

Coyote and Raven put the ‘Digital’ in Technology – Hands Up and Down to Earth

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Education...makes a straight-cut ditch of a free, meandering brook.

(Henry David Thoreau)

Real freedom will come only when we free ourselves of the domination of Western education, Western culture, and the Western way of living. (Mahatma Gandhi)

The colonists strained to tame the wild, the tribes and the environment. Now high technologies overbear postcolonial promises and transvaluations; the tragic mode is in ruin. (Gerald Vizenor)

Raven and Coyote are not robbing a bank or playing cowboys and ‘Indians’ or bad guys and good guys – these ubiquitous tricksters³ are inviting the reader to engage in a virtual/actual retelling of the contemporary ‘digital native’ storylines being offered in mainstream education – the wingéd one and the fourlegged ask the human beings to consider renarrativizing the current privileging of digital technology as the predominant technology storyline in education and western education as the predominant educational storyline of knowing/doing/being/becoming

this conversation is an invocation to “trickster discourse”³ with the hope of encouraging “narrative chance, comic holotropes and dissident narratives” (Vizenor, 1993, p. 10) as potentialities for restorying and remapping technology discourses in education as Vizenor writes “Trickster narratives are ... an ironic survivance; trickster metaphors are contradictions not presentations of culture.” (p. 174) – Coyote and Raven believe that sharing the tech time/space in education with Indigenous and other other/ed technological knowledges and practices might support a more robust and complex technological literacy in education needed in our rapidly changing world



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Ama⁷ sqit greetings I am Raven called *corvus corax* by ornithologists my form is avian but I am a member of the bird people transformers shapeshifters tricksters transformers from the natural world were our earliest teachers on my human being side I am from the grizzly bear clan my community is *Xa'xtsa* also called Douglas First Nation at the head of Harrison Lake located in southwestern British Columbia Canada in the high snow-capped coastal mountains I am related to most of the original peoples of the Lower Mainland each of whom is a miracle all of whom are survivors of genocidal epidemics residential schools and ministry of education curriculum visions my ancestors were also Welsh from Carmarthenshire and Scots from Banffshire

se:kon I am Coyote otherwise designated *canis latrans* coyotes like Indigenous peoples are survivors I am of Donegal (Irish) Mohawk and French heritage from Québec Canada married into the *Stl'atl'imx* community of *Xa'xtsa* as we enter this conversation at this bend in the river of words body spirit experience we push our canoe into the current enter it with our ancestors and those to come we hope that a few of you might join the conversation and help to paddle

why are you taking my pulse Raven?

I'm counting your heartbeats using digital technology index and middle fingers no thumbs no bar spacing just touch ing

in front of all these people hmm systolic or diastolic are you sure you're not looking for vital signs or maybe it's some kind of truth detection test digital polygraph aren't you supposed to look at my irises too measure my temperature basal metabolic rate

yes using two fingers low tech slow tech no tech It st nt It st nt that's my motto

It st nt Aretha Franklin would like that nice rhythm Raven I know you have an iphone in your pocket filled with frivvy apps and when you work out you wear a heart-rate monitor watch and chest strap you have a sphygmo-manometer to check your blood pressure a pedometer a digital camera and even a portable alternating gradient synchro-cyclotron particle accelerator in the basement

those are just for backup I prefer technologies that do not have a big ecological or ethical footprint Raven your prescription glasses and your clothes are made using so-called 'high' tech machinery and processes so is your toothpaste your skin cream shampoo deodorant hairbrush nail clippers food your home is a techno-palace the bus you took here your bicycle your car were all made using high tech tools and machinery all requiring hi tech lubrication gasoline oil fractionated distilled refined purified even your low tech is high tech if you factor in all of the complexities the machines that make the machines that make the tools and technologies

Coyote I make a conscious effort to stay away from acquiring things that require batteries I use a handcrank flashlight and radio and most times I use a hand fan rather than the air conditioner

well Raven the things that produce and transport your tech-toys or support them require the expenditure of hydro energy atomic energy coal-burning energy transportation energy communication energy that's not cool which is why it's hot

I can't just quit everything cold turkey or whatever the term is for vegans the trouble is we have so many modern conveniences that are not convenient for the rest of the world their manufacture the processes the tools the infrastructure are hazardous to the health and wellbeing and survival of tens of thousands of species including billions of human beings

your tech at least from your talk is to stay off the grid but how offgrid can you be when everything you own is suffused with power and fuel consumption footprints you have internalized the grid you are the grid the petroleum coal hydro nuclear footprints are subductions of the consumerist tectonic plate which causes untold transverse faults in everything from good intentions and philosophy to shade-grown fair-trade coffee cocoa and green tea green doesn't mean green there's a spectrum disorder operating or wearing of tinted spectacles

well Coyote to put some positives into the negativity simplex I cancelled my data plan now it's strictly wifi no roaming charges hold back the dam and resuscitate those raccoons with my environmentally sustainable technologies I am not so much off the grid as not on it as a lifeline

I'm not sure what you mean by 'environmentally sustainable' are you saying you are giving back more to the earth than you take retiring to offgrid does not mean you are not dragging with you a huge ecological and ethical footprint handprint pawprint

Coyote the tsunami of climate change and its effects are happening especially to the those in the margins mainly Indigenous Peoples who are being displaced from their lands for resource extraction the 1% take up the whole of centre if we don't act soon we'll all be swept away we saw it in southwestern British Columbia at the end of the last ice age the old ones up in plateau country talk about using the retreating glaciers as refrigerators but you had to keep your eye on those craveny canids raiding the icebox

hah Raven more like the ravening ravens my friend Vicki Tauli-Corpuz (2012) an Indigenous Filipino woman says you can't separate Indigenous rights and culture from climate change as the Intergovernmental Panel on Climate Change (IPCC) seems to we are our technologies our pedagogies and literacies they are not simply byproducts of our activities we are our pollution our waste our wanton disregard we are digging the mass graves of tens of thousands of species every year with innovations that are fueling out of



control capitalism-consumerism because we are addicted to buying stuff we don't need and probably don't want

but Coyote we desire things because we *lack* as my old friend Jacques Lacan (2007) used to say the stuff is filler because we are empty we have a lack of *being* if you're lonely or sad or suffering from anomie you buy you consume creating r-value between you and the environment and your responsibilities and original instructions

Raven what you might be missing out on is *becoming* as Gilles Deleuze & Félix Guattari (1972) say they have a different take on desire than Lacan they see desire as a productive force in the real like Indigenous ways of knowing engaging the complexities the interrelationalities and interconnectivities rather than collecting the empties and refunding them at the conceptual space depot so you can buy more of the same

[Coyote sings] "bye bye love bye bye happiness hello loneliness I think I'm-a gonna cry-y"⁴

loss of love becomes emptiness or obsession as love disguised as loneliness and as a simulacrum that fuels the 'entertainment' industry happy days are here again

with Maurice Blanchot and the Fonz on slide trombone Marguerite Duras on standup bass Sartre on percussion and Kierkegaard Dostoyevsky and Nietzsche on lead guitar and vocals get yer yayas out get yer techno-gizmos here come one come all they'll satisfy your desire fill up the *terra nullius* inside the *corpus vacuus*

[Raven holds up a piece of rock] microcrystalline chert I found this in the parking lot the Neanderthals fashioned an entire living in Europe for 600 thousand years lithic reductionism depending on your strike angle it fractures into a hertzian cone cleavage planes conchoidal fractures you can make tools or weapons start a fire skin an auroch sling down a flyer scale a fish the modern toolkit for 600 thousand years included flint jasper chalcedony agate opal siliceous sinter obsidian quartzite onyx firestone silica stone and flint stone technologies past can be technologies present and future

Raven did you hear Vicki Tauli-Corpuz (2012) talk about the importance of including Indigenous knowledges within the REDD (Reducing Emissions from Deforestation and Forest Degradation) frameworks Indigenous Peoples are saying 'no' to corporations that are buying/selling carbon credits on tribal territories so that they can keep on polluting for example the *Munduruku* tribe of the Brazilian rainforest just cancelled their deal with an Irish company (Teixeira, 2012)

yes Coyote not quite the 'red' power we were talking about in Indian country back in the 60s and 70s interesting how the IPCC organized the workshop fitted out with and made using every techno-device known to personkind anyway she said that "dealing with climate change means changing the current economic system that was created to

dominate and extract resources from nature" Vicki talked about the implications the implicatedness of education in the global economic system by teaching students how to better dominate nature rather than living harmoniously with/as nature

I was talking to Stuart Pimm a conservation biologist at Duke University

good to hear I was a bit worried about becoming extinct or at least endangered

Pimm talked about each American putting "seven tons of carbon into the atmosphere per year through fossil fuel consumption" (Osterman, 2011) he has this idea of selling "indulgences to carbon sinners" offsetting their carbon sin to help his NGO buy land to reforest the more carbon sinning the more money his NGO gets he talked about Norway giving Brazil a hundred times more money per capita to slow the deforestation rate than the USA has promised but not delivered

it's all green Coyote as long as accountants with spraypaint are in charge

Raven how does this translate into technology talk in education

Pimm doesn't know what the appropriate toolkit might be for his work he talks about conservation being a "mission-driven science"

just what we need more missionaries

Coyote if we honour all of creation including the natural world the three sisters eco-pedagogy eco-literacy and eco-technology can be our teachers ah here comes Frédérique Apffel-Marglin with her llama and her market wares *olà Frédérica que tal mi hermana* you were telling us before breakfast of signs and how some in the Renaissance were church-authorized and some were not

"The wise women and men in the countryside had always existed but only then did they become the abject other and the persecuted witches and sorcerers." (Apffel-Marglin, 2012, p. 30)

you were commenting too on *hylozoism* tell us more

"The category of *hylozoism* gathers together this motley group of Renaissance movements, occult philosophies, and peasant practices. What they all have in common is a non-dualist view that matter could move itself, that humans were part of nature and part of the cosmos, and that God pervaded the material world as well as the souls of humans." (p. 31)

ah the glorious Renaissance Shakespeare Marlowe Kydd Bacon drama as life as drama science becoming the new religion reason taking over from mystical compassion

"During the course of the seventeenth century, the view of a substantivized nature, agency-less, mechanical, made up of separate entities that could not move themselves, and totally estranged from the world of humans, successfully displaced the hylozoist view." (p. 33)



Frédérique this brings me back to the role western education plays in continuing this way of thinking even more so with the huge emphasis and expenditures on virtual learning removing us from each other from sensory connections with one another and the land and other-than-and-more-than-humans entities

Raven Sherry Turkle (2011) the founder and director of the MIT Initiative on Technology and one of the best known proponents of virtual learning has just published a book entitled *Alone together: Why We Expect More from Technology and Less from Each Other* it is based on 15 years of research on digital learning she does a surprising turnaround from her earlier stances in *The Second Self* and *Life in the Screen* Turkle is concerned about what we are losing of our ourselves especially children the loss of privacy and community emotional dislocation

yes Coyote education has been spending huge amounts of money so that students become “digital natives” but there is little “native” about cyberspace do you notice the more we become “digital natives” the busier we become our “busyness serves as a kind of existential reassurance, a hedge against emptiness [Lacan’s *lack*]; obviously your life cannot possibly be silly or trivial or meaningless if you are so busy, completely booked, in demand every hour of the day” (Kreider, 2012).

there are many valuable aspects to digital learning including providing students with unprecedented connectivity and access to information however much has been left out of technology discourses including technologies associated with the majority of the world technologies that have been used for thousands of years multinational agribusiness and pharmaceutical companies realize the importance of Indigenous technologies and have been exploiting and patenting Indigenous intellectual properties and territories for decades just ask Vandana Shiva (1997)

look over there Coyote there’s Sam Jim relaxing on the patio at JJ Bean Coffee House in North Vancouver I remember Sam Jim telling us up home last summer that the written word and computer are dulling our memories he said that oral traditions sharpen recollection and open communication and dialogue with the natural world

ama⁷ sqit Sam Jim we’re wondering if you might want to share any more thoughts on computers in education promoting visual learning as a primary way of learning

“first place I don’t *see* it at all seeing isn’t the word I’d use

I reckon there’s been a whole lot of seeing going on

you’re not going to last very long in the bush standing around looking

and talking you got to use all your givens including your hunches

being bush smart is different from city knowing” (Cole & O’Riley, 2002, p.132-

133) Sam Jim I will always remember you telling us that

“lifelong education for us has always been contiguous



with the process of life and survival

before the coming of churches residential schools prisons

before we knew how we knew we knew" (p.148)

Coyote I recently read Canadian anthropologist/ethnobotanist Wade Davis' book

The Wayfinders: Why Ancient Wisdom Matters in the Modern World (Davis, 2009)

he talks about the loss of the living archive of world knowledges technological practices and imagination by mainstream dismissal and downplaying of traditional wisdom of the Indigenous Peoples and those Nepalese scholar Pramod Parajuli (2001) refers to as "ecological ethnicities."

remember our last two treks to Machu Picchu through the high Andes of Peru

the Salkantay trek 88 kilometres up to 5000 metres the Lares trek near Ollantaytambo the Pachacutec pass at 4400 metres the *apus* the *chacras* the *allyu* meeting with local *Quechua* communities then moving geographically from the altiplano to the high Amazon our meetings with the *Kichwa-Lamista* communities near Lamas and Tarapoto happy healthy without a monetary system living in reciprocity

they shared with us their incredibly sophisticated technologies astronomy agriculture architecture engineering medicine *quipu* that were rooted in Inca and pre-Inca sacred geography aligned with the movement of the constellations the moon the sun the precision measuring cutting and relocating of massive granite rocks to build cities such as Machu Picchu Cusco and Ollantaytambo high the Andes their agriculture more than 10,000 years old corn quinoa squash beans thousands of varieties of potatoes so there could be nourishment in times of drought flood insect infestation the *coca* plant *ayahuasca* and other medicinal teacher plants for healing and ceremony there was no digging into *Pachamama* (Mother Earth) with implements without ceremony everything has spirit is sacred is to be respected and nurtured

Raven I see many similarities with the traditional ecotechnologies we are researching in our own communities that are being lost through the imposition of western schooling knowledges that are etched into and reside in our languages but few Elders can speak *Ucwalmicwts* today half of the original voices of humanity have been silenced within our lifetimes and with that waning silencing and displacing of the diversities of wisdom and technological know-how modernity has failed and even the reframings of postmodernity and poststructuralism are shakily refounded but it seems that western education is still stuck in the progress narrative

I sat on the window sill of your class last term Coyote when you were in your human form you showed a controversial award-winning documentary to the graduate students *Schooling the World: The White Man's Last Burden* (Black, 2010) shot on location in the Himalayan region of Ladakh in India it reminds me of many projects



worldwide to bring western education to non-western peoples Indigenous Peoples and ecological ethnicities have been referred to as “developing” peoples as though we were lower on the evolutionary scale bring on the phrenological psychometricians

the assumption being that everyone everywhere needs western education and modernity dismissing millennia of Indigenous wisdom of eco- technological and spiritual practices for what Ronald Wright refers to as a “short history of progress” (Wright, 2004)

as the director Carol Black points out “the larger fiction which goes unquestioned is [the] romanticized portrayal of education as a panacea for all the world’s ills, a silver bullet that in one clean shot can end poverty, terrorism, and the oppression of girls and women around the world. The reality is that the modern school is no silver bullet, but an extremely problematic institution which has proven highly resistant to fundamental reform. No system that discards millions of normal, healthy kids as failures – many of them extremely smart will ever provide a lasting or universal solution to anything.” (Black, 2010)

in this same film Wade Davis talks about westerners having the notion the everyone else buys into the capitalist economic paradigm and that somehow they will magically achieve the financial wealth that we in the west 'enjoy'

this needs some discussion Coyote because as Helena Norberg-Hodge says

“[t]his model isn’t even working in America 51% of boys and 49% of girls aged 13-19 have a mood, behavior, anxiety or substance use disorder. 15,500,000 American children live in poverty; 16,000,000 suffer from depression and other emotional problems; 120,000 have tried to kill themselves within the past 12 months 46.6% of students fail to graduate from high school in New Orleans; 78.3% in Detroit; 61.1% in New York City” (Black, 2010) and on and on and on it's their numbers buried under success stories

the assumption appears to be that the knowledges and practices of Indigenous Peoples and ecological ethnicities are inferior and that western education is superior because it is brokered by reason and analysis the monozygotal twins cultured in a petri dish called the Enlightenment forged in the Renaissance and the Reformation

I absolutely put my paw down on that Raven Indigenous Peoples and ecological ethnicities and are not failed peoples with unsophisticated cosmologies epistemologies practices and technologies in order to have a Renaissance one needs a naissance something has to have died in order to be re-born I'm not sure what was born or reborn but I know what was buried and what or who was destroyed with respect to the Reformation what was re-formed and for whose benefit one hegemonic genocidal imperializing vision for another what tools were used and who was included who had agency and whose agency was annulled or vapourized

as the Elders say in the film the majority of these children who receive western education feel they have to leave their communities to be “successful” they have learned

to feel ashamed of their traditional ways and families many end up living in the slums of large urban centres eking out a living doing menial jobs and picking through garbage dumps the Elders speak about the children being needed in their communities to help with healthy subsistence living that has been the norm for thousands of years

this is happening right here in Canada in my own First Nations community and in the Indigenous communities with whom we are currently conducting research in Peru Australia Kenya Nepal and we're all paying a very high price with our loss of languages and cultural knowings as Gustavo Esteva (2010) writes that western education cannot be separated from the capitalist project

Wade Davis suggests that if societies were ranked not on technological prowess but on "the capacity to thrive in a truly sustainable manner, with a true reverence and appreciation of the earth, the western paradigm would fail" (Black, 2010) he says it would require four planets to support western levels of consumption throughout the world

Coyote I've heard you talk with graduate students about the social cultural and environmental impacts of electronic technologies including electromagnetic fields being largely ignored in education at all levels the silences about who makes these digital technologies whose lands are mined and flooded to produce and use our computers and cellphones where the millions of tons of toxic waste is shipped and dumped the tens of billions spent on digital technologies in schools the downplaying or dismissal of sustainable technologies tokenizing green technologies and uttering platitudes about place-based technologies and Indigenous technological ecoliteracies that have worked for millennia present progressive

Raven students are thirsty for such conversations they want to know how they are becoming integral components in the global marketplace buy-upgrade-trash-forget-buy-upgrade-trash-forget buying technologies that are obsolete before they ever enter the marketplace no wonder San Francisco put the kibosh on Apple procurement

flash April 2012 Apple doubles quarterly profits to \$11.6 billion while trying to polish its China image of child labour building iPads June 2012 Apple moves all of its MacBooks and desktops from the EPEAT (Electronic Product Environmental Assessment Tool) July 2012 San Francisco blocks municipal purchases of Apple desktops laptops (Smith, 2012)

Sir Ken Robinson (2010) suggests that education needs a revolution not merely an evolution countries based on capitalist economies might have the best quality of life but they have the worst quality of air the earth is reaching a tipping point where humans are about to push the earth over the brink (Roberts, 2012) the time to turn this around is quickly running out of eco-space



Coyote what about that non-Indigenous Australian scholar and trickster Noel Gough (2006) and his work to engage science fiction cyborgs rhizomANTics and more recently the ~ (tilde) as a signaling of “generative potentialities” for performing posthuman pedagogies and “inventing possible~impossible futures” (Gough, 2010) Gough suggests that complexity theorizing offers emergent potentialities to rethink education in what Patti Lather (1991) refers to as “post-paradigmatic diaspora”

Raven Okanagan author and activist Jeannette Armstrong (Armstrong, 1997) suggests that any educational paradigm shifting will need to position Indigeneity centrally and this also goes for any *post*-paradigmatic refiguring of the progress narrative

yes our Elders and Indigenous scholars such as Jo-Ann Archibald (2008) Marie Battiste (2008) Russell Bishop (2011) Peter Cole (2006) George Sefa Dei (2011) Sandy Grande (2004) Michael Marker (2006) have been requesting that Indigenous knowings and practices take their rightful place in education our learnings no longer placed in the margins but part of the majoritarianstream infixed minorized Indigenous portfolios conversations between and amongst equals learning as “*comunalidad*” and “*interculturalidad*” (Meyer, Kirwin & Tooher, 2010)

I heard Richard Kahn (2010) arguing for “robustly critical forms of media, computer, and multimedia literacies” as a way to engage students in political activism suggesting that the traditional ecological knowledges of the “multitude” are crucial to resist “*Empire’s technocapitalist machinery*” (p. 72)

hmmm I wonder how this might work Coyote not all the *Stl’atl’imx* (Canada) and *Kichwa-Lamista* (Peru) communities we are researching with have electricity let alone computers and with respect to reciprocity how will the ethics and protocols of traditional ecological knowledge inclusion be negotiated how might this “sharing” work considering the unequal coercive power relations

Coyote I like what Andean agronomist and member of PRATEC (*Proyecto Andino de Tecnologías Campesinas*/Andean Project for Peasant Technologies) Eduardo Grillo Fernandez (1998) says about irreverence to the primacy of western science and technology as *not* being denial of the foreign but *affirmation* of the knowings of all peoples let’s ask about his notion of “equivalency of epistemologies”

Imanallatac canqui Raven and Coyote good to see you again equivalency for me is that “everyone (be it man, tree, stone) is a person, complete and indispensable, with its own inalienable way of being with its specific responsibility in the keeping of the harmony of the world. It is in such condition of equivalence that this living world relates with each one and the other” (p. 224)

Raven this might require what Deleuze and Guattari (1986) talk about as “minorizing the majority discourse” this is more complex than simply deconstructing



destabilizing the predominant technology discourses in education or unproblematically mixing or adding Indigenous and other othered technological literacies it requires a mapping process of de- and re-territorializing constantly negotiating a shifting equilibrium

Deleuze & Guattari (1987) offer the concept of “rhizome” as a mapping strategy rhizomes “[a]ffirm what is excluded from western thought and reintroduce reality as dynamic, heterogeneous, and nondichotomous; they implicate rather than replicate; they propagate, displace, join, circle back, fold” (O’Riley, 2003, p. 27)

sounds like a mix of trickster discourse anarcho-origami and guerilla horticulture or something like Cole & O’Riley’s (2002) response to William E. Doll, Jr.’s (2002) notion of the ghosts of John Dewey in the curriculum if memory serves me well they did a “pleasurable misreading” (Vizenor, 1993) and mishearing back to the time when Father Otis O’Dewey went up to their communities to ‘educate’ them all the time O’Dewey was talking about “curriculum” with his lisp Irish accent and imperfect *Ucwalmicwts* enunciation they thought that he was talking about “*kr⁷xlhm*” a rogue mountain goat now extinct in their territories the community members would nod their heads as he spoke and Father O’Dewey believed that they all understood and were in agreement

this reminds me of the recent interest in hybridity such as Donna Haraway’s (1997) *Modest_Witness@Second_Millennium.FemaleMan[©]_Meets_OncoMouseTM*

I had great fun with this mutated bio-textual-techno figuration however we need to keep in mind Frédérique Apffel-Marglin’s (1998) caution about hybrid power relations talking about new varieties of corn she writes that these new hybrids make visible the disparate origins of various traits while rendering invisible tens of thousands of years of the inventiveness and work of the Indigenous Peoples who nurtured the seeds the “centre” having the privilege to define the hybrid articulations

and according to Vanessa Andreotti Cash Ahenakew & Garrick Cooper (2011) this “creates an awkward situation for the introduction of Indigenous knowledges in academic contexts: scholars and educators working with Indigenous ways of knowing are called to translate these into the dominant language, logic and technology in ways that are intelligible and coherent (and, very often, acceptable or palatable) to readers and interpreters in the dominant culture”

Raven what you think about Boaventura de Souza Santos (2007) notions of “ecologies of knowledges” and “inter-knowledges” as a way of moving beyond what he refers to as “epistemic blindness” and “abyssal thinking”

Coyote negotiating the abyss in academia has not been easy for Indigenous educators it’s not like the fiscal cliff in Canada and the USA that economists are

talking about Santos is referring to an abyssal cliff where Indigenous Peoples are not anywhere in the sightlines but

over the edge invisible

Santos is talking about exploring pluralities of knowings/practices as well as their possible interactions and interdependence

interdependence as articulated by Tewa scholar Gregory Cajete (2000) as well as

Canadian environmentalists Tara Cullis & David Suzuki (2010) requires an ongoing commitment to caring for the land and creating and nurturing just and equitable cross-cultural relationships using reciprocity and equivalency as measures of success

Coyote isn't that Indigenous Brazilian scholar Vanessa Andreotti walking along the seawall with her dog at Kits Beach *olá kwe kwe skennenko:wa ken* Vanessa would you mind sharing your thoughts on cultural difference and interdependence

oi que saudade "Difference must be not merely tolerated, but seen as a fund of necessary polarities between which our creativity can spark... Only then does the necessity for interdependency become unthreatening. Only within that interdependency of different strengths, acknowledged and equal, can the power to seek new ways of being in the world generate, as well as the courage and sustenance to act where there are no charters." (Andreotti, 2011, p. 178)

this would profoundly change how technology discourses are enacted within and beyond education there is much to be learned about living in more ecologically sustainable ways from Indigenous Peoples and Indigenous knowledges (Leahy, 2012) look at the work of Australian scholars Kurt Seemann & Dora Marinova (2010) with remote desert communities their research demonstrates the benefits of "mutuality of influence" and "scale-free networks" engaging both Indigenous and non-Indigenous technological knowledge systems across communities ecologies and built systems

Coyote an excellent example of this work on the ground is the CAT (Centre for Appropriate Technologies)⁵ project with Australian Aboriginal communities in the Alice Springs area of the Northern Territory exploring synergies between Indigenous technological ecoliteracies and digital technologies to support the communities in their cultural renewal and educational economic and ecological initiatives

also Frédérique Apffel-Marglin's (2012) work with the *Kichwa-Lamista* communities and schools in the High Amazon area of Peru to create pre-Columbia anthropogenic bio-char soil drawing on millennia of *Kichwa-Lamista* traditional ecotechnological knowledges this project supports food security by replacing slash and burn agriculture in an area of intense deforestation and because the technology is adaptable to many ecosystems it has global significance and consequences

Raven on our recent visit to two of the *Kichwa-Lamista* communities we saw that ritual and spirituality play a central role in the technological ecoliteracies similar to *Stl'atl'imx* communities back home. Frédérique refers to this as “subversive spiritualities” ritual ceremonies and festivals enacted as a collectivity of both humans and other-than-humans working toward “a livable common world” (p. 162) that “must be constantly reiterated through intra-actions” (p. 163)

Coyote can you imagine restorying and remapping of technology discourses in education to include the technological practices and know-how of Indigenous Peoples and other ecological ethnicities as well as the interdependence of humans and more-than-humans that nurtures not only mind and body but also the heart and spirit

[voice-over]

“Imagine there's no heaven
It's easy if you try
No hell below us
Above us only sky
Imagine all the people living for today
You may say I'm a dreamer, but I'm not the only one
I hope some day you'll join us
And the world will be as one”⁶

Raven for Alannah Young Leon (2012) "The stories that the mountains contain remind us to listen to our Elders. The stories, ceremonies, and languages are held within the land, and along with them are the teachings" (p. 52) and Tina Ngaroimata Fraser (2012) writes "Maori traditional performing arts lie at the core of Maori development and are inextricably linked to language, culture and community" (p. 122) thus we see the connection between Elders stories ceremonies land language and culture within the context of community and performativity it is through these that we are able to move forward in a good way

Coyote I hold out hope that others might join this conversation as we work to figure out together how we want to live and to tell our stories with respect thoughtfulness luminosity and compassion in these uncertain times

kukwstum'c

nia:wen

Notes

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³ The Coyote and Raven trickster figurations we are writing with/through in this paper are affiliated with our particular cultural histories and locations. They were our earliest teachers as they travelled up through the lakes, rivers, plateaux, wetlands, meadows and mountains of our territories. We can only write from those places/spaces. We acknowledge the plethora of tricksters associated with Indigenous and non-Indigenous peoples worldwide (e.g. Anishinaabe—Nanabozho; Ashanti—Anansi; Celtic—Puck; French—Rénert the Fox; Greek—Hermes; Japanese—Kitsune; Norse—Loki) that also work to interrupt hegemonic discourses through humour, pranks, paradox, clowning, irony and humility.

⁴ Everly Brothers. Bye, Bye Love. Retrieved from <http://www.metrolyrics.com/bye-bye-love-lyrics-everly-brothers.html>

⁵ Centre for Appropriate Technology. Retrieved from <http://www.icat.org.au/>

⁶ Lennon, J. & McCartney, P. *The Beatles – Revolution Lyrics*. Retrieved from <http://www.lyrics007.com/The%20Beatles%20Lyrics/Revolution%20Lyrics.html>

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