

Education in an Era of Climate Change: Conversing with Ten Thousand Voices¹

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Before the triumph of modernity – sealed in Western Europe of the seventeenth century by the advent of the scientific revolution – people lived in constant interaction with a host of beings, powers, spirits who tricked us, protected us, quarreled with us, guided us, taught us, punished us, and conversed with us. We were wealthy in our human and other-than-human communities. (Apffel-Marglin, 2011)

The only kinds of knowledge that are taken seriously by the Euro-American academy are those that conform to its own particular formats of writing, citation, and history. (Jazeel & McFarlane, 2007)

prologue

—please note that I have written this article in a narrative format without following punctuation or other conventional grammatical syntactic orthographic and linguistic standards of western academic prose this is how I reflect the orality of my St'át'imc culture and how I think feel speak write as an Indigenous scholar I have written the majority of my academic work using this format

I consider these questions with my partner and research collaborator pat o'riley with my St'át'imc relatives and research partners from the interior plateau of British Columbia (BC) Canada with my ancestors and those-to-come we push our canoe into the muddied effluence of the progress narrative of schooling and its associated modern postmodern and other post-xxx curriculum theorizing we enter the curriculum conversation back eddies and whitewater at the outside bend in the river of mindbodyheartspirit traverse the Cartesian-Newtonian turbulence that privileges reason we sing laugh cry paddle paddle paddle whoooosh



what are the tasks of curriculum scholars for the 21st century? this was the theme posed for the 5th IAACS (International Association for the Advancement of Curriculum Studies) Triennial Conference held in Ottawa Canada in May 2015 I pause and ask what are our tasks and responsibilities as curriculum scholars in addressing the ecological crisis facing life on the planet? is there any possibility for post-imperialist post-development post-progress education in the prevailing schooling systems that are grounded in Euro-centric anthropocentric neoliberal knowledge systems? how might traditional ecological knowings of Indigenous Peoples worldwide contribute to holistic education that values human non-human and more-than-human intelligences and agencies?

there is a growing realization that addressing the global ecological crisis requires widening the circle of knowledges by bringing the rational knowledge of scientific empiricism together with other knowledge systems including Indigenous traditional ecological knowledges (Apffel-Marglin, 2011) Wade Davis (2009) discusses the critical importance of the vast archive of Indigenous wisdom in addressing current ecological challenges while the Intergovernmental Panel on Climate Change (IPCC, 2104) recognizes the value of Indigenous knowledges for the mitigation of climate meanwhile Indigenous Peoples struggle to have their rights and lands change protected to regenerate their traditional ecological knowledges that have been disappearing since the introduction of compulsory Eurocentric schooling and to have their voices heard (WIPC, 2014) Indigenous knowledges are sophisticated complex and based on millennia of observation and lived experience they are holistic landbased ceremonial and ritualistic practices that bring together the interdependencies of human non-human and more-than-human (spiritual) intelligences and agencies

for two decades we have been conducting research with the St'át'imc in the regeneration of traditional languages knowledges and practices while participating in the Ucwalmicwts language class in 1996 our Elders spoke of the urgency of recording our ancestral knowledges and practices renewing them for the next generations and sharing them with the larger society thereby contributing to the narratives needed for what Gerald Vizenor (2008) refers to as "survivance" - survival and continuance of the diversity of lifeforms on Earth we refer to our research as *tcwusems ti* ucwalmicwas ti cwil'enas to amas gylgyls nt'ak'men (the People looking forward working together on the return of our strong healthy culture) regeneration is cyclic renewal making pastpresentfuture affiliations with the diversity of human and moreas Apffel-Marglin (2011) writes "[t]here are continuities and than-human entitities some perennial facets ... but these continuities are incessantly remade, in flux, regenerated" (p. 40)

for the next phase of the research we have joined hands with the Kichwa-Lamista of the High Amazon of Peru we met the Kichwa-Lamista communities in 2011 through a colleague and friend who has worked with the communities for two decades the Kichwa-Lamista elders invited us to bring our university students to the High Amazon so that they might share with the students how climate change and resource extraction are affecting their way of life and for the students to learn about their cosmology and the thousands of years of land-based Kichwa-Lamista cultural knowings and practices so that they might bring these teachings back to their universities and communities we have since offered two immersion learning summer institutes with the Kichwa-Lamista communities and are planning a third

the Kichwa-Lamista expressed an interest in working in solidarity with the St'át'imc to explore strategies for regenerating their respective traditional ecological knowledges including ceremonial ritual practices that evoke human non-human and more-than-human interdependences entanglements of humans and other lifeforms and lifeways for walking lightly on the earth and re-learning together how to "dance a new world into existence" (Simpson, 2012, p. 149) the focus of the research project is to examine the ongoing regeneration of St'át'imc and Kichwa-Lamista human and more-than-human (spiritual) interdependencies that inform and enhance St'át'imc and Kichwa-Lamista cultural and ecological sustainability the communities hope to contribute to a widening knowledge-base of ecological sustainability by sharing cosmologies epistemologies and practices with each other as well as other Indigenous communities the academy and the general public



the St'át'imc and Kichwa-Lamista have had very different historical encounters with colonization and global economics for millennia the former have relied on fishing hunting and gathering the latter have been agriculture-based each has different cosmologies and traditional ecological knowings each is situated in different histories geographies languages and socio-political contexts as they work to regain their cultural economic and ecological sustainability each community faces different struggles in regenerating their language ancestral knowings and practices while protecting their lands from expropriation and resource extraction that have wreaked havoc with their lives ravaged their lands and polluted their waters meanwhile Indigenous Peoples struggle to protect their rights and lands ironically and tragically Indigenous Peoples are the most affected by climate change with minimal participation in the industrial activity that is causing it "greenwashing" and "faux-conservation" efforts by corporations governments and NGOs deny Indigenous Peoples access to their lands (Dickens, 2015) each of the Indigenous communities has its own complex interrelationships with the more-than-human including syncretism of ritual practices and settler religions

although there is an official policy in Peru of bilingual bicultural education at the primary education levels there is a lack of implementation there are few 'qualified' teachers from the communities who know the culture and speak Quechua (Cachique, what is offered as bilingual and bicultural education is 2015; Sangama, 2015) predominantly Western education in the Spanish language an Elder periodically shares stories in Quechua with the children in school education for the St'át'imc is similar to that of the Kichwa-Lamista there is The First Peoples principles of learning by the Ministry of Education (n.d.) however the curriculum is Western-centric with St'át'imc there are few Ucwalmicwts speakers left in the St'át'imc knowledges as add-ons the Kichwa-Lamista say that some of the difficulties regenerating communities Indigenous knowings languages and practices come from the communities themselves because they see assimilation as the only way for their children to succeed and have economic opportunities (Cueto, Guerrero, León, Seguin & Muñoz, 2009)

as we paddle pat and I speak of the myriad voices needed for nonanthropocentric learning and teaching including non-human and more-than-human voices pat nearly capsizes the canoe as she gestures to feminist posthumanist and poststructural theorists sitting on the shore with their deconstructed laptops

I recover with a sculling stroke wave to quantum mechanics trying to repair their fishfinder we strain to hear the voices of the powers and spirits and beings of our ancestors and those to come who are with us on this journey the sun is setting as we pull our canoe up to the shore near Lima set up our camp light a fire and make tea in anticipation of a multi-day trek across the desert and the Andes to the Kichwa-Lamista communities after arriving in the High Amazon and getting settled in our tambo we put on our sunhats cover ourselves with mosquito repellant and join in the preparation of the evening meal made over a wood fire – corn beans rice fried bananas and chicha that the women have made especially for our visit

we look out at the nearby Cordillera Escalera range knowing they have been demarcated for resource extraction agreements between the Peruvian government and Canadian mining companies that threaten to destroy the way of life for the Kichwa-Lamista and the habitat for the animals who depend on and the forests and rivers back homethe St'át'imc territories have been carved into tiny parcels by generations of settler governments and decimated by logging mining and hydro generation projects



sounds of children's laughter coming from the soccer field we talk together about the current historical-geological epoch the "anthropocene" (Whitehead, 2014) marked by anthropogenic pollution mass extinction and climate change the apus [community leaders] raise concerns about the disruption in their communities created not only by national economic policies and international mining and oil and gas extraction on their lands but also by the mandated colonial education they worry about their children's disengagement from the land schooling teaches them that those who grow food on the *chacras* are uneducated and that the wisdom of their parents grandparents and ancestors is immaterial to their 'success' in the global economy that their cultural knowings are of little or no value outside of their local communities

I share how the national (Peru) and provincial (BC) curricula are increasingly influenced by lobbyists to benefit the 0.1% how institutionalized education is primarily for creating job-ready students to fit into the production line perpetuating the unequal valuing of labour and being/becoming in BC the Ministry of Education has teamed up with the Ministry of Jobs, Tourism and Skills Training to create B.C's Skills for jobs blueprint: Re-engineering education and training (WorkBC, 2014) to train and funnel high school students into jobs in the LNG (Liquefied Natural Gas) industry rural and Indigenous students in northern BC communities are particularly targeted by this along similar lines in his historical analysis of Peru's education system curriculum Myers (2014) points out that foreign corporations have had a heavy influence in Peru's curriculum development targeting rural and Indigenous students this is made more complex with the large population of Quechua and Aymara speakers in rural communities the dearth of teachers fluent in local Indigenous languages (UNESCO, 2010) under-funding of the IBE (intercultural bilingual education) program (Garcia, 2010) and mistrust by the Indigenous communities of the IBE agenda (Garcia, 2005)

we watch the film *Schooling the world: The white man's last burden* (Black, 2010) and see across the screen the words "If you wanted to change a culture in a generation, how would you do it? You would change the way it educates its children" the film "questions our very definitions of wealth and poverty – and of knowledge and ignorance – as it uncovers the role of schools and schooling in the destruction of traditional sustainable agricultural and ecological knowledge, in the breakup of extended families and communities, and in the devaluation of elders and ancient spiritual traditions" (STW, 2010, p. 5)

I share the story of a recent PhD oral defense in Ethiopia for which I was the external examiner the doctoral candidate and professors were Ethiopian but most of the theory was Western the references too yet we were located in the bosom of humankind's earliest ancestors according to Western science across the street is a 3.2 million-year old skeleton of our elder sister nicknamed Lucy and her much older sisters millennia of millenia of knowings of the human beings of that place dismissed as not worthy of attention in favour of the near-sighted vision of Western knowledge

Kichwa-Lamista community members wonder if prevailing curriculum discourses can be transformed considering the huge historical asymmetry over 500 hundred years of Western "epistemic hegemony" (Mignolo, 2014) the assumption that non-Western land-based knowledges are primitive and inferior while Western education is advanced and superior is a notion brokered by reason and analysis Santos (2014) referring specifically to the Global South writes of "epistemicide" – epistemological blindness that dismisses or silences Indigenous voices drowning them out to the Euro-American articulations of what counts as knowledge devaluing Indigenous knowledges is cognitive injustice that underpins social and ecological



injustice de Sousa (2012) writes that for all the academic talk of multi-cultural and inter-cultural understandings it is Indigenous and Other/ed peoples who have had to become multi-cultural and inter-cultural while mainstream culture carries on its monocultural curriculum and pedagogy as the *campesinos* in the PRATEC (*Proyecto Andino de Tecnologias Campesinas*) film say Andean children need to know both Andean and Western knowledges (Salas, 2010)

we discuss how "the World Bank has probably been the most important contributor around the globe in education over the past 50 years...rooted in the postwar reconstruction (and development) of the capitalist economies according to the dominant Western/Eurocentric paradigms of scientific knowledge" (de Siqueira, 2012, p. 73) the guiding assumptions of the World Bank include dominance over nature endless linear growth and belief in Western educational discourses as education 'for all'

we talk of how recent strata of colonialism manifest as the internationalization of Western education the myth that this will lift everyone up has already been refuted climate change is telling us that the 'progress narrative' is in its terminal phase (Hedges, 2014) and that there needs to be a broader deeper intellectual conversation current curriculum theorizing including at the IAACS Ottawa conference has included the reemerging conversation on "cosmopolitanism" that dates back to fourth century BC (Appiah, 2006) Braidotti (2012) has given much critical thought to the discourse on cosmopolitanism and suggests that there needs to be a de-centring of anthropocentrism and a "recognition of trans-species awareness of 'our' being in this together, that is to say environmentally-based, -embodied and -embedded and in symbiosis with each other" (p. 20) Santos (2007) suggests that cosmopolitanism needs to be bottom-up emanating from the people of the land rather than the academy taking this further in his discussion on itinerant curriculum theory Paraskeva (2011) raises concerns that the curriculum internationalization project has been largely articulated in Western academic Anwaruddin (2013) drawing on the work of Santos and Paraskeva institutions troubles the English linguistic imperialism and the geopolitics of academic writing as well as Western academic capitalism and commodification of knowledge in education's internationalization project

when we are presenters at conferences we preface our conference presentations with "I wish to acknowledge the xxxx Indigenous Peoples on whose traditional occupied unceded territory we are speaking" but how do I/we do this in practice? Black (2014) suggests that we need to "[e]xplore the thousand other ways of learning that still exist all over the planet" "[e]very ecosystem in the world at one time had a people who knew it with the knowledge that only comes with thousands of years of living in place It's a human intelligence honed over millennia, through unimaginably vast numbers of individual observations, experiments, reflections, intuitions, refinements of art and experience and communication" (Black, 2012)

there is a growing call from academics citizens around the world Indigenous Peoples and international civil society and ecojustice organizations (e.g. Klein, 2014; IPCC, 2014; Shiva, 2008; UNESCO, n.d; WCIP, 2014) for compelling new narratives to reshape the progress narrative of modernity that privileges mind over body heart and spirit as well as human over non-human and more-than-human there is increasing awareness that dismissing Indigenous knowledges and practices has created an imbalance a vacuum that impacts the ethnosphere and the biosphere

with the loss of Indigenous knowledges comes the loss of "ten thousand different voices" (Davis, 2009) a diversity of ecological knowledges and practices for dealing with the challenges facing life on (and with) earth Indigenous traditional



ecological knowledges are dynamic and holistic often involving ceremony and ritual practices that bring together human non-human and more-than-human intelligences and agencies mutual reciprocating conversations with the environment de la Cadena (2010) writes that more-than-human entities are viewed as contentious in modernist thinking because their presence disrupts the nature/culture separation that is a key pillar of post-Enlightenment thinking acting and being

solutions for dealing with climate change by governments and industry have been largely addressed by creating technological fixes however the "optimism in technology" often ignores "the high consumption levels in so-called developed countries or the epistemological basis for the global architecture of education" (Breidlid, 2013) Goleman (2009) suggests that what is needed is to fix our "ecological intelligence" by becoming whole again reconnecting mindbodyheartspirit proactive proposals have been put forward such as no-growth economies (Victor, 2008) economies that live within the Earth's budget of energy and resources (Heinberg, 2010) walking lightly carefully and gracefully on the Earth (McKibben, 2010) there has been a growing "economics of localization" movement a shift from global economics to more human economies of scale that emulate how Indigenous Peoples have lived since time immemorial (de Souza, 2012; Norberg-Hodge, 2011; Schumacher, 2011) Indigenous Peoples have long known the value of traditional ecological knowledges for environmental stewardship (McGregor, 2004) environmental justice (Agyeman, Cole, Haluza de Lay & O'Riley, 2009) and biodiversity (LaDuke, 2008)

an emerging convergence is taking place between ecological and social justice and Indigenous movements worldwide concerned over the loss of diversity of the they are multistoried "minorizing of the majority world's wisdom and biodiversity discourse" (Deleuze & Guattari, 1987) pushing against the "abyssal thinking" (Santos, 2007) of the thinking-as-knowing paradigm in which 'Other/ed' cosmologies and knowledge systems are dismissed they deterritorialize the missing terrain people and signs "The geography and the people are not missing, except in the majority language" (O'Riley, 2003, p. 31) this resonates with Grillo's (1998) notion of "equivalency of epistemologies" that recognizes the role of non-Western non-human and more-than human intelligences and agencies in maintaining ecological harmony and balance it is important to note that advancing Indigenous ecological wisdom and practices as "equivalent" is not about transplanting Indigenous knowledge systems into Western systems rather it is companion planting cultivars with wild types regenerating more complex possibilities for the global ecological sustainability conversation that includes more-than-human intelligences and agencies

for the St'át'imc and Kichwa-Lamista the anthropocentric worldview is not valid because we are members of one Earth community as Kumar (2013) says "We need to take care of the soul, as we take care of the soil. But we can only take care of the soul when we slow down. Take time for ourselves. Meditate on the fact that you represent the totality of the universe. There is nothing in the universe that is not in you, and there is nothing in you that is not in the universe. The universe is the macrocosm and you are the microcosm. You are earth, air, fire, water, imagination, creativity, consciousness, time and space – you have all this in your soul, in your genes and in your cells. You are billions of years old".

we turn our discussion to the re-awakening of human spirituality and ecological interdependencies in mainstream literature and the responses to the externalized values of materiality and consumerism that drown out intuition and connections to the land the sacred and more-than-human worlds ritual practice has been common to humanity



throughout history in Buddhism Christianity Hinduism Islam Judaism as well as Druidism shamanism songlines we talk about different articulations of ecologyspirituality interfaces such as those enacted through aesthetics sensuality religion spiritual ecology ecofeminism posthuman discourses and human-animal bonds

I share how in the early 20th century the groundwork for quantum physics thinking led to radical revisioning of classical notions of physics and other sciences Niels Bohr's principle of "complementarity" (1937/1958) put forward the revolutionary theory that a quantum of energy cannot be separated from the apparatus and system in other words all of life is connected for evolutionary biologist Richard Lewontin (1993) organism and environment create each other pat shares how Karen Barad's "agential realism" (2003, 2007) grounded in Bohr's work as well as Haraway's "posthumanist performativity" (1991) acknowledges the interdependent entanglements of mindbody/heartspirit knowing and being/becoming without borders

we discuss the next steps in our exploration of "non-anthropocentric collective actions ... bring[ing] about not just a common world, but a livable common world" for all (Apffel-Marglin, 2011, p. 162) our research teams comprised of community research assistants and university research assistants have started to document the interactive Kichwa-Lamista stories and film the peanut planting ceremony that is an enactment of performed intra-actions between human and more-than-humans weaving each other into continuous regeneration of the world

the ceremonies and rituals being documented are in the context of their everyday activities such as living with the forests and rivers in good ways (St'át'imc) and re-creating *terra preta* (Amazonian dark earth) to replenish degraded agricultural lands (Kichwa-Lamista) an ancient technology that helped to create large parts of the Amazon rainforest (Apffel-Marglin, 2011; Mann, 2007) interested youth work in apprenticeship role with elders *apus* and other knowledge keepers encouraging an intergenerational flow of knowledge that supports self-esteem self-empowerment and cultural sustainability within the research team

we have much to learn from our Kichwa-Lamista partners including about *buen viver* (good living) that is rooted in their worldview and centred on community cultural sustainability and ecological sustainability *buen vivir* resonates with what the St'at'imc refer to as *n't'ákmen buen vivir* has become the basis of the revised constitutions of Ecuador and Bolivia it offers constructive critique of Western development theory and alternatives emerging from Indigenous traditions in particular the Aymara Quechua and Kichwa "The richness of the term is difficult to translate into English. It includes the classical ideas of quality of life, but with the specific idea that well-being is only possible within a community. Furthermore, in most approaches the community concept is understood in an expanded sense, to include Nature." (Gudynas, 2011, p. 441)

my partner and I stuff our laptops and gortex raingear into our backpacks unfold our map as we anticipate possible chartings for the next steps on our journey we see challenges and incredible opportunities and wonder if it is possible to re-learn the sounds and rhythms of our bodies our spirits within the "cognitive Manifest Destiny" of Eurocentric schooling "that assumes that one way of thinking, of learning, of being in the world is destined to overwhelm and replace all others?" (Black, 2014) moving forward sideways cross- and extra-territorially would mean genuine curriculum provocation requiring a rhizomatic/radical reshaping to include Indigenous knowledges beyond today's prevalent tokenism having mindbodyheartspirit as integral to creating culturally inclusive and meaningful curriculum theorizing and educational practices might provoke the uni-versity toward becoming pluri-versities and multi-versities



Noel Gough (2012) asks "What would educational policy, curriculum innovation and global education look like if we assumed that 'the people' meant 'everybody/ humanity'?" (p. 182) we add that regenerating collective curriculum visions would need to include "not merely those 'visible' because their differences are seen as minor in relation to the dominant centre" (de Souza, 2012, p. 81) but also non-human and more-than-human entities intelligences and agencies "theory isn't just for academics; it's for everyone Theory...is generated from the ground up and its power stems from its living resonance with individuals and collectives" (Simpson, 2014, p. 7)

at this time of climate change and intensifying global social and ecological inequities a conversation of ten thousand voices is already underway across the Global South and Global North "giant whispers" (Reinsborough, 2010) working to "slow down reason" (Stengers, 2005) in the "performance of survivance" (Vizenor, 2008) and re-imagining a more equitable compassionate just and ecologically sustainable future for all working multi-directionally with a diversity of worlds and views including the sentient more-than-human education might be able to say something very different

Notes

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¹ A version of this paper was approved and presented at the 5th IAACS (International Association for the Advancement of Curriculum Studies) Triennial Conference held in Ottawa, Canada, in May 2015.

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Submitted: February, 17th, 2016

Approved: June, 15th, 2016

