policies of ignoring the customary land and water rights of Indigenous Peoples. This Doctrine established an unfortunate legal precedent invoked by the US Supreme Court in 1823 and never formally repealed. Indeed, many contemporary national legal frameworks, including US law, still incorporate references to the Doctrine as a justification for state expansion into traditional indigenous territory (Miller 2005:2–3). The moral legacy of this ethic is seen today in the general absence of state recognition of customary water rights (van Koppen et al. 2007).

An example of the practical impacts of not recognizing customary water rights is the case of the Pyramid Lake Paiute Tribe in the state of Nevada (USA). Traditionally the Indigenous community relied for their subsistence on the once plentiful fish from Pyramid Lake, a closed basin lake that has supported the tribe for the past 4,000 years. The lake is fed by the Truckee

River which flows out of the Sierra Nevada mountains. Shortly after 1900, the US government constructed a dam on this river, upstream of the lake, to divert water into an irrigation canal destined for Euro-American farmers some distance away. The dam diverted about half the flow of the river, launching a cascade of ecological interactions: the lake level dropped, salinity increased, and fish could no longer reach the upper river to spawn. The result was the near decimation of the Indian tribe, bereft of its primary source of subsistence (Wilkinson 2010). Court rulings during the 1970s to 1990s found that the US government had acted wrongly in ignoring the customary water rights of the tribe, but ruled that since so much time had elapsed, there was no practical way to compensate the tribe for their degraded lake (Wilkinson 2010:220–2).

Similar cases abound where indigenous communities relied on water supplies that were later wrested from their control. In the Northwest United States, the coastal Indian tribes who relied traditionally on salmon, have seen fish populations collapse from water diversions and hydroelectric dams (Fisher 2012). In the Andes, Indigenous farmers are engaged in a similar struggle: the irrigation canals first constructed by their Incan ancestors are being expropriated by state agricultural and irrigation agencies (Boelens et al. 2007).

The practical outcome of realizing the cultural rights articulated in the UN Declaration hinges on the capacity of Indigenous communities to act collectively to claim these rights, and also depends on national laws and policies. Both these levels - internal cohesion and national politics - are complex and dynamic. Indigenous communities, like all communities, are composed of different types of people, reflecting a range of personalities and power relationships (Douglas 2004). Representation of Indigenous Peoples' interests is further complicated by political institutions and local governance systems that are legacies of colonialism (Walker et al 2013). A further challenge within the water sector is the under-representation of Indigenous scientists and scholars who have few role models or peer guidance as they try to apply their traditional water values to their chosen scientific fields (Chief 2018).

3. Reclaiming Indigenous Water Planning

How can indigenous communities participate meaningfully in water planning conducted by agents of the mainstream society, when there are fundamentally different ideas about water itself? Planning needs to undergo a process of "unlearning" its Euro-American (colonial) assumptions about the nature of water (Porter 2010). "There is an ethic or duty of care to the land, its resource, and environments, particularly those located within the traditional territories of the group....Indigenous planning is placed-based and implies a long and close association...of the specific environment and what it can sustain" (Jojola 2013).

One promising approach for integrating Indigenous water values into the planning process is the systematic formulation of Indigenous water values into a formal water statement or declaration. The 2003 Indigenous Peoples' Kyoto Declaration on Water (discussed above) was a declaration at the global scale. In Australia, the Echuca Declaration was endorsed in 2007 by representatives of 31 Aboriginal communities, to formalize the concept of "cultural flows" (Taylor et al 2016). A similar approach of formulating place-based local statements about water offers the opportunity to define Indigenous water values in Indigenous terms, while also delineating specific management goals, such as environmental and cultural flows. Through such statements and declarations Indigenous communities can control their own narrative about water.

In British Columbia, the Simpcw First Nation Water Declaration shares many concepts of the earlier Kyoto Declaration, but tailors the provisions to local circumstances. In particular, the Simpcw Declaration builds on the UN Declaration on the Rights of Indigenous Peoples, to specify how the concept of free, prior and informed consent should be applied to negotiations involving the Simpcw Nation (Reading et al 2011, pp 101-108). For example, the declaration specifies that the consultative process must include the involvement of spiritual authorities as well as secular (governmental) authorities. Also, the Declaration makes explicit that if the consultative process does not result in agreement to whatever development project is being proposed (e.g., a dam or mine), that there must be "Respect for the right to say no" (Ibid, p. 106).

In the Kimberley region of Western Australia, Indigenous people (referred to as Traditional Owners) agreed on common principles to protect the Fitzroy River catchment from mining and oil exploration. The Fitzroy River Declaration was proclaimed in November 2016, to serve as a basis for any future management decisions about the river and its catchment (Lim et al 2017). The Declaration states that, "The Fitzroy River is a living ancestral being and has a right to life. It must be protected for current and future generations, and managed jointly by the Traditional Owners of the river." The Owners agree to work together to (among other things):

- Reach a joint position on fracking in the Fitzroy catchment;
- Create a buffer zone for no mining, oil, gas, irrigation and dams in the Fitzroy catchment;
- Develop and agree a Management Plan for the entire Fitzroy Catchment, based on traditional and environmental values;
- Develop a Fitzroy River Management Body for the Fitzroy Catchment, founded on cultural governance;
- Complement these with a joint Indigenous Protected Area over the Fitzroy River;

Ethics as a Bridge Across Diverse Water Cultures

Strategies of "water diplomacy" (Islam and Susskind 2013), which presume a negotiation process among roughly equal partners, are less useful when one side holds the power to force a settlement. And even if the powerful party has the best of intentions, the cultural values and ethics implicit in the language and categories (e.g. the concept of water "resources") skews the frame towards the worldview of the politically dominant party. In the case of the Whanganui River in New Zealand, Maori attorneys argued successfully that the river should be accorded legal standing as a person (O'Donnell and Talbot-Jones, 2018). This legal fiction has a basis in both the Western legal framework and in Maori customary law; both legal systems recognize that "personhood" can be applied to things other than human people. Under the agreement, two guardians, one from the Crown and one from a Whanganui River Indigenous community (*iwi*) have been assigned the role of protecting the river. A whole river strategy, in collaboration with iwi, local government, and commercial and recreational users is being formulated. The Whanganui River is the first river in the world to be recognized as a legal entity, and to my knowledge, still the only case that has withstood challenges at the highest level of national legal authority.[4]

[4] Personhood status was conferred on both the Yamuna and Ganga Rivers by state courts in India but were later overturned by the Indian High Court.

Legal Pluralism

The legal term for the art of seeing the same things from two very different perspectives is "legal pluralism." If we are serious about embracing cultural diversity then embracing legal pluralism offers a way of operationalizing that diversity. The Western legal system and the water ethics that underlie the laws and – the word fits: customs – of that legal system are not going to disappear very soon. In order to retain their cultural integrity, Indigenous groups will need to find ways of fitting their customary water behavior and ethics, within that Western reality. Legal pluralism offers a ready-made label that can help legitimize indigenous water ethics to non-Indigenous stakeholders (Meinzen-Dick and Nkonya 2007). Granting legal personhood to rivers is a way of using Western legal concepts to Indigenous advantage and is promising in this regard, even though the Whanganui remains unique.

Relational Ethics

The term, "All our relations" which is used by Native North American as well as other Indigenous Peoples, has a real significance. The term connotes a merging of human kinship relations and kinship with the natural world, acknowledging ethical responsibilities implicit in those relationships. In her study of cooperative river planning for the Hurunui River in New Zealand, Thomas (2015, p. 984) notes that for the Maori, "ethics of respect...extend to both human and nonhuman, where both care and use are equally central to livelihoods and identity." Maori acknowledge both economic concerns of people and concerns for the river, attempting "to reach a balance between responsibility for the Hurunui River, and demands to produce economic growth" (Ibid, p. 984). A key value is placed on "a more reciprocal relationship with the Hurunui River and [Maori's] rights, interests, uses and cultural values" (Ibid, p. 984). A practical outgrowth of this reciprocity value was to include in the river plan the restoration of the lagoons and delta at the mouth of the river as a way to compensate the river for increased upstream water diversions which the plan was also recommending. Thomas recounts that non-Indigenous members of the river planning group gained a new respect for the stewardship ethics of the Maori members. Thomas further observes that when non-Indigenous members invoke similar ethics about stewardship and giving back to the river, they lacked the same legitimacy. Citing McGregor (2004, p. 602) this differential legitimacy can be explained as due to "the lack of an established alternative vocabulary" or in the words of Thomas (2015, p. 985), "The absence of a coherent non-Maori narrative based on spiritual connections that would challenge the limitations of Eurocentric binaries."

Conclusions: Water Ethics and Co-Management

The Hurunui River planning committee discussed above is an example of cross-cultural stakeholder co-management built on a foundation of shared values and ethics about the river itself (relational ethics) and ethics about the appropriate uses of water (e.g., for irrigation). Through the planning committee[5] both Maori and non-Maori representatives shared their value perspectives about the river. The common language for describing their value priorities was, essentially, the language of ethics. The Maori representatives in this case served as teachers to the non-Maori, explaining how the Maori regarded the river, why they felt a

[5] This refers to the Hurunui Waiau Zone Committee (HWZC) which is part of a regional initiative, the Canterbury Water Management Strategy (Thomas 2015, p. 979)

kinship with the river, and a responsibility to act on behalf of the river, etc. When the Maori explained their ethics, the non-Maori could see a correspondence with their own values as well, but that breakthrough required some education. More precisely, it required the non-Maori to "de-learn" their own colonial assumptions about the nature of rivers and how rivers should be treated. Only after this informal education process could constructive co-management of the river, or even the constructive formulation of a river plan, proceed.

What are the implications for bridging diverse water cultures, and establishing effective co-management strategies for diverse stakeholders? A common language of water ethics needs to be established as a prerequisite to anything else, but to even talk in ethical terms about water requires an awareness about values relevant to water. In my 2013 book, *Water Ethics: A Values Approach to Solving the Water Crisis* (Groenfeldt 2013)[6] I distinguish five categories of water ethics: Environmental, Economic, Social, Cultural, and Governance. Each category contains a small world of values about water; for example, social values include social and gender equity, safety (clean water), the right to affordable water, the right to enjoy healthy rivers, etc.. Governance values include participatory planning, transparency and accountability, and democratic decision processes, as well as values about professional competence, responsible use of technologies, etc. It is probably not necessary for members of a watershed planning committee to learn every aspect of water ethics, but they do need to at least recognize that the category of ethics can be applied to water.

The most important dimension of Indigenous water knowledge -- the ethical norm of being in relationship to the water and to all the people, plants and animals that also depend on water -- has been largely overlooked. By carving out a category of "water ethics" in our collective ontologies, we will have a place for processing the wisdom that Indigenous Peoples, both past and present, can teach us. Through learning about Indigenous understandings of water, we will inevitably gain an appreciation and a sense of respect for their way of seeing the world. Once we start to operationalize our "duty to learn" about Indigenous water ontologies, we will find useful applications of the knowledge we gain. The challenges of our changing climate and the crisis of sustaining our water resources will provide many practical opportunities.

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[6] A second revised edition of this book was published in 2019.

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